THE BARRIERS TO OBESITY PREVENTION OR ELIMINATION IN LIBYA: A PHENOMENOLOGICAL ANALYSIS

by

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Dedication

I dedicate this dissertation to my wife, Fairouz, and our children, Emhamed, Edris, and Retal. You have been patient and supported me through all my personal and academic challenges during our expatriation.

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Abstract

Obesity prevalence in Libya has dramatically increased in the last three decades from 12.6% in 1984 to 30.5% in 2009 and from 36.10% in 2010 to 47.4% in 2019. High rates of obesity put Libyans at risk for contracting diseases, including cardiovascular disease, liver disease, diabetes, and cancer. These obesity-related health conditions ultimately affect national development as the Libyan government allocates much of the healthcare budget to the treatment of obesity comorbidities. The purpose of this qualitative phenomenological study is to explore the perceptions of select U.S. Libyan immigrants about the barriers to preventing or eliminating obesity in Libya. The researcher framed the study using the health belief model (HBM; Hochbaum, 1958; Rosenstock, 1974a). The HBM has six main concepts. Perceived barriers, a concept of the model, guided the development of the research questions. The researcher collected interview data from 10 Libyan immigrants in the United States. The study's findings include a perceived inability of current health education to create awareness about addressing the barriers to obesity prevention or elimination among Libyans. Per the findings, health education regarding obesity is not a priority for Libyans because they do not consider obesity to be a disease. The findings of this study have implications for raising awareness about obesity through primary healthcare. The study may also influence policies relative to the adoption of health education programs that will enforce prevention or elimination rather than treatment of health conditions such as obesity in Libya.

Chapter 1: Introduction

Challenges regarding the adoption of healthy lifestyles and appropriate health education programs have led to a rise in obesity in Libya (Elkhammas & Singh, 2010; Lemamsha, 2016; WHO, 2011). Obesity, according to the World Health Organization (WHO, 2016), is a human condition that is categorized by extreme storage and accumulation of fat in the body. Obesity has more than doubled in Libya in the last three decades as the number of overweight adults continues to increase (Lemamsha, Randhawa, & Papadopoulos, 2019). Obesity increased dramatically from nearly 12.6% in 1984 to 30.5% in 2009 and from 36.10% in 2010 to 47.4% in 2019 (Lemamsha et al., 2019). Obesity has increased steadily in Libya to the extent that the condition has reached epidemic proportions. The failure to promote healthy lifestyles to prevent or eliminate obesity puts Libyans at risk of contracting diseases such as diabetes, cancer, and heart disease (Chan & Woo, 2010; Guh et al., 2009; WHO, 2015b). Barriers to healthy lifestyle choices for obesity prevention and elimination in Libya warranted the need for this research (Lemamsha, 2016). Thus, the purpose of this qualitative phenomenological study is to explore the perceptions of select U.S. Libyan immigrants regarding barriers to preventing or eliminating obesity in Libya. The study will specifically explore the barriers to healthy eating and physical activities in obesity prevention or elimination in Libya. The findings of the study will be significant to healthcare policies on obesity prevention and elimination in Libya. The study may assist the Libyan government in the adoption of efficient health education programs that will improve the performance of health professionals as well as create awareness to facilitate the prevention or elimination of obesity among the Libyan population.

This chapter will address the background and contextualization of the phenomenon of obesity in Libya. Next, the chapter presents the problem statement and the purpose statement,

along with an overview of the conceptual framework and methodology used to collect and analyze data. The chapter also addresses the central research question and research subquestions. Then, the researcher discusses the assumptions of the study, delimitations, limitations, and significance of the study. The chapter concludes with the definitions of terms, the organization of the study, and a summary of the study.

Background and Contextualization of the Issue

Libya is an Arab country located in the Arab Maghreb region of North Africa, bordered by Egypt to the east, the Mediterranean Sea to the north, Sudan and Chad to the south, Niger to the southwest, Tunisia to the northwest, and Algeria to the west. Libya's demographics are from Arab, Amazigh, Tuareg, and Tabu peoples (El Taguri et al., 2008). The population in Libya is around 6,670,000 divided between males, 50.4%, and females, 49.64%. Most Libyans, about 97% are Sunni Muslims; small numbers of Libyans are Ibadi Muslims, and foreigners constitute the minimal Christian presence in Libya (Fanack, 2019). Arab, Mediterranean, and Italian cultures have had a significant influence on Libyan culture. Of consequence to the basis of this study, multicultural interaction is one reason for Libyans' heavy consumption of most types of meat (Fanack, 2019).

Libya, although a developing country, is one of the highest oil-producing countries in Africa. The economy of the State of Libya depends primarily on oil revenues, representing more than 95% of export earnings and 60% of gross domestic product (GDP; Plecher, 2019). Libya spends about 4% of the nation's GDP on education, an average spending rate in North Africa and the Middle East. Education is free for all Libyans, but the only compulsory stage is primary school. Libya has the highest adult literacy rate in North Africa and the Middle East region. The literacy rate for males is 93.9%, and for females, the literacy rate is 83.1% (Plecher, 2019).

Governance in Libya. King Edris ruled Libya at the beginning of 1952 and established the first constitution in Libya (Lobban & Dalton, 2014). The Libyan constitution defines equal rights and the principle of equal opportunities for all Libyans. Colonel Muammar Gaddafi staged a coup against the king in 1969. Gaddafi instituted dictatorial rule and reigned for 42 years. The chaos of the Arab Spring ended Gaddafi's reign in 2011 (Lobban & Dalton, 2014). After the overthrow of Gaddafi, Libyan political leaders attempted to end the state of political division and form a national reconciliation government. They reached an agreement in the Moroccan city of Skhirat, but they could not reach a permanent accord, and armed conflict returned to Libya in 2014 (Lobban & Dalton, 2014).

Libya remains chaotic several years after the fall of Gaddafi and the failure to form a national reconciliation government. There are three geographical and political factions, namely in the south, the east, and the west (Fanack, 2019; United States Institute of Peace, 2018). There have been several militia clashes in the east and west, with most of them propagated by the Government of National Accord and the Libyan National Army, factions supported by the United Nations and the Interim Government, respectively. In the south, Tuareg, Arab, and Tebu armed groups continue to clash over who controls the territory and its resources (Human Rights Watch, 2019). In addition to the divisions and turmoil, militant and terrorist groups take advantage of the political climate to promote violence, organized crime, and radicalization (Fanack, 2019; Human Rights Watch, 2019; United States Institute of Peace, 2018). There are frequent attacks on oil installations that disrupt the economy and the provision of public services, including healthcare (Fanack, 2019; Human Rights Watch, 2019).

Life expectancy in Libya. Libya has had a significant change in demographics in recent years. Life expectancy has increased steadily in the last three decades, from 42.84 years in 1985

to 69.9 years in 2010. The average life expectancy for Libyans has continued to improve to 71.1 years for men and 80 years for women from 2012 to 2018. Moreover, the newborn mortality rate in Libya decreased from 14.1 per thousand in 1969 until it reached 5.1 per thousand in 1990. The infant mortality rate, however, has stabilized between 1990 and 2018 (Fanack, 2019).

While life expectancy has increased in Libya, continued development has introduced new threats, including obesity. From the health perspective, the increase in the rate of obesity in Libya has a direct relationship with diseases that affect life expectancy. Obesity is one of the leading causes of chronic diseases such as heart disease, cancer, diabetes, and hypertension, which are some of the primary causes of death and disability in Libya (El-Fallah, 2014; WHO, 2015b). Cardiovascular diseases cause 37% of deaths in Libya, cancer, 13%, and diabetes, 5% (Daw, 2017). Additionally, obesity negatively affects the productivity of workers, especially those in jobs that require physical exertion (Kudel, Huang, & Ganguly, 2018). People with a body mass index of at least 35.0 indicate a productive health-related loss because they need additional time to complete tasks that require physical exertion, and obesity is a major reason for absenteeism; thus obesity significantly affects the productivity of workers (Kudel et al., 2018).

Healthy eating and physical activity for obesity prevention or elimination in Libya. As it will also be addressed in-depth in Chapter 2, healthy eating and physical activity promote the health of individuals and prevent an increase in the rate of obesity. In 2017, the WHO reported a high prevalence of obesity and overweight among adults and children in the Eastern Mediterranean Region. The countries in this region, which includes Libya, reported the highest obesity rate in the world (WHO, 2017b). The WHO introduced mandatory feeding standards by applying the regional nutrient profile model to assess nutritional quality, introduced healthy meal standards, and implemented measures to eliminate the consumption of high-fat and sugar-rich

meals. The WHO also promoted healthy physical activity through intensive media campaigns. The international organization also emphasized the promotion of a healthy lifestyle through legislation that supported the provision of daily physical activity to students in educational institutions (WHO, 2017b).

Health system and health education in Libya. All Libyan citizens have access to preventive, curative, and rehabilitation services free of charge. The healthcare system in Libya provides health services at three levels: primary healthcare, public hospitals, and specialized hospitals (WHO, 2015b). At the primary healthcare level, the health system provides preventive and curative services in small villages for populations between 5,000 to 10,000. At the public hospitals level, the population receives more advanced health services, including surgical operations and health services for children and women (WHO, 2015b). The third level of the healthcare system consists of specialized hospitals such as the heart hospital, the kidney diseases hospital, and the eyes hospital. In recent years, the health system has achieved many improvements in providing healthcare services. Many infectious diseases such as measles and whooping cough have been eradicated, which has led to a decrease in the infant mortality rate from 160 per 1000 in 1960 to 11 per 1000 in 2010 (WHO, 2015b).

The armed conflict in 2014 and its aftermath have tested the Libyan government's ability to serve its citizenry. Frequent attacks have disrupted the provision of public services, including healthcare (Daw, 2017; Human Rights Watch, 2019). The healthcare system faces challenges such as acute shortages of medical supplies (Daw, 2017). Four out of 80 hospitals in Libya are operating at 75% of their average capacity. More than 17% of hospitals and 20% of other health care facilities have been damaged or destroyed (Daw, 2017).

In addition to physical healthcare services, health education is a part of the healthcare system. It plays a central role in plans and strategies to promote and improve individuals' health in developing countries such as Libya (Salam, El-Amari, & Lathwal, 2013). Health education has three levels: primary, secondary, and tertiary. The primary level of health education targets healthy individuals and groups and helps them learn how to maintain their health and prevent disease and disability (Elfituri, 2010). The secondary level of health education helps people accept the diagnosis of a health condition and helps patients to control symptoms of diseases by either reducing their spread or shortening their duration (Elfituri, 2010). The tertiary level of health education teaches individuals personal self-care, especially those with specific injuries or diseases (Elfituri, 2010).

Barriers to preventing or eliminating obesity in Libya. The purpose of this study is to explore the perceptions of selected Libyan-American immigrants regarding barriers to obesity prevention or elimination in Libya. Researchers (Elfituri, 2010; Lemamsha, 2016) have indicated that the barriers to obesity prevention or elimination among Libyans, which are unhealthy eating and lack of physical activity in addition to poor health education, were essential reasons for the rapid increase in the obesity rate in Libya. Libyans consume large quantities of food that include fast food rich in fats and sugars. With the spread of international restaurants in Libya, the Libyan people have turned to Western food, particularly foods with high fat and sugars and have abandoned the healthy eating lifestyles that once characterized people in the Mediterranean region (Lemamsha, 2016).

Moreover, there is a lack of physical activity among many Libyans (Lemamsha, 2016). Approximately 44% of Libyans adults do not receive adequate exercise, 51.07% of whom are women, and 36%, men (Benjamin & Donnelly, 2013; Musaiger et al., 2013). The increased

reliance on mechanical transportation and sedentary lifestyle habits such as sitting in front of the television for an expanded duration of time and the use of computers are contributors to the spread of obesity (Elmehdawi & Albarsha, 2012). Additionally, population density, especially in the city of Benghazi, leads to overcrowding in open spaces and public parks, leaving a small area for walking or physical activity in the open air (Benjamin & Donnelly, 2013; Musaiger, 2011; Musaiger et al., 2013).

Poor health education also plays a role in the barriers to preventing or eliminating obesity in Libya. The healthcare system does not offer adequate health education programs for the Libyan population (Daw, El-Bozedi, & Dau, 2015a; Salam et al., 2013). Libyans do not receive necessary health information that might protect them from diseases and promote public health (Aburawi et al., 2016; Daw, 2017; Lakhdar, 2016). As a result, the obesity rate has increased from 36.10% among women in 2010 to 47.4% in 2019 (Lemamsha et al., 2019). According to Lemamsha et al. (2019), 75% of Libyans are overweight or obese.

Problem Statement

Obesity has become more prevalent in Libya to the extent that obesity reached the epidemic rate in the 21st century. Obesity has more than doubled in the last three decades as the number of overweight and obese adults continues to increase. (Lemamsha et al., 2019). Elmehdawi and Albarsha (2012) indicated that obesity has become a critical problem in Libya because of its spread from 12.6% in 1984 to 30.5% in 2009 among Libyan adults between the ages of 20 to 74 years. The prevalence of obesity among women in Libya is much higher than that of men. The prevalence of obesity among females age 18 and above was 29.7% in 1995, while the prevalence of obesity among men was 14.2%. In 2005, the prevalence of obesity among women increased to 34.0 %, and the prevalence of obesity among men increased to

18.5%. In 2010, the prevalence of obesity among the females in Libya continued to rise until it reached 36.10%, while the prevalence of obesity among men increased to 21.2%. The prevalence of obesity in Libya increased among women to 39.6% and 25.0% among men in 2016. A study conducted by Lemamsha et al. (2019) revealed that the prevalence of obesity and overweight in Libya increased rapidly. The results of the study indicated that 75% of Libyan adults suffer from overweight and obesity, especially among females compared to men. In 2019, the rate of overweight increased among women to 33.2% compared to 32.4% among men, while the prevalence of obesity among women was 47.4% compared to 33.8% among men (Lemamsha et al., 2019).

The effects of obesity in Libya are closely associated with several diseases, including cardiovascular disease, liver disease, diabetes, and cancer, any of which may lead to premature death and various disabilities (Chan & Woo, 2010; Guh et al., 2009; WHO, 2015b). In 2014, the city of Benghazi, the second-largest city in Libya in terms of population, witnessed a rapid increase in obesity-related chronic diseases, which led to premature deaths and disabilities (Lemamsha, Papadopoulos, & Randhawa, 2018). Consequently, the various medical conditions caused by obesity negatively affect national development in Libya. In 2012, the cost of treatment for obesity-related comorbidities was approximately 1.3 billion Libyan Dinar (around £638 million), a cost which made up 50–65% of the nation's entire annual healthcare budget (Lemamsha et al., 2018).

This study seeks to explore what selected Libyans living in the United States perceive as barriers to the prevention or elimination of obesity in Libya. The perspectives of these Libyan immigrants may be useful in implementing programs that will focus on the prevention and elimination of obesity in Libya. These strategic programs would not only benefit the Libyan

population but also reduce the funds the Libyan government spends on the treatment of obesityrelated comorbidities (Lemamsha et al., 2018).

Purpose Statement

The purpose of this qualitative phenomenological study was to explore the perceptions of select U.S. Libyan immigrants about the barriers to obesity prevention or elimination in Libya.

Overview of Conceptual Framework and Methodology

This section of the study delivers a summary of the conceptual framework that presents the inquiry parameters of the HBM. The HBM will be used to examine the perceptions of selected Libyan immigrants in the United States regarding barriers to obesity prevention or elimination in Libya. The researcher will provide an overview of the concepts of the HBM. The discussion will also include measuring the concepts of the model and demonstrating how the model supports the research topic. Additionally, this section provides an overview of the methodology, consisting of a comprehensive discussion of the qualitative approach, subtypes of the methodology, and the specific method used by the researcher to collect and analyze data to answer the research questions.

Overview of the conceptual framework. The researcher used the HBM model as the conceptual framework for the study. In the 1950s, the HBM was generated in the United States by the psychologists Hochbaum, Leventhal, Kegeles, and Rosenstock to understand people's widespread failure to accept disease prevention or early-stage tests for symptom-free diseases (Becker, 1974). The HBM has six concepts: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action, and self-efficacy.

***Perceived susceptibility*.** Rosenstock (1974b) established that perceived susceptibility includes an individual’s perception that a health dilemma is personally essential or that the

diagnosis of illness is exact. People who believe they are susceptible to a specific health dilemma will involve themselves in behaviors to decrease their risk of contracting the health problem (Rosenstock, 1974b). People with low perceived susceptibility might dismiss their predisposition to a specific disease. Other people may, however, recognize the chance that they could develop the disease but believe such development is improbable (Rosenstock, 1974b).

***Perceived severity*.** Rosenstock (1974b) defined perceived severity as a measure of an individual's belief in the scope of the harm that the illness can cause. Individuals who view specific health problems as serious are likely to select behaviors to prevent the health problem from occurring. Seriousness involves beliefs about the illness, such as whether the disease is lifethreatening, causes incapacity or injury, and if it will have significant effects on one's performance in work or social roles (Rosenstock, 1974b).

***Perceived benefits*.** Rosenstock (1974b) claimed that perceived positives or benefits indicate a patient's belief that the treatment will help cure or prevent the disease. Predictors are linked to a person's assessment of the value of enhanced health behaviors to reduce the dangers of sickness. Even if an individual considers the danger of contracting a serious health condition to be a significant threat, any possible behavioral change will be affected by the person's perception of the perceived benefits of different measures available to decrease this danger (Rosenstock, 1974b).

***Perceived barriers*.** Becker (1974) established that perceived barriers are those obstacles that prevent people from being willing to change their behaviors. He argued that people's beliefs regarding the concrete and psychological costs of the proposed work are influenced by the perceived negative aspects of the barriers to healthy work as prohibitive to the practice of recommended behaviors (Becker, 1974). Rosenstock (1974a) claimed that there is a kind of

unconscious analysis of benefits and costs that occur when people compare the expected benefits to work with perceived barriers. People may believe a new procedure is effective in diminishing their susceptibility to illness or the severity of illness, but the process may be costly, uncomfortable, unpleasant, irritating, or malignant (Rosenstock, 1974b). Specialists in the field of health education are required to reduce these barriers so that people will take measures recommended to them. Reducing barriers to health education means providing correct information, correcting misconceptions, and providing incentives (Sharma & Romas, 2012). For instance, to encourage people to quit smoking, health education professionals comfort smokers, saying that they can defeat the smoking habit and change the concept that it is impossible to overcome addiction to tobacco by giving an example of individuals who have already managed to overcome this habit (Sharma & Romas, 2012).

***Cues to Action*.** Becker (1974) claimed that cues to action are the driving force that make people feel the necessity to take practical action. He argued that the cues might be internal, such as the perception of the condition of the body, or external interactions, such as interpersonal communication or getting a message from a doctor for a medical examination (Becker, 1974). Sharma and Romas (2012) noted that if the perceived severity or susceptibility is low, the person will need a strong stimulus as a cue to action, but if the perceived severity or susceptibility is high, a simple motivation will be enough.

***Self-efficacy*.** According to Rosenstock et al. (1988), a person must be persuaded that he or she can succeed in performing the desired behavior to produce results. Self-efficacy is the capability of a person to complete the behavior and to take successful action in changing that behavior (Rosenstock et al., 1988). People must believe that change in a specific kind of behavior

will result in benefits or perceived benefits at an acceptable cost. Individuals must also feel that they are self-efficacious to overcome observed barriers and act (Rosenstock et al., 1988).

The characteristics of the HBM confirm that if a person is to act to evade illness, then that person must believe he or she is susceptible to the sickness (Rosenstock, 1974a). The occurrence of the sickness must have at least a moderate influence on some component of the person's life. Taking a particular action will be beneficial only if it lessens the person's susceptibility to the severity or reduces the disease's severity without having to overcome significant psychological obstacles such as cost, rest, pain, or embarrassment (Rosenstock, 1974a). Concerning testing for the early discovery of the disease, the same factors as the above are necessary. However, the person must believe that he or she is susceptible to the illness even in the absence of symptoms (Rosenstock, 1974a).

The HBM has been used as the conceptual framework in health behavior studies on a large scale. The HBM was created to predict and explicate health-related behaviors, especially regarding the use of health services (Becker & Janz, 1984; Siddiqui, Ghazal, Bibi, Ahmed, & Sajjad, 2016). The HBM proposes people's perceived benefits of action, barriers to activity, beliefs about health problems, and self-efficacy regarding participation or non-participation in health-promoting behavior. Cues to action must exist to produce enhanced health behavior. Considerations of the dimensions of the HBM should be part of health education programming (Becker & Janz, 1984).

In this study, the researcher explored the perceptions of select U.S. Libyan immigrants about the barriers to preventing or eliminating obesity in Libya. The researcher used only the perceived barriers concept of the HBM to answer the research questions of this study because the cause of the high prevalence of obesity in Libya seems to be the presence of particular challenges

that prevent people from adhering to alternative and healthy lifestyle choices. These challenges may serve as barriers to obesity prevention and elimination in Libya. This assertion informed the study's purpose, which aligns with the problem of the study. HBM is an appropriate framework to address the perceptions of Libyans living in the United States regarding perceived barriers to obesity prevention or elimination in Libya.

Overview of the methodology. The researcher employed a qualitative research design for this research. A qualitative research design is the essence of socially conceived interpretation, the close relationship between the researcher and what has been investigated, and the circumstantial limitations that constitute the investigation; such investigation emphasizes the nature of the investigation loaded with value (Denzin & Lincoln, 2017). Investigators search for answers to questions that emphasize how social and relevant expertise is created. Contrarily, quantitative studies stress analysis and measurement of the causal relationships between variables rather than approaches (Denzin & Lincoln, 2017). The goal of qualitative research is to gain an understanding of the meaning and experiences of a specific group of people, organization, society, or person from their individual perspectives (Creswell, 2014; Hammarberg, Kirkman, & de Lacey, 2016).

The research design subtype for this research is interpretative phenomenological analysis (IPA). IPA is a qualitative approach designed to provide detailed tests of personal experience. IPA produces information about the lived experience on its own terms rather than from preconceived theoretical precepts (Patton, 2015). IPA indicates that this approach is an interpretative endeavor as humans are sense-making organisms. IPA focuses on "discovering how individuals understand the experience and transform experimentation into individual awareness as a common denominator" (Patton, 2015, p. 115). The personal experiences of

individuals who experience a phenomenon are essential and include things such as the ability to interpret, remember, understand, describe, and clarify to others (Patton, 2015). Through this phenomenological methodology, the researcher seeks to determine the specific ideas and common behaviors of all participants who were crucial to understanding perceptions about the barriers to obesity prevention or elimination in Libya (Patton, 2015). The researcher collected data using semi-structured interviews and analyzed the data using the IPA approach.

Research Questions

The following overarching research question evolved from the research problem and the concept (perceived barriers) of the HBM: What do select U.S. Libyan immigrants perceive as the barriers to the prevention or elimination of obesity in Libya? The following research subquestions were developed from the literature and align with the problem and purpose of the study:

RQ1: What do select U.S. Libyan immigrants perceive as the barriers to healthy eating to prevent or eliminate obesity in Libya?

RQ2: What do select U.S. Libyan immigrants perceive as the barriers to physical activity to prevent or eliminate obesity in Libya?

Assumptions of the Study

The researcher made several assumptions for the study. First, the researcher assumed the participants, Libyans who lived in the United States, would respond to the interview honestly about their perceptions of obesity prevention and elimination in Libya. People might not be honest, either because they are ignorant about the topic or because they had unhealthy habits and, therefore, may be ashamed to share information with others. However, the researcher assumed that a friendly attitude and a confidentiality agreement would mitigate these concerns.

Second, the researcher assumed the criterion used to select the participants would ensure that all participants had previously encountered the same phenomenon in the past five years or less in Libya although the participants were currently living in the United States. The researcher excluded from the study all potential participants who did not meet the selection criteria.

Third, the researcher assumed the participants would have a genuine interest in contributing to this study and adding to the literature because they had no connection to the researcher nor any association with the University of West Florida. The researcher carefully explained the real purpose of the research to potential participants who might anticipate an advantage from their contribution to the study and excluded those individuals who demanded more.

Fourth, the researcher assumed the problem presented in this study was valuable and worthy of study because of the high prevalence of obesity in Libya due to inadequate health education. Libya needs real reform regarding primary healthcare, and health education is the backbone of such reform. Participants were aware of the differences in their access to health education in Libya. Wealthy participants had access to the private healthcare sector in Libya, while less affluent participants had access to only public healthcare. Thus, the experiences of the participants with Libyan healthcare may vary. The primary benefits of the study are aimed at Libyans who utilize public health services.

Finally, the researcher assumed that the perceptions of Libyans who lived in the United States regarding obesity and health education in Libya would be different from their perceptions regarding health education in the United States. The healthcare system in the United States is different from the healthcare system in Libya. More affluent Libyans might have had access to the American healthcare system before moving to the United States or might have had access to

private Libyan healthcare that, in some respects, rivals healthcare in the United States. Nonetheless, the Libyan healthcare system was, by and large, quite different from the American system (Sharma & Romas, 2012).

Delimitations and Limitations of the study

Delimitations indicate how the researcher narrowed the study's scope, and limitations show the inherent restrictions that might influence the findings of this study (Patton, 2015).

Delimitations. Delimitations are specific boundaries the researcher deliberately chose to set on the project (Patton, 2015). The delimitations of the study are aspects under the control of the researcher (Roberts, 2010). Consequently, delimitations can limit the depth of the study and determine the boundaries of the study as they relate to the elements of the sample, problem, site selection, and methodology (Roberts, 2010). The researcher used a purposive sampling method rather than random sampling to select the participants because of the specific characteristics of the population (Patton, 2015). Purposive sampling was an appropriate type of sampling for selection of the participants for the current study because it permitted the researcher to choose the participants with specific characteristics that would support meeting the goal of the study. The researcher selected participants for interviews using one of the purposive sampling types, the homogeneous type. This type of sampling allows the researcher to select participants who have shared characteristics (Patton, 2015).

The population for this study was a specific group of Libyans who were born and lived in Libya before immigrating to the United States. The researcher chose this population because of their experiences with health education and obesity in Libya before migrating to the United States. To address the purpose of the study, the researcher adopted a qualitative rather than a quantitative methodology to glean meaning and experiences from the participant's perspective

(Hammarberg et al., 2016). The sub-type of the qualitative methodology was a phenomenological analysis that focused on discovering how individuals understood the phenomenon within its real-life context (Patton, 2015).

There was an additional delimitation in the employment of interviews as a source for collecting data. Effectively interviewing participants is an art and a skill (Smith, Flowers, & Larkin, 2009). Those participants who feel safe sufficiently enough to be sincere and open their real lives to the researcher provide rich data for the study (Patton, 2015). The researcher was concerned with establishing a positive research connection with the participants to produce the data required for analysis (Smith et al., 2009).

Limitations. The limitations of the study are internal weaknesses in the design that the researcher cannot control that might affect the findings of the study (Roberts, 2010). The researcher addressed limitations that might have affected the credibility or reliability of the study's findings or render them nontransferable or nongeneralizable. For example, some participants might be health professionals, and they might be wary of answering the questions adequately; because of potential cultural and religious conflicts, women might not be available for interviews; or participants might not feel comfortable disclosing the details of their personal experiences and their perceptions with the researcher. On the other hand, participants might be exceedingly eager to express events more positively to please the researcher with the information they think is needed or useful (Patton, 2015). To mitigate these limitations, the researcher assured the participants about trust and confidentiality through informed consent. The consent form, which includes the purpose of the study and the participants' right to exit the study at any time, helped participants feel more comfortable participating effectively and providing the researcher with adequate answers on the topic of the study (Creswell, 2013).

Additionally, the choice of framework might have limited the study. The HBM has little predictive power (Champion & Skinner, 2008). Therefore, this study is designed neither to suggest what constitutes proper behavior regarding obesity and health education among Libyans nor to predict behavioral changes among Libyans. This phenomenological study would provide a careful analysis of Libyan expatriates' perceptions about obesity prevention and elimination in Libya.

Significance of the Study

This study seeks to explore the perceptions of Libyans who are living in the United States regarding the barriers to obesity prevention or elimination in Libya. The literature lacks studies related to the perceptions of Libyans who are living in the United States about obesity in Libya; therefore, the findings of this study will add new information to the literature. Also, this study will add to the literature the perspectives of Libyans residing in the United States regarding obesity prevention or elimination and perceived barriers that prevent people from adopting healthy behaviors that prevent or eliminate obesity (Rosenstock, 1974a). The study might provide researchers and those interested in obesity and health education in the Middle East with a view of health education in Libya compared with the rest of the Middle Eastern and North African (MENA) countries.

The findings might provide a more extensive understanding of the effect of the inefficiency of health education programs on obesity in delivering training courses for health professionals that meet the needs of all segments of the Libyan population (El-Fallah, 2014). The findings of this research might provide academics and trainers with the ability to design and implement effective courses for primary healthcare and also integrate them into the curricula of medical schools, health flyers, and pamphlets used to improve and enhance the public health of

the Libyan population. Consequently, the findings of this study might help healthcare centers in Libya to provide the tools needed to implement specific health education programs to reduce the spread of obesity (El Oakley et al., 2013).

This study can inform administrators' and policymakers' decisions to increase resources and support to health workers involved in health education in terms of training and enhancing their competencies. Policymakers can make a national plan for health education to prevent or eliminate obesity in Libyan society. Also, the findings of the study might assist policymakers of the Ministry of Health in Libya to develop health education programs to support healthcare professionals in making appropriate decisions to combat obesity in Libya (El Oakley et al., 2013).

Definitions of Terms

This section includes the operational definitions of the terms used in the study.

Developing countries. The term refers to countries that are still under development and have not reached the same developmental stage as advanced nations (Salam et al., 2013).

Health education. The term refers to a learning experience designed to help communities and individuals increase their health by influencing their attitudes and expanding their knowledge (WHO, 2019).

National channels. The term refers to television channels that broadcast government programs and policies (Elfituri, 2010).

Obesity. The term refers to a body condition that is categorized by extreme storage and accumulation of fat in the body (WHO, 2016).

Polyclinics. The term refers to small health centers situated in every city or village in Libya that offer essential health services (El Taguri et al., 2008).

Primary healthcare. The term refers to the provision of health education, vaccinations, nutrition, and maternal and child health (Elfituri, 2010; French, 1990; Hubley, 1986).

Public hospitals. The term refers to accommodation hospitals funded and managed by the Libyan government (El Taguri et al., 2008).

Self-care. The term refers to the situation in which an individual with a specific disease or medical condition takes care of him or herself without the help of anyone else (Elfituri, 2010).

Sick-role behavior. The term refers to activities that one would undertake to become well (Champion & Skinner, 2008).

Specialized centers. The term refers to centers that specialize in the treatment of specific diseases such as cardiac and kidney diseases (El Taguri et al., 2008).

Organization of the Study

Chapter 1 of this manuscript begins with a discussion of the contextual background of the problem. This contextual background leads to a discussion of the current problems this study seeks to address: an increase in the prevalence of obesity and its impact on lives and national development. The obesity rate continues to increase as a result of challenges in the adoption of healthy lifestyle choices and appropriate health education programs (Elabani & Kure, 2015; Lemamsha et al., 2018). The section continues with the purpose of this study, which is to explore the perceptions of select U.S. Libyan immigrants regarding barriers to preventing or eliminating obesity in Libya. The researcher interviewed participants to determine their perceptions concerning perceived barriers to obesity prevention or elimination in Libya. The section continues with a discussion of the HBM conceptual framework and an overview of the qualitative methodology and methodological sub-type, phenomenology. The chapter also provides a central research question and research sub-questions that developed from the literature

and aligned with the problem and purpose of the study. Additionally, the chapter discusses the study's delimitations and limitations as well as its significance. The chapter presents operational definitions of the terms used in the study, provides a roadmap of how the entire manuscript has been organized, and concludes with a chapter summary.

Chapter 2 provides the two sections of the literature review. The first section is a topical literature review, and the second section is a conceptual literature review. In the first section of Chapter 2, the researcher provides significant information related to the topic of the study starting with Libya's demographics, including information on its location, population, language, ethnicity, culture, religions, gross domestic product, educational structure, and size of the educational system. Under Libya's demographics heading, the study also addresses the country's historical governance, from Spain's invasion of the territory in 1510 to the Libyan National Agreement Government in 2019. Next, the first section of Chapter 2 covers trends in life expectancy for Libyans. The study describes the structure of the healthcare system and health education, including the three levels of the system and the types of health services the healthcare system provides to Libyans. Also, the section addresses health education programs in Libya in terms of contents and challenges health education faces. The section continues with a discussion of obesity prevalence in the MENA region and obesity prevention or elimination in the region. The section also provides discussion related to obesity and healthy lifestyle choices in the MENA region. The section goes on to offer data regarding obesity prevalence in Libya and the trends in the last three decades, along with the relationship of healthy eating and physical activity to obesity prevention and life expectancy. The section also discusses the barriers to healthy eating and physical activity in preventing or eliminating obesity in Libya.

The second section of Chapter 2, the conceptual framework, provides the history and origin of the HBM. The section follows up by describing the six concepts of the HBM. Next, the section discusses the relationship between the HBM concepts and explains the connection between the concepts of the model. The study provides evidence for HBM's performance by presenting studies to support the HBM. Then, the section continues by discussing how some scholars have criticized the HBM and rebuttals to these criticisms. The section also provides the application of the HBM and how the concept of perceived barriers helped to develop the current study's research questions. The section goes on to explain why the HBM model is appropriate for the study. Finally, the section provides a summary of the major issues raised in Chapter 2.

Chapter 3 begins by mapping the research design of the study by providing information related to the research methodology and methodological subtype used in the study. The chapter presents the qualitative paradigm and offers a definition of qualitative methodology, its advantages and weaknesses, and a justification for the chosen methodology's appropriateness for the study. Then, the chapter describes the qualitative methodological subtype, IPA, and its advantages and weaknesses, in addition to how the weaknesses will be addressed in the study. Next, the chapter discusses the site selection, the population, and participants of the study. The chapter also presents participant selection methods, ethical issues and permissions, and data sources. Further, the chapter presents a description of research protocols, instrumentation, field testing, data collection procedures, research positionality, and assurance of trustworthiness and rigor. Finally, the chapter discusses data analysis techniques and concludes with a chapter summary.

Chapter 4 starts with a description of the participants, including demographic information about the participants involved in the study. Next, the chapter discusses the presentation and

analysis of findings for the research questions and addresses each research question based on the interview questions and the themes that emerge from the participants' responses. Finally, the chapter concludes with a chapter summary.

Chapter 5 begins with summary and major findings, providing a summary of the entire study from background to findings, and explains how the findings achieve the purpose of the study and answer the research questions. Next, the chapter presents the conclusion, which shows that data from the study and data from other studies support the conclusion. The chapter is followed by interpretations of findings and conclusions that emerge from the study, addressing how these interpretations relate to the purpose of the study and other studies examined in the literature review. Also, the chapter covers the implications of the findings of the study to policy, theory, and practice. Additionally, the chapter discusses suggestions for future research, limitations, and reflexivity, and ends with a chapter summary.

Chapter Summary

This study stems from the rate of obesity among Libyans in the past three decades. The increase in the rate of obesity among Libyans is a significant cause of the spread of chronic diseases such as cardiovascular diseases, diabetes, and high blood pressure. These diseases are some of the leading causes of death, disability, and reduced life expectancy. Treatment of chronic diseases related to obesity cost the Libyan state treasury vast sums of money, which in turn negatively affects the development of the Libyan state. This vital problem has led to the purpose of this study, which is to explore the perceptions of select U.S. Libyan immigrants about the barriers to obesity prevention or elimination in Libya. To explain health-related socialpsychological health behavior, the study uses HBM to reveal the perceptions of U.S. Libyan immigrants about the barriers that thwart the prevention or elimination of obesity in

Libya. The researcher narrowed this frame of the investigation to only the perceived barriers described in the model. An interpretative phenomenological analysis explains the barriers that prevent or eliminate obesity among Libyans. This qualitative research clarifies the perceptions of selected participants about the barriers that prevent or eliminate obesity and the impact of these barriers on the public health of Libyans regarding obesity. Qualitative research is characterized by studying the phenomena, experiences, and perceptions of individuals; therefore, it is appropriate for this study to answer the research questions about barriers to healthy eating and physical activity. The perceptions of the barriers that the participants revealed provided valuable and critical narratives of the specific problem. The importance of this study is that it will, in turn, fill a gap in scientific research on obesity in Libya. The findings and conclusions of the study are reliable and can be confirmed, relied upon, conveyed, and circulated to persons other than those who participated in this study. The findings and conclusions of this study can disseminate health education about barriers to obesity prevention or elimination in Libya.

Chapter 2: Literature Review

The purpose of this study, as indicated in Chapter 1, was to explore the perceptions of select U.S. Libyan immigrants regarding barriers to obesity prevention or elimination in Libya. The literature review is presented in two sections. The first section focuses on the topical literature review, and the second section concentrates on an in-depth review of the HBM conceptual framework.

The first section discusses Libya's demographics relative to population trends, GDP trends, institutional structure (i.e., compulsory, public), religion, culture, and health. The first section further provides information about Libya's historical governance, including Gadhafi's regime, Arab Spring, and dual governance by geography. Subsequently, the section discusses trends in life expectancy relative to morbidity and mortality. Also, the section presents the relationship between obesity and disease to life expectancy and productivity and the relationship of healthy eating and physical activity to obesity prevention or elimination. Additionally, the section addresses literature related to the structure of Libya's health system and health education, showing trends over the last couple of decades. Moreover, the section discusses barriers to obesity prevention or elimination relative to healthy eating and physical activity, information which aligns with the purpose of this study and contributes to answering the research questions and achieving the purpose of the study.

The second section covers the HBM, how and why the model was developed, and provides explanations of the origins, concepts, and relationships among the HBM's concepts. Next, the section examines evidence for the HBM's performance, applications of the HBM, the

HBM's alignment to the study, the researcher's use of the HBM to explore barriers to obesity prevention or elimination in Libya, and limitations of the HBM's concepts. Chapter 2 concludes with a summary discussing all the significant issues raised in the chapter.

Topical Literature Review

The topical literature review section of Chapter 2 presents a discussion about Libya's demographics, including population, historical governance, religion, and culture. This discussion is followed by trends in life expectancy, the structure of the health system and health education, and the challenges facing the health system and health education in Libya. Next is a presentation on obesity prevalence in the MENA region, obesity prevention or elimination in the region, and lifestyle in the MENA. Following, the section presents a discussion on obesity prevalence in Libya, the relationship of obesity and disease to life expectancy and productivity in Libya, the relationship of healthy eating and physical activity to obesity prevention or elimination in Libya, and the relationship of health education to obesity prevention or elimination in Libya. The section concludes with a discussion of the Mediterranean diet's relationship to obesity prevention or elimination in Libya, as well as barriers to preventing or eliminating obesity in Libya relative to healthy eating and physical activity.

Libya's demographics. Libya is an Arab country located in the Arab Maghreb region in North Africa, bordered by Egypt to the east, the Mediterranean Sea to the north, Sudan and Chad to the south, Niger to the southwest, Tunisia to the northwest, and Algeria to the west (Benamer & Bakoush, 2009). The Libyan state was formed in 1951 after a decision by the United Nations to unite three historical regions: Tripoli, Barqa, and Fezzan, a total area of 1,800,000 square kilometers. The population of Libya at that time was approximately 1,100,000 (El Taguri et al., 2008). Most of the Libyan population lives in the capital city, Tripoli, and Benghazi, the

secondlargest city in the country. Libya has a Mediterranean coast about 1,770 square kilometers (El Taguri et al., 2008). Libyan cities overlooking the Mediterranean Sea enjoy a moderate climate.

However, the inland climate in Libya is mostly dry; most cities in Libya have a desert climate. Libya is considered one of the driest countries in the region due to the prevailing desert environment which represents about 90% percent of the country's area (El Taguri et al., 2008).

Population. The population of Libya at the time of independence in 1951 was about 1,102,000. The population of Libya increased to 1,733,000 by 1965 and continued to increase rapidly until it reached 3,219,000 in 1980. The population growth accelerated in a way that, by the year 2000, it had reached 5,357,000 (Fanack, 2019). The last census statistics in 2017 indicated that the population of Libya had reached 6,670,000, comprised of 50.4% males and 49.64% females. An estimated 25.8% of the country's population was under age 14, 64.4% of the population was age 15-54, and 4.3% of the population was age 65 and older (Fanack, 2019). Census data indicated that 77.9% of Libyans lived in urban areas, while the rest of the population lived in rural and desert areas. Libyan society is organized into tribal groups. In 2019, most of the Libyan population were Arab, constituting 97%. The remaining 3% was divided among the Berbers, Tuareg, and Tabu ethnicities. The Berbers live in the northwest of Libya and speak the Amazigh language alongside Arabic (Fanack, 2019). The Tuareg and Tabu live in the desert region in the south and speak local dialects in addition to Arabic. Arabic is the official language of all Libyan residents, irrespective of their ethnic group (Fanack, 2019).

Gross domestic product. The economy of Libya depends primarily on oil revenues, which represent more than 95% of the export earnings and 60% of the nation's GDP (Plecher,

2019). Libya is one of the highest oil-producing countries in Africa. The average GDP in 1990 was about 41.80 billion US dollars. In 2002, the GDP declined drastically, reaching a low of 20.48 billion US dollars (Plecher, 2019). However, the national revenue rebounded in 2008 to 87.14 billion dollars. The country could not maintain the higher GDP, and it sank again to 34.7 billion dollars in 2011 during the Arab Spring period (Plecher, 2019). After one year, the GDP again recovered and rose to 81.87 billion dollars in 2012. The complications of the political situation and the beginning of the civil war in 2014 made the GDP decrease again to 41.14 billion dollars. The continuation of the civil war in 2016 reduced the GDP to 26.22 billion, but it then recovered slightly in 2018 to 48.33 billion dollars (Plecher, 2019). The GDP per capita in Libya in 1990 was 6,000 U. S. dollars; 14,383 dollars in 2008; and 13,570 dollars in 2012. The GDP per capita decreased to 4,039 dollars in 2016 and then slightly improved to 7,235 dollars in 2018 (Plecher, 2019).

Educational structure. The educational structure in Libya developed rapidly in 1963 because of oil revenues. However, employment opportunities in education did not open for women until later (Tamtam, Gallagherb, Olabic, & Naherd, 2011). Education gained value in Libya because, after 1963, it was free and compulsory for children between ages six and 18 to attend school. On average, about 766,807 children enroll in primary schools in Libya every year, and about 97,334 teachers are employed with the Libyan school system. Primary school is compulsory, and students study a basic education program in science, mathematics, history, and medical sciences.

In the secondary education stage, the student can choose between applied sciences or literary studies to prepare for admission to university. About 717,000 students are enrolled in secondary and middle school every year. Libya's public and specialized universities and institutions provide higher education, with about 287,172 students enrolled in Libyan

universities. There are eight universities in Libya. There is also the Open University in Tripoli, which has 16 campuses across the country.

The Libyan government finances and supervises all levels of the education system, including curricula, textbooks, training, and teaching (Tamtam et al., 2011). The Libyan government has been interested in higher education programs inside and outside Libya. It has established an academy for postgraduate studies in specific disciplines and has encouraged students to study abroad through scholarships for high-quality education (Tamtam et al., 2011). Libya spends about 4% of GDP on education, a rate which is average in North Africa and the Middle East (Tamtam et al., 2011).

The rate of Libyan literacy is 96%, and the illiteracy rate is meager (Tamtam et al., 2011). Libyan has the highest adult literacy rate in the region. The male literacy rate is 93.9%, the female literacy rate is 83.1%, and young people's literacy rate is 100%, a rate higher than neighboring countries' literacy rates (Tamtam et al., 2011). Despite the rapid development of the educational system, there are challenges regarding quality of output, educational infrastructure, teachers, curricula, lack of reliable educational standards, and inefficiency in the distribution of educational resources throughout the different areas in Libya (Tamtam et al., 2011).

Religion. Approximately 97% of Libyans are Sunni Muslims, constituting most of the population. A small number of Libyans are Ibadi Muslims. Foreigners contribute to a very small Christian presence in Libya (Lobban & Dalton, 2014). Islam has been in Libya since the country's parting with the Arabian Peninsula. Religion represents an essential part of the lives of Libyans and is the leading influencer in law (Lobban & Dalton, 2014). In the last century, the Senussi Sunni Sufi Movement was the most influential in Libya as the movement built Senussi Zawya, Islamic centers that taught the Quran and Islamic studies. The Senussi Zawya helped free

Libya from political unrest and anarchy by giving the Libyan people religious connectivity and a sense of social unity. The Senussi Movement also had a significant role in opposing the Italian invasion of Libya that lasted from 1911 to 1937 (Lobban & Dalton, 2014).

Culture. Libyan society is comprised of a blend of cultures as a result of exposure to many ancient and historical backgrounds. Libyan culture has its roots in African, Barbar, Turkish, and Arab cultures (Lobban & Dalton, 2014). Libya was an Italian colony for about thirty years; thus Italy also influenced the Libyan culture. Libya has, however, managed to preserve its traditional folk culture to this day. Libya did not contribute significantly to the broader tradition of Arab literature because the Arab Renaissance did not arrive early in Libya as it did in other Arab regions. Libya developed its literary traditions through oral poetry.

Libyan cuisine was influenced by the Arab, Mediterranean, and Italian cultures that converged in the region (Lobban & Dalton, 2014). Libyans consume halal meat, which is meat from animals that have been slaughtered humanely. Food is symbolic and central to Libyan culture, with lunch being the most important meal of the day. During lunchtime, shops and companies close their doors for a few hours in the afternoon to allow families to gather in their homes to eat (Elmehdawi & Albarsha, 2012). Libyans have the habit of drinking tea and coffee after meals to help with digestion. Usually, Libyan families gather to drink afternoon tea and coffee until the evening while talking about their day.

Libyan society is particularly conservative, with a strong focus on gender stereotypes (Elmehdawi & Albarsha, 2012). The Libyan people have a tradition of completely covering women and excluding them from social interactions. Libya is a society where women have limited freedom outside their homes. Marriage in Libyan society is highly regarded because

marriage and procreation continue the family line. Parents and older members of the family bear the responsibility and burden of full living expenses for their children (Lobban & Dalton, 2014).

Historical governance. Spain invaded Libya in the 16th century. By 1510, Libya was under the rule of the Spanish, known as the Knights of Saint John. This rule intensified the conflict between the Ottoman Empire and Spain. The Ottomans, under the leadership of Admiral Sinan Pasha, took control of Libya in 1551 (Lobban & Dalton, 2014). Ottoman rule under Pasha was governed by a ruler from Tripoli appointed by the High Gate in Astana. By 1858, the rule of the Ottomans in Libya weakened, and European colonial states began the scramble for interests in Africa (Lobban & Dalton, 2014).

Between 1911 and 1912, the Ottomans surrendered Libya to Italy, making Libya's three provinces, Tripoli, Barqa, and Fezzan, Italian colonies. The Italians divided Libya into two regions administered by Italian rulers. About 150,000 Italians moved to settle in Libya (Lobban & Dalton, 2014). Libyans began to resist the Italian colonization under the leadership of the Mujahid Omar al-Mukhtar, Ahmed al-Sharif, and Prince Idris al-Senussi. In 1934, Italians killed half of the Libyan Bedouin population in the province of Barqa through hunger and detention.

During World War II, the Allied countries defeated Italy, putting Libya under the control of the Allied countries from 1943 to 1951 (Lobban & Dalton, 2014). Tripoli was under British administration, and Fezzan was under French control. In December 1951, Libya declared independence as the United Kingdom of Libya under King Idris, who established the first constitution in Libya. The Libyan constitution defined equal rights and the principle of equal opportunities for all Libyans.

In 1969, Colonel Muammar Gaddafi staged a coup with a group of soldiers against the king. They repealed the Libyan constitution and suspended all laws. Gaddafi began his dictatorial

rule with revolution and chaos (Lobban & Dalton, 2014). Gaddafi's reign was accompanied by economic prosperity with internal political repression. Political dissent became illegal in 1973 (Lobban & Dalton, 2014). Broad surveillance was carried out on the Libyan people by the Gaddafi Revolutionary Committees. In 1975, a group of officers tried to overthrow Gaddafi but failed (Lobban & Dalton, 2014). In 1977, Libyan GDP per capita income had reached 11,000 U. S. dollars, but much of the oil income was spent on purchasing weapons and sponsoring dozens of paramilitary groups around the world, not to improve citizens' quality of life (Plecher, 2019).

Gaddafi's rule in Libya lasted for nearly 42 years. He managed to eliminate his opponents at home and abroad until the 2011 Arab Spring struck Tunisia, Egypt, and Libya (Lobban & Dalton, 2014). The Gaddafi regime resisted the Libyan revolution, which was widespread. However, in February 2011, a political authority emerged under the name of the Provisional Transitional Council as an alternative government in Libya (Lobban & Dalton, 2014). By October 2011, the Provisional Transitional Council had gained global recognition. Meanwhile, armed Islamist militias continued to compete for power in Libya because the government had weakened and was incapable of exercising authority (Lobban & Dalton, 2014).

The first Libyan parliament has been elected since the fall of Gaddafi, and power has been transferred peacefully from the Transitional Council to the elected parliament (Lobban & Dalton, 2014). However, the militias continue to dominate the political scene and carry out sabotage and reprisals, especially against the symbols of the Gaddafi regime with the liquidation of army officers who worked with Gaddafi (Lobban & Dalton, 2014).

In 2014, General Khalifa Haftar declared war on Islamic militias after recruiting the remnants of the Libyan army that fought with Gaddafi. Libya was divided into two warring regions in the east and west, each with a separate government. Armed Libyan groups entered into

a civil war after the parliamentary elections in March 2014 because the Islamist Groups lost the elections to the liberals, thereby raising the wrath of the Islamists and the spurring the nonhandover of power to the House of Representatives (Fanack, 2019; Human Rights Watch, 2019;

United States Institute of Peace, 2018). The civil war in Libya opened the door in 2015 for Islamic extremist groups, and they seized the city of Sirte and Derna, benefiting from the political vacuum and armed conflict between the Libyan army and the militias (Fanack, 2019).

However, in mid-2015, Libyan political leaders (represented by the House of Representatives) and the dissolved general national conference (represented by the Islamists groups) reached an agreement in the Moroccan city of Skhirat to end the state of political division and form a national reconciliation government that would run the affairs of Libya and organize presidential elections (Fanack, 2019; Human Rights Watch, 2019; United States Institute of Peace, 2018). After the national reconciliation government entered the capital, Tripoli was blackmailed by armed militias and was unable to fulfill its pledges to end and disband the militias, forcing the Libyan army to attack the militias inside the capital after eliminating them in Benghazi and Darna (Fanack, 2019). The armed conflict in Libya persists as the Libyan army led by General Haftar continues to fight the militias entrenched in the capital (Fanack, 2019; Human Rights Watch, 2019; United States Institute of Peace, 2018).

Trends in life expectancy. The demographic situation in Libya witnessed a significant change in the 1950s. Life expectancy increased steadily, the infant mortality rate decreased, and the number of births doubled over three decades until 1985 (Fanack, 2019). However, the population growth rate then decreased from seven children per woman in 1985 to three children per woman between 2005 and 2010. Because of a decrease in fertility among Libyan women, the

percentage of Libyans under the age of 15 decreased from 47% in 1985 to 30% in 2010 (Country Economy, 2017). The average age increased from 42.84 in the 1950s to increase to 60.5 in the 1980s. The rate of life expectancy grew between 2005 and 2010 until it reached 69.9 years. In the last 10 years, the average life expectancy for Libyans has improved to 71.1 years for men and 80 years for women (Country Economy, 2017).

The newborn mortality rate in Libya decreased from 110.27 per thousand in 1968 to 50.4 per thousand in the 1980s (Country Economy, 2017). The rate of infant mortality decreased in the 1990s to 30.3 per thousand. The mortality rate of newly born children in Libya continued to decline until it reached 23.4 per thousand in 2000 and then stabilized at 10.2 per thousand in 2017 (Country Economy, 2017). The death rate of children in Libya has also witnessed a significant decrease in recent years. It was 14.1 per thousand in 1969 and then started to decline until it reached 5.1 per thousand in 1990 (Country Economy, 2017).

Between the years 2012 and 2017, the armed conflict of 2011 had a significant impact on the country's health system, including the closure of some health centers resulting from damage caused by the fighting and an acute shortage of medicines and medical supplies. Immunization and disease prevention have also been disrupted, with the burden of some hospitals increased by the urgent need for medical attention because of the armed conflict (Daw, 2017). The armed conflict has also had an impact on other medical needs, causing a lack of supplies, limited treatment for chronic diseases, and obstructed access to life-saving services such as chemotherapy, dialysis, and cesarean deliveries (Daw, 2017).

Structure of the health care system and health education. The public health sector in Libya is the leading provider of health services to Libyans. All citizens have free access to socialized medicine from the public sector in the form of preventive, curative, and rehabilitative

services. The health care system in Libya is state-run. Health services are provided through a series of primary health care units, centers, clinics, rehabilitation centers, general hospitals, and specialized hospitals in urban areas. The health care system in Libya consists of three levels (WHO, 2015b). The first level encompasses primary health care units that provide preventive and curative services in the small villages for a population of between 5,000 to 10,000; primary health care centers that provide health services to about 10,000 to 26,000 thousand people; and clinics that have doctors and specialists with radiology services and laboratories. These clinics provide services to about 50,000 to 60,000 people (WHO, 2015b). The second level, public hospitals in large cities and urban areas, provides all the previously mentioned health services in addition to surgical operations and health services for children and women. The third level is comprised of specialized hospitals such as the Heart Hospital, the Kidney Diseases Hospital, and the Eye Hospital (WHO, 2015b). These specialized hospitals are located in large Libyan cities such as Tripoli and Benghazi. In the late 1990s, the Libyan government encouraged the private health sector to expand into private clinics and hospitals. The sector continues to grow despite its limited role in providing health services in a few locations in Libya (WHO, 2015b).

The Libyan government's expenditure on the health sector out of the total GDP is about 3%. Health and education services are provided free of charge to all Libyans (El Taguri et al., 2008). The health system in Libya has 102 public hospitals and a specialized center with 1,177 polyclinics that provide primary health care across the country. The system has a ratio of 14 doctors per 10,000 people in the areas served (El Taguri et al., 2008). Necessary immunizations for measles and tuberculosis have increased to 97%, and neonatal mortality decreased in 2004 to 7 per 1,000 children as a result of the expansion of health and education services in various regions of Libya (El Taguri et al., 2008).

In 2009, the number of hospital beds was 37.0 per 1,000 people, and in the same year, the number of the health workforce increased to 19.0 per 10,000 residents from 12.5 per 10,000 in 2004. The proportion of nurses and midwives increased from 48.0 per 10,000 in 2004 to 68.0 per 10,000 in 2009 (WHO, 2015b). In the past five decades, the health system has achieved great improvements in providing health care services as many infectious diseases such as measles and whooping cough have been eliminated, leading to a decrease in the infant mortality rate from 160 per 1,000 in 1960 to 11 per 1,000 in 2010. Mortality rate for newborns decreased from 15 per 1,000 in the 1970s to 4 per 1,000 in 2010. The development of health system services has led to increased life expectancy at birth from 47 years in 1960 to 71 years in 2010 (El-Falah, 2014).

The health system in Libya has been negatively affected by armed conflict since 2011. The conflict posed many challenges, including acute shortages of medical supplies, loss of some medical personnel, and a gradual decrease in health services. Two governments are still competing to control the country, a situation which has created barriers to improving health services and which has closed or destroyed some health facilities. In 2015, the kidney hospital in Zahra was destroyed. The WHO report in 2017 indicated that four out of 80 hospitals in Libya were operating at 75% of their average capacity. Moreover, more than 17% of hospitals and 20% of health care facilities were damaged or destroyed in the war (WHO, 2017a). Some health centers lack medicines because militias prevent medical supply shipments from entering some cities. In addition to the effects on infrastructure because of the armed conflict, some medical teams have moved outside Libya. The political climate continues to adversely affect the provision of health services across Libya (WHO, 2017a).

Health education. Health education is the underpinning of primary healthcare and has a central role in plans and strategies to promote and improve the health of citizens of developing

countries (Salam et al., 2013). However, many developing countries have assigned the responsibility of health education either to specific departments in the Ministry of Health or to individual persons who may have too many responsibilities and limited resources needed for continuous development and training at all levels of healthcare (Salam et al., 2013).

According to Elfituri (2010), health education has three levels: primary, secondary, and tertiary. The primary level of health education targets healthy individuals and groups and helps them learn how to maintain their health and prevent disease (Elfituri, 2010). Primary health education stimulates individuals to develop healthy behaviors that lead to a healthy life (Elfituri, 2010). The secondary level of health education aims to help people accept the symptoms of disease by controlling the problems associated with the disease early and helps them seek measures to reduce the disease's spread and shorten its duration (Elfituri, 2010). The tertiary level of health education teaches individuals personal self-care, especially those with specific injuries or diseases (Elfituri, 2010). The goal of tertiary health education is to reduce the incidence of relapse by controlling the disease through personal and familial self-care which is separate from professional medical care (Elfituri, 2010).

Elfituri, Elmahaishi, and MacDonald (1999) explained that Libyan health education programs are conducted through the National Committee for Health and Social Education. This committee organizes training, research, and health education programs and supports local health authorities and activities in health education. Social education assists individuals and organizations that provide health education to people and uses formal and informal methods to draw attention to health issues of public interest by way of leaflets, posters, and popular forms of media such as national channels (Elfituri et al., 1999). Health education programs are

broadcasted on health channels and promoted using educational materials such as brochures and leaflets (Elfituri et al., 1999).

Challenges of the healthcare system in Libya. The Libyan health system needs proper planning on the primary, secondary, and tertiary levels in both the private and public health sectors (Elfituri et al., 1999; WHO, 2015a). Elkhammas and Singh (2010) posited that developing countries share many health problems around the world. Libya, being a developing country, has a low-functioning health system where the ratio of doctors to patients in 2010 was the lowest among developing countries in Africa and Asia (Elkhammas & Singh, 2010; Hweissa, Lim, & Su, 2016; Salam et al., 2013; WHO, 2015a). The Libyan health system has been widely criticized for how it deals with the spread of diseases such as obesity (Elfituri et al., 1999; WHO, 2011). Some studies (Elfituri et al., 1999; Elfituri, Elmahaishi, MacDonald, & Sherif, 2006) have shown inadequate knowledge about different aspects of children's health and reducing health inequalities.

One major challenge for the Libyan healthcare system was the aftermath of the 2011 armed conflict. Sullivan, McQuinn, and Purushotham (2011), and Daw, El-Bouzedi, and Dau (2015b) argued that, after the armed conflict in 2011, the healthcare system, especially primary healthcare, deteriorated and the number of deaths and morbidity increased. Libya's public health system suffered from a severe shortage of essential medical supplies and medicines (Daw et al., 2015b; Sullivan et al., 2011). The lack of clinical infrastructure has damaged the Libyan health system, and the impact on professional human capital will have a long-term adverse effect on professional healthcare services (Daw et al., 2015b; Sullivan et al., 2011). A total of 216 health facilities have been damaged, including emergency hospitals, regional hospitals, and primary healthcare centers. Structural destruction was evident in 62 centers; 11 centers were destroyed,

and 51 centers were partially damaged. Of the primary healthcare centers accounted for, 49 were damaged, including emergency and accident hospitals (Daw et al., 2015b; Sullivan et al., 2011).

Additionally, after the cycle of violence in 2011, the healthcare system in Libya faced difficulties that had an impact on primary healthcare, including the absence of health education, lack of vaccinations, and limited availability of clean water and food (Daw, 2017; Daw et al., 2015a; Daw et al., 2015b). The armed conflict's effect on health care services has led to Libyans' dissatisfaction with health care services. Thus, many Libyans have sought healthcare services in neighboring countries such as Tunisia and Jordan (Elkhammas & Singh, 2010; Salam et al., 2013).

To ensure the quality of health care services, El Oakley et al. (2013) proposed assessing the competence of physicians in terms of their level of responsibility, their area of responsibility, and the approaches adopted in the implementation of their responsibility. The government should increase the efficiency of the Libyan health system by implementing strategic administrative processes rather than the management of crisis (El Oakley et al., 2013). Further, Salam et al. (2013) argued that to achieve quality healthcare, health systems need to be effective, efficient, and equitable for both the poor and the rich. The government must address the most critical aspects of the Libyan health system by finding solutions to the current failure using the bestknown health methods (Salam et al., 2013).

The healthcare system in Libya must also adhere to the World Health Organization's Health System Framework (WHO-HSF; Aburawi et al., 2016). The health system framework has six building blocks: "Health Governance, Health Care Finance, Health Service Delivery, Human Resources for Health, Pharmaceuticals and Health Technology, and Health Information System" (El Oakley et al., 2013, p.1). The WHO held a conference on Libya in 2012 to assess the health

system using the WHO-HSF. The WHO identified vital weaknesses and shortcomings upon assessing the current Libyan health system. Most health delegates who attended the conference recognized the urgent need to modernize the health system (El Oakley et al., 2013). The WHO recommended using the HSF building blocks as the basis for improving and implementing a health system policy (El Oakley et al., 2013). Health delegates suggested adopting modern management in evidence-based healthcare, equality, and quality assurance. Also, health delegates recommended assured access to secondary care to reduce the burden on hospitals and manage locally stable medical problems through primary care (Lakhdar, 2016; WHO, 2015a). There was a consensus that primary healthcare and public health should be the responsibility of the public sector and the Ministry of Health. Health delegates agreed that health information technology was essential to improving healthcare services and preventing financial and administrative corruption (Lakhdar, 2016; WHO, 2015a). Health delegates felt that healthcare providers in Libya were fully aware of and committed to applying the WHO health system framework to the health system in Libya (Lakhdar, 2016; WHO, 2015a).

Challenges with implementing plans and strategies for health education in Libya.

Health education is the driver of primary healthcare and is a vital factor in plans and strategies to enhance the health of a population (Elfituri et al., 2006; WHO, 2015a). Elfituri et al. (2006) identified top-priority health issues for health education programs in Libya: personal hygiene, the health of the environment, immunization, healthy nutrition, maternal and child health, child health throughout the school stage, drug abuse regulation, and school health. The authors stressed that youth and children are the most important target groups for health education and schools are the most appropriate place for health education (Elfituri et al., 2006; WHO, 2015a). Similarly, El Taguri et al. (2008) and WHO (2015a) maintained that the health sector in Libya must move

toward health promotion through health education rather than through clinical services. The authors identified obstacles that prevent the implementation of health education, including lack of educational materials (El Taguri et al., 2008; WHO, 2015a).

Health professionals are not playing an active role in promoting health. Elfituri and Sherif (2009) and WHO (2015a) proposed that the difficulties faced by health promoters are organizational, including the lack of communication skills and knowledge in the sense that doctors and other health professionals do not have adequate communication skills to provide patients with appropriate health information that is specific to their situation. Some doctors and health professionals possess inadequate knowledge of health information related to common diseases and health conditions such as obesity. Additionally, doctors' time constraints in providing medical advice to patients and ineffective or weak communication between patients and their doctors create challenges for proper health education (Elfituri & Sherif, 2009).

Elfituri (2010) reported that health education to promote the health of Libyans is not meeting the expectations of health promotion. When classifying the effectiveness of programs to increase the level of health knowledge, radio was ranked sixth, while books, magazines, and school education on health were ranked fourth (Elfituri, 2010). Elfituri et al. (2006) indicated that the media, by its various means, is a valuable and direct tool for health education (Elfituri et al., 2006). The authors insisted that the importance of the media is to increase health knowledge. While newspapers, magazines, and books may be prominent, television programs are the most influential channels in the pursuit of healthy behavior (Elfituri et al., 2006). Using the media is a health-for-all strategy with direct access to the entire Libyan population (Elfituri & Sherif, 2009; WHO, 2011).

Obesity prevalence in the Middle East and North Africa. Obesity rates in the MENA are rising rapidly, especially among children (Farrag, Cheskin, & Farag, 2017). The MENA countries are Libya, Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Morocco, Sudan, Tunisia, Yemen, Saudi Arabia, Qatar, Palestine, and the United Arab Emirates. WHO reported increased obesity in the MENA area as a result of dietary transition to unhealthy food consumption, which also includes epidemiological shifts such as preparation, the transition to a modern lifestyle, reliance on fast food, expansion in the use of contemporary transport methods and advanced technologies, and a sedentary lifestyle (Farrag et al., 2017). Similarly, Musaiger (2011) stated that the increase in the rate of obesity in the Eastern Mediterranean Region is due to numerous factors including access to private cars, the employment of domestic workers, and the population of Arab countries engaging in limited physical activities. A lack of programs to prevent obesity in the Middle East, an unhealthy diet, inactivity, frequent snacking, skipping breakfast, consuming sugary drinks, increased out-of-home dining, and promotion of high-fat foods are all challenges to maintaining a healthy diet and a healthy weight (Musaiger, 2011).

Consequently, the lack of information about the health dangers of obesity and how to prevent them is one of the significant factors for an increase in the rate of obesity in the Middle East. Studies have explored the adverse effects of obesity and have revealed their association with high blood pressure, blood vessel diseases, and metabolic abnormalities (Farrag et al., 2017). Obesity significantly affects health, especially in children and adolescents (Farrag et al., 2017). More broadly, however, Hwalla, Nasreddine, and El Labban (2017) stated that countries with middle and low income in the Middle Eastern Region have undergone a food transition with rising obesity rates in all age categories and sexes. The rate of obesity reached 30.5% in Libya, 25.4% in Tunisia, 31.3% in Egypt, 22.9% in Sudan, 22.5% in Syria, 27.4% in Lebanon, and

26.8% in Palestine. Weight gain or obesity in these areas is due to social, economic, and cultural factors. There are also other important causes of obesity in the Middle East, such as the improper diet and low levels of health education. Lack of health education especially is a factor among women who prefer obesity because of traditional perceptions of beauty and the habit of wearing traditional clothes known as the Abaya (Hwalla et al., 2017). Women in Arab countries are at more significant danger of being overweight or obese because of cultural norms. Hwalla et al. (2017) and Amarasinghe and D'Souza (2012) proposed adopting strategies to combat obesity in the Middle East through economic incentives, better health education, physical activities, and promotion of healthier and more sustainable societies (Amarasinghe & D'Souza, 2012; Hwalla et al., 2017).

Alzaman and Ali (2016) suggested that the spread of obesity is parallel to growing industrial development from the oil reserves, which caused massive income growth that led to fast urbanization and enhanced living conditions in the Arab Area, especially in the Gulf Region. The WHO confirms a rise in body mass index (BMI) and the spread of obesity in most Arab countries in 2014 compared to 2010. Obesity is the sixth greatest significant risk factor for disease globally (Alzaman & Ali, 2016; Ezzati, Lopez, Rodgers, Hoorn, & Murray, 2002). In Saudi Arabia, a study conducted by Fatani, Mira, and El-Zubier (1987) found that in 1982, 65% of people had an increase in weight whereas, in 1987, 41% of the population was obese (Alzaman & Ali, 2016). High calorie intake and high fat intake when combined with exercise not being a specific part of the culture had boosted the overall percentage of overweight people and obesity (Alzaman & Ali, 2016; Musaiger & D'Souza, 2007).

Furthermore, one of the most severe factors that cause an increase in obesity rates is the change in food habits (Alzaman & Ali, 2016; Amin, Al-Sultan, & Ali, 2008). Food habits in

Arab countries have changed dramatically in the last four decades. Arab people now consume more calories and high-fat Western or local fast food, a situation which contributes to obesity (Alzaman & Ali, 2016; Amin et al., 2008). Western fast food alone cannot be blamed for the rise in obesity in the Arab countries because there is also the spread of local fast food (Alzaman & Ali, 2016; Amin et al., 2008). In general, foods cooked outside of the home are severe contributory factors to obesity. In Arab countries, the rate of obesity rose to 52.7% among individuals who ate out of the house more than five times a week. Conversely, the rate of obesity was 9.4% among people who ate at home and prepared meals (Alzaman & Ali, 2016).

Obesity prevention or elimination in the Middle East and North Africa. The growing level of obesity in the MENA has forced the WHO to alert all countries in the region that obesity is a severe issue. First, this region of the world has experienced a food transition (Farrag et al., 2017). Second, the region has experienced an increase in the consumption of non-healthy foods. Third, the prevalence of overweight is growing in middle and low-income states in the MENA. A 2017 study showed the harmful effects connected with obesity in children, such as childhood hypertension, diabetes, and cardiovascular risk (Farrag et al., 2017). At a time when obesity prevention approaches in the MENA region are steadily expanding, there has been no general or apparent effect on rates of obesity, especially in children. Therefore, obesity managers in the MENA region suggest the following:

- First, make educational materials about obesity informative, exciting, and interactive and related to the population;
- Second, improve integration with the curriculum to enhance monitoring and reevaluation and perhaps more positive behavioral changes;

- Third, encourage cooperation and participation of stakeholders with obesity to simplify and implement the Obesity Management Program and ensure its success;
- Fourth, incorporate information on proper body weight and proper diet into school health education curricula to reduce the risk of adolescents developing a distorted body image. (Farrag et al., 2017)

Like Farrag et al. (2017), Musaiger (2011) indicated several factors for an increase in obesity prevention in the Eastern Mediterranean Area, such as a necessity to standardize the method used to study obesity and the use of a measurement guide. There is also a need for physical activity procedures in the area. These procedures should cover specific instructions on physical activities by gender and age, considering the cultural and social standards of the countries in the Eastern Mediterranean Region (Farrag et al., 2017; Musaiger, 2011).

In 2015, the WHO focused on capacity-building in the progress of national multi-sector action plans for physical and social activity, marketing plans, and media in the Mediterranean region. The Mediterranean region has the highest rates of physical inactivity among adults worldwide (WHO, 2015b). The WHO, in partnership with the Obesity, Nutrition, and Center for Physical Activity in Sydney, Australia, has worked on a training package and produced marketing and media to support the Mediterranean countries in implementing the best ways to encourage physical activity and a healthy diet. Participants from health sectors and non-health sectors served together to improve a social media marketing plan (WHO, 2015b). Additionally, the participants generated a tool kit to supervise the inclusion of physical activity in primary healthcare. The toolkit was generated into meta-analysis and a systematic review that noted that primary healthcare is useful in promoting physical activity and, therefore, is essential to guaranteeing that primary healthcare services equipped with adequate materials play a vital role

in obtaining the greatest number of active populations. The WHO (2015b) has also recommended to Mediterranean countries the sale of healthy foods and non-intoxicating drinks to kids and has proposed a temporary roadmap to promotion and marketing of healthy foods. The biggest concern facing health promotion in the Mediterranean countries is the ability of states to mobilize various sectors to implement health goals and the need for the mobilization of legal experts in support of territorial objectives (WHO, 2015b).

Obesity can be prevented in Arab Countries through protective dietary behaviors (Alzaman & Ali, 2016). The risk of obesity is reduced through the intake of fiber, vegetables, and fruits. A Kuwaiti study on university students found regular eating of vegetables and fruits was a preventive factor against obesity. Another factor linked with a lower risk of weight gain or obesity is having breakfast (Alzaman & Ali, 2016; Szajewska & Ruszczyński, 2010).

One factor that increases obesity is urbanization because urban residents are more likely to have sedentary lifestyles and are therefore more apt to develop obesity than people with higher levels of physical activity because of energetic lifestyles like hunting or agricultural labor (AlNozha et al., 2005; Alzaman & Ali, 2016). Social networking (e.g., Facebook, Twitter) is another factor linked with obesity because it reduces physical activity.

Cultural factors might also exacerbate the problem of female obesity in Arab countries as women who are not employed outside the home often face barriers to physical activity. Easy access to cheap labor, such as the employment of chefs and maids, has promoted a sedentary lifestyle for women in Saudi Arabia and Kuwait (Al-Othaimeen, Nozha, & Osman, 2007; Alzaman & Ali, 2016). Women's dress in Arab countries also contributes to obesity because Arabian women often wear traditional dresses that are wide and long, a style which can decrease their motivation to lose weight (Alzaman & Ali, 2016). Women's fitness is also a cultural

representation of fertility and beauty. Women who have low levels of education do not realize the health consequences and risks associated with weight gain and obesity, because obesity is desirable and seen as associated with social status (Toselli et al., 2014).

Weight loss surgery has become a cornerstone of obesity control at the international level and in the Arab world (Alzaman & Ali, 2016). In one study, children younger than 14 years of age who underwent laparoscopic surgical sleeve gastrectomy displayed significantly more weight loss and less risk of weight-associated disease than did individuals who underwent nonsurgical weight management (Alqahtani, Elahmedi, & Al Qahtani, 2014). The Roux-en-Y gastric bypass surgery also showed an improvement in triglycerides with expected weight loss. The results confirm that obese children and adolescents who undergo gastric ablation did not show a recurrence of obesity after three years but did show a few associated diseases (Abusnana, Abdi, Tagure, Elbagir, & Maleckas, 2015). Obese children and teenagers who experience sleeve gastrectomy noted no return of obesity for almost three years after the surgical operation and displayed only a few comorbidities. There was an improvement in over 90% of comorbidities after two years with minor difficulties, healthy growth, and no mortality (Alqahtani et al., 2014).

Obesity and healthy lifestyles in the Middle East and North Africa. The increase of food disorders in recent years, from 1% to 3%, has been part of a lifestyle shift and diet change that has become a fast-growing public health hazard worldwide (Toselli et al., 2014). Even though Africa is the least urbanized continent, it has become more urban in recent years and continues to grow at unprecedented rates. Despite the prevalence of poverty in the MENA, it is easier to access high-fat, high-sugar foods in poor urban areas compared to rural areas (Toselli et al., 2014). The industrial diet has replaced the traditional food system of the North African population. In rural areas, total energy absorption is higher, but consumption of fats and animal

products is lower. In rural areas, the lifestyle is healthy as a result of the consumption of fewer calories because of agricultural labor and low utilization of motorized transport networks. Cities, on the other hand, show accelerated urbanization, diet change, and reduced physical activity patterns that have caused a gradual increase in cardiac danger factors like obesity, sugar, and high cholesterol (Toselli et al., 2014).

Despite the dangerous effects of obesity in North African countries, there are no national anti-obesity strategies, and obesity prevention is not widely understood as a priority for public health. Convincing policymakers of the importance of preventing obesity is a significant first step. In the North African region, physical activity is difficult to assess because data is collected and limited with different standards in different locations (Toselli et al., 2014). The physical inactivity level is high in North Africa and is higher among females than among males. The spread of inactivity in North Africa among adults ranges from 21.5% in Algeria to 86.7% in Sudan. In Egypt, the levels of physical activity are low, 42.0% for females, and 23.3% for males. The highest rates of physical activity in North Africa were in Morocco, where it reached 67.4% in males and 54.6% in females (Toselli et al., 2014).

Similar to Toselli et al.'s (2014) assertion regarding the high levels of physical inactivity in North Africa, Fahed, El-Hage-Sleiman, Farhat, and Nemer (2012) stated that the MENA region has seen significant changes in food habits in the past decades with a high prevalence of metabolic diseases. The MENA region was known for its traditional, healthy diet, which resulted from plants, minerals, proteins, fiber, vitamins, and low amounts of harmful food products (Fahed et al., 2012). However, the MENA region has lost its traditional diet characterized by its nutritional diversity, rich in raw foods and vitamins, because of Westernization of the diet, including increased sugars, fats, and pre-made foods. Much of this change is due to changes in

lifestyle, globalization, and the fast-food invasion in the MENA (Fahed et al., 2012). The lack of health protection laws and food programs, low physical activity, and lack of education in food consumption have influenced the status of nutrition in the area. These changes in lifestyle patterns and dietary choices have contributed to a rise in the rates of diet-associated chronic diseases, micronutrient deficiencies, and obesity in all population groups in the area (Fahed et al., 2012). Diet has thus become the target of public health actions aimed at restoring the typical foodways of countries in the MENA region to improve the health conditions of the population (Fahed et al., 2012).

Al-Zalabani, Al-Hamdan, and Saeed (2015) found that there is a lack of awareness in the MENA region about healthcare and medicine as well as a lack of public knowledge of healthy foodways and the advantages of physical activity. The researchers stipulate that programs for obesity prevention have beneficial effects (Al-Zalabani et al., 2015). Waters et al. (2011) argued that programs targeting children in middle school and the primary school would be vital educational programs to raise awareness at an early age. Every patient is distinct in terms of family situation, education, and social status. Obesity can successfully be eradicated through an approach that is targeted toward a broad audience and is patient-centered (Waters et al., 2011).

Obesity prevalence in Libya. Libya is one of the world's most obese countries (Elabani & Kure, 2015; Hassan, Hashad, & Hassan, 2016; Lemamsha et al., 2018; Musaiger et al., 2012; Sheriff, 2016). Obesity has increased more steadily in Libya to the extent that obesity had reached the epidemic rate by the 21st century. Obesity has more than doubled in the last three decades as the number of overweight adults continues to increase (Lemamsha et al., 2019). WHO (2009), and Elmehdawi and Albarsha (2012) indicated that obesity has become a critical problem in Libya because of its widespread prevalence among Libyan adults between the ages of

20 and 74 years. Obesity increased dramatically from 12.6% in 1984 to 30.5% in 2009. Weight gain is more prevalent among women than it is among men in Libya (Hassan et al., 2016; Sheriff, 2016). The prevalence of obesity among females from the age of 18 and above was recorded at 29.7% in 1995, while the rate of obesity among men was 14.2%. By 2005, the percentage of the prevalence of obesity among women had increased to 34.0 %, while the rate of obesity had also grown among men to 18.5%. In 2010, the prevalence of obesity among the females in Libya continued to rise until it reached 36.10%. At the same time, the percentage of obesity among men increased to 21.2%. The percentage of obesity in Libya increased among women to 39.6% in 2016. The prevalence of obesity among men in the same year reached 25.0%.

The study conducted by Lemamsha et al. (2019) revealed that the prevalence of obesity and overweight adults in Libya increased rapidly. The results of the study indicated that 75% of Libyan adults suffer from overweight and obesity, especially among females compared to men. In 2019, the rate of overweight adults increased among women to 33.2% compared to 32.4% among men, while the prevalence of obesity among women was 47.4% compared to 33.8% among men (Lemamsha et al., 2019). The city of Benghazi, which is the second-largest city in Libya in terms of population, witnessed a rapid increase in chronic diseases associated with obesity which led to premature death and disability (Lemamsha et al., 2018). With the continued rise of obesity in Libya and the absence of preventive intervention to reduce it, there is an urgent need for further research among Libyans to improve effective preventive interventions to obesity.

Relationship between obesity and life expectancy and productivity in Libya. Obesity is a complex physical, psychological, and social condition with multifaceted causes. Obesity experts now agree that the epidemic of global obesity exists and is a significant public health

crisis (Lemamsha et al., 2018). Levi, Segal, St. Laurent, and Rayburn (2014) and Kitahara et al. (2014) confirmed that obesity can influence numerous health circumstances, including cancer, stroke, and heart disease, all of which can lead to an early death. In 2015, WHO reported the occurrence rate of some of these diseases among the population in Libya: Cardiovascular diseases amounted to 37%, cancer amounted to 13%, and diabetes amounted to 5% (El-Fallah, 2014; WHO, 2015b).

The effect of body weight in the workplace was the focus of attention for some researchers, as some studies examined the prevalence of obesity among industrial and occupational deaths. A large population study in the Netherlands reported that obesity was the cause of muscle and bone conditions, especially among workers whose jobs were dependent on physical labor (Kudel et al., 2018). A study by Gates, Succop, Brehm, Gillespie, and Sommers (2008) among a sample of manufacturing staff indicated that there is a significant relationship between obesity or overweight and poor production (Kudel et al., 2018). The authors also reported that people with a body mass index of at least 35.0 reported a health-related loss in productivity and needed additional time to complete tasks that required physical exertion. Additionally, Gates et al. (2008) found that administrative and professional occupations incurred losses in several key positions in offices because of absenteeism caused by obesity. The obesity index has been associated with absenteeism among many American workers with a high body mass index compared to workers with healthy body mass (Kudel et al., 2018; Gates et al., 2008). The authors indicated that obese individuals are less likely to work overtime compared to their normal-weight counterparts. Specifically, obese individuals with risk factors for heart disease, diabetes, and high blood pressure reported significant weakness in productivity and higher

medical expenses than less overweight individuals with the same risk factors, indicating the contribution of obesity to reduced productivity (Kudel et al., 2018; Gates et al., 2008).

Obesity is also associated with poor health status and increased use of health care resources among American workers because companies often cover health insurance costs (Kudel et al., 2018). Costs for U.S. workers, which are medical costs and lost-productivity costs at work, amount to $73.1 billion annually, and obese workers incurred nearly two-thirds of these costs. Obesity accounts for 12.6% of annual absenteeism in America, and more than 8 billion dollars' worth of the lost-productivity costs are associated with obesity (Kudel et al., 2018).

Relationship between healthy eating and physical activity and obesity prevention or elimination in Libya. WHO has reported an extremely high prevalence of obesity and overweight among adults and children in the Eastern Mediterranean Region, where highest regional rates in the world exists (WHO, 2017b). In many countries of the Eastern Mediterranean Region, two-thirds or more of adults suffer from obesity or are overweight, especially women. Half of the adult women of the Region have either obesity or overweight conditions, while more than two out of every five men in the region suffer from either overweight or obesity (WHO, 2017b). WHO has indicated that the prevalence of obesity is closely linked with regional diet changes and a significant reduction in physical activity. The high rates of overweight and obesity in the region give cause for concern, and the WHO has proposed strategic interventions focused on healthy eating and physical activity to help prevent obesity and overweight for people in the region (WHO, 2017b).

Healthy eating. The WHO has implemented feeding standards by applying the regional nutrient profile model to assess nutritional quality, introduce healthy meal standards, and implement measures to eliminate the sale of high-fat and sugar-rich meals. The WHO issued

mandatory guidelines for reviewing food purchases to provide healthy food, including reducing fats, oils, sugar, and salt. The WHO entered catering facilities in the public sector periodically to facilitate necessary changes in the menu value of meals (WHO, 2017b) in addition to directing and providing training to catering companies regarding the production of healthy food in public institutions, requiring cooks to reduce frying and sweetening food, helping them to increase food value, and teaching them to follow up on the implementation of previous measures to cover and monitor impacts (WHO, 2017b). The WHO performed an analysis of the local food supply, including the percentage of fat and sugar that is derived from local imports and the supply of fruits, vegetables, and legumes. The organization encouraged and developed local food policies by adopting urban food standards that depend on reducing and improving the quality of fats and oils and reducing sugars in local food supplies, and it supported agriculture and farmers who cooperated and eliminated agricultural aid for producers of sugars and oils saturated with fatty acids (WHO, 2017b).

Physical activity. The WHO promoted healthy physical activity through intensive media campaigns and emphasized it through appropriate legislation that supports the provision of daily physical activity to students in educational institutions (WHO, 2017b). Key to their educational program, the WHO made a comprehensive and continuous guarantee to provide quality physical education for children in schools. The WHO created a set of guidelines and standards for physical activity in the workplace and provided sporting facilities and programs that enable access to these facilities away from the workplace (WHO, 2017b). The WHO also engaged individuals to increase the provision of access to and participation in official and unofficial sports and leisure activities and sports programs for all, with a focus on ensuring equal opportunities for participation (WHO, 2017b). Moreover, WHO developed and implemented an urban planning

policy that encourages people to rely less on vehicles and supports access and movement on safe public transportation, walking, and cycling by providing equipment, facilities, public and green open spaces, and frequent use of indoor and outdoor facilities. The WHO will continue the implementation of these measures gradually and monitor their impacts until there is universal coverage in the Eastern Mediterranean region (WHO, 2017b).

Health education and obesity prevention or elimination in Libya. Lemamsha (2016) argued that the correlation between obesity and the educational level among Libyans adults is positive. One possible explanation for this relationship is an absence of public awareness about obesity among Libyans and a lack of health services that provide preventive, rehabilitative, and promotional healthcare for obesity (Lemamsha et al., 2019). Thus, both Libyans with a high and a low level of education are ignorant about obesity and its dangers, and they are also ignorant about the importance of eating healthy food and engaging in physical activity. Although Libyans with a high level of education have some knowledge about obesity issues and eating healthy, cultural and social pressure have influenced even educated Libyans, leading them to accept overweight and obesity as normal because they believe they have a responsibility to preserve Libyan cultural practices and transfer them to the next generation (Lemamsha, 2016).

Regarding obesity control, Lemamsha (2016) stated that obesity programs are concerned with general policies of the Libyan health system, policies which are supposed to promote physical activity, healthy eating, and effective health education to enhance awareness among individuals. The Libyan health system does not give priority to necessary preventive health measures for obesity, and health facilities are ineffective in controlling and preventing obesity among Libyans. Additionally, Libyan health professionals experience barriers to the dissemination of health information, such as lack of training, insufficient materials, and poor

communication skills, as well as insufficient time with patients (Elfituri et al., 2006; Elfituri & Sherif, 2009; WHO, 2015a). A lack of facilities for physical activities such as gymnasiums also contributes to obesity. Additionally, many of the old health facilities and centers that were destroyed or damaged during the armed conflict in 2011 have not been maintained or renovated (Lemamsha, 2016).

Mediterranean diet and obesity prevention or elimination in Libya. Korn (2014) believed that diets in the Mediterranean and the Middle Eastern area (Italy, Greece, Turkey, Syria, Lebanon, Egypt, Libya) contain healthy fats, fat-free proteins, whole grains, fruits, vegetables, and little sugar. Mediterranean cuisine is associated with a growing list of nutritious foods as well as rich spices, refreshing fruits, and healthy seeds. Eating Mediterranean and Middle Eastern foods decrease the risk of cancer and heart disease. The Public Health School at Harvard University found in a recent study that people who regularly eat lunches typical of the Mediterranean region had a 43% lower risk of weight gain than those who ate other lunches, and they had a 35% lower risk of developing a precursor to diabetes and stroke known as metabolic syndrome, (Gonzalez & Bes-Rastrollo, 2014; Korn, 2014).

Eguaras, Toledo, Hernández, Cervantes, and González (2015) and Gonzalez and BesRastrollo (2014) compared the relationship between obesity and heart disease to a Mediterranean diet that included olive oil and nuts against the low-fat diet to control the increase of cardiovascular disease in older people. The researchers tested the hypothesis that the Mediterranean diet would reduce the harmful effects of abdominal obesity (Eguaras et al., 2015; Gonzalez & Bes-Rastrollo, 2014). Both studies found that the Mediterranean diet was able to prevent cardiovascular disease. The researchers also found that the Mediterranean diet resisted the adverse effect of abdominal obesity and the risk of cardiovascular disease. The

Mediterranean diet was also associated with beneficial metabolic effects (Eguaras et al., 2015; Gonzalez & Bes-Rastrollo, 2014).

Despite all the health benefits of the Mediterranean diet, the Libyan diet in the last 10 years has shifted from the Mediterranean diet toward the Western standard because of the spread of Western restaurants such as KFC and Pizza Hut across Libya's cities. Many Libyan families prefer to eat at restaurants rather than to cook at home. As a result, Libyans now have a higher intake of meals containing sugar and saturated fats in the form of burgers, fries, chips, and soda, all of which are unhealthy and contribute to obesity (Elmehdawi & Albarsha, 2012; Lemamsha, 2016).

Barriers to preventing and eliminating obesity relative to healthy eating and physical activity in Libya. According to Lemamsha (2016), "Libyans are not only consuming more fast food but are also consuming a greater variety of foods and in large quantities due to a general ignorance of healthy eating behaviors" (p. 322). A lack of free time for Libyans because of family responsibilities and childcare is a significant barrier hampering Libyans from engaging in physical activities (Lemamsha, 2016). Benjamin and Donnelly (2013), Musaiger et al. (2013), and Musaiger (2011) stated that the lack of time applies to both sexes, but women in Libya have cultural and religious barriers that prevent them from performing physical activity that include restrictions on clothing. Libyan women cannot expose some parts of their bodies in public places; however, gymnasiums require short sleeves or short-sleeved shirts, which are considered a violation of cultural and religious beliefs. In the Islamic religion, women are required to wear long dresses and robes. They are permitted to participate in physical activity on the condition that they follow the rules of dress for Muslim women, maintain gender segregation, and have trainers of the same gender. However, Libya does not have women's gymnasiums (Benjamin &

Donnelly, 2013; Musaiger, 2011; Musaiger et al., 2013).

Furthermore, obesity in Libya has a link to environmental barriers. According to the studies conducted by Benjamin and Donnelly (2013), Lemamsha (2016), Musaiger et al. (2013), and (Musaiger, 2011), population density, especially in the city of Benghazi, leads to overcrowding in open spaces and public parks, leaving a small area for walking or physical activity in the open air (Benjamin & Donnelly, 2013; Musaiger, 2011; Musaiger et al., 2013). Additionally, Lemamsha (2016) asserted that the BMI of Libyan adults is strongly associated with an insecure environment and concerns about nighttime crime for both sexes (Lemamsha, 2016). An unsafe environment and high chance for daytime crime are significantly associated with high body mass for men. These barriers indicate that wandering in the city of Benghazi is a danger that reduces the populations' desire to go out, especially at night. The author also pointed out that most of the residential neighborhoods are not designed with paths for pedestrians or corridors for bicycles, an omission which discourages walking in residential neighborhoods (Lemamsha, 2016).

Elmehdawi and Albarsha (2012) indicated that a barrier to preventing or eliminating obesity is the lack of exercise. Approximately 44% of Libyan adults do not exercise regularly, 51.07% of whom are women, and 36%, men. The researcher believes that increased reliance on transport mechanics, sitting in front of the television for an expanded duration of time, and the use of computers could be potential contributors to the spread of obesity. Hormones also play a role in the accruement of fat in women.

The United Nations Food and Agriculture Organization (FAO) stated that the modern Libyan diet is high in wheat, bread, sugar, pasta, and rice and low in vegetables and fruits (Elmehdawi & Albarsha, 2012). The FAO also pointed out that food consumption in Libya rose

1.5 times from approximately 2,061 kcal daily to 3,327 kcal between 1967 and 2001. The increase in food consumption is well above the individual human energy needs of 2,144 kcal/capita/day. This study indicated that a Libyan adult eats an additional 1,183 kcal daily, and Libyan food sources are 11% proteins, 27% fat, and 62% carbohydrates (Elmehdawi & Albarsha, 2012).

Poor health education. The healthcare system does not offer adequate health education programs for the Libyan population (Daw et al., 2015a: Salam et al., 2013). Libyans are not given the necessary health information to protect themselves from disease and promote public health (Aburawi et al., 2016; Daw, 2017; Lakhdar, 2016). As indicated by Lemamsha et al. (2018), the role of Libyan healthcare professionals in providing health education continues to be neglected. This neglect by Libyan healthcare professionals is due to the lack of training, lack of health educational materials, and poor communication skills, as well as insufficient time with patients.

In addition to the low priority of health education in Libyan healthcare services, there are inadequate rooms and facilities designated to providing health education to the Libyan population (Daw, 2017; Elfituri, 2010; Elfituri, Kriem, Sliman, & Sherif, 2011; Elfituri & Sherif, 2009; Elkhammas & Singh, 2010; El Taguri et al., 2008; Hweissa et al., 2016; Salam et al., 2013; WHO, 2011). Rooms designed for health education activities in health service centers in Libya are often used by managers of the centers as administrative offices. The health system also lacks funding and adequate support for staff to promote health education. Besides, health prevention and disease prevention are not given much attention in medical schools' curricula. Libyan medical school students have very little knowledge about primary healthcare centers as they usually practice and complete their internships in teaching hospitals (Elfituri et al., 2011; Elfituri

& Sherif, 2009; Lemamsha, 2016). Poor health education is, therefore, a barrier to preventing or eliminating obesity in Libya (Lemamsha et al., 2018).

Conceptual Framework

The conceptual framework of this study was the HBM. This section will present an indepth discussion of the HBM. To align with the purpose of the study, which was to explore the perceptions of select U.S. Libyan immigrants about the barriers to preventing or eliminating obesity in Libya, the researcher used only the HBM's perceived barriers concept to frame this study. The cause of the high prevalence of obesity in Libya seems to be the presence of particular challenges that prevent people from adhering to alternative and healthy lifestyle choices. These challenges may serve as barriers to obesity prevention and elimination in Libya. This assertion informs the study's purpose, which aligns with the problem of the study. Thus, HBM is an appropriate framework to address the problem and achieve the purpose of the study.

Origins of the health belief model. The HBM is an intellectual model meant to change health behavior. The HBM was developed to predict and explain health-related behaviors, specifically regarding the uptake or use of health services (Becker & Janz, 1984). In the 1950s, public health services in the United States were directed toward treatment rather than prevention (Rosenstock, 1974a). Hochbaum, Leventhal, Kegeles, and Rosenstock developed the HBM as a consequence of the failure of the population in the United States to accept disease prevention, early detection, and testing of non-symptomatic diseases (Becker, 1974). Medical care was outside the purview of public health; therefore, many problems emerged, such as symptoms of illness, communication failure between physician and patient, and patients' non-compliance with medical systems (Rosenstock, 1974a). Hochbaum (1958) acknowledged the inability of people to accept disease prevention, early detection, and testing of non-symptomatic diseases. The failure

of the population to take preventative action led Hochbaum (1958) to research into the behavior of the patients to develop a model to explain health-protective behavior (Rosenstock, 1974a). Hochbaum (1958) and Rosenstock (1974a) developed the HBM to predict and explain healthrelated behavior, especially the uptake of health services (Champion & Skinner, 2008). Rosenstock extended the model in 1960 to study individual responses to both pathological and personal symptoms and to study adherence to medical systems (Champion & Skinner, 2008). The HBM contains some original concepts that indicate what motivates individuals to take measures to control or prevent disease, including seriousness, sensitivity, barriers to behavior, and the impact on cues to action. Efficiency has recently been added to the model as well. Hochbaum (1958) examined perceptions of vulnerability to tuberculosis and individual beliefs about their own benefits if they submitted to an early detection procedure. Hochbaum (1958) described the results of the study:

> Among individuals who exhibited beliefs both in their susceptibility to tuberculosis and about the overall benefits from early detection, 82 percent had at least one voluntary chest X-ray. Of the group exhibiting neither of these beliefs, only 21 percent had obtained voluntary X-rays during the criterion period. (p. 47)

Hochbaum (1958) claimed that if people consider themselves susceptible to a situation, the belief that the position will have potentially dangerous consequences could lead them to believe that declining an early detection procedure would reduce their overall susceptibility to the disease or the disease's potential severity. Hochbaum (1958) advanced the belief that the expected benefits of acting exceed both the barriers to work and costs that make individuals likely to take steps that they believe lessen their risks (Hochbaum, 1958). Rosenstock (1974a) argued that, in the case of a medical illness, instead of merely limiting the risk, the dimensions of the HBM have been

redesigned to incorporate acceptance of the diagnostic result, personal sensitivity to the outcome of the disease, and susceptibility to the disease in general.

Concepts of the HBM. The model's concepts come from behavioral and social sciences. The HBM has six conceptions: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action. Self-efficacy was added as the sixth concept by Rosenstock, Strecher, and Becker in 1988.

Perceived susceptibility. Rosenstock (1974b) asserted that perceived susceptibility includes an individual's perception that a health dilemma is personally essential or that the diagnosis of illness is exact. People who believe they remain susceptible to a specific health dilemma will engage in behaviors to decrease their risk of the health dilemma's emergence (Rosenstock, 1974b). People with low perceived susceptibility might dismiss that they are predisposed to contract a specific disease. Other people may recognize the chance that they could develop the disease but believe such development is improbable. For example, women must think there is a probability of developing breast cancer before they will be interested in having a mammogram (Rosenstock, 1974b).

Perceived severity. Rosenstock (1974b) noted that perceived severity measures an individual's belief in the seriousness of the harm that the illness can cause. Individuals who view specific health problems as serious are likely to adopt behaviors that will prevent health problems from occurring. Severity involves beliefs about the illness, such as whether the disease is life-threatening or causes incapacity or injury, and whether the sickness will have great effects on one's performance at the workplace or in social roles (Rosenstock, 1974b). According to Kasl (1974) and Becker (1974), perceived severity is awareness about the danger of disease. One's perception of severity is linked to his or her beliefs about whether forgoing evaluation or

treatment may lead to outcomes such as death, disability, pain, or possible social concerns, such as the influence of the disorder on social interactions, family life, or work (Kasl, 1974). Based on the HBM, health education professionals are expected to build perceived severity by explaining severe adverse outcomes and collaborating with members of the public who have experienced those outcomes (Sharma & Romas, 2012). In the nutrition education category, health education professionals may show that eating large amounts of saturated fat leads to heart diseases. Health professionals might involve a member of society who is a heart attack survivor to convince others of the severity of the outcome (Sharma & Romas, 2012).

Perceived benefits. Rosenstock (1974b) added that perceived positives (benefits) indicate a patient's belief that the treatment will help cure or prevent the disease. Predictors are linked to a person's assessment of the value of enhanced health behavior to reduce the dangers of sickness. Even if an individual considers the danger of contracting a serious health condition to be a significant threat, any possible behavioral change will be affected by his or her perception of the perceived benefits associated with decreasing this danger. Kirscht (1974) stated that perceptions, such as financial savings associated with not smoking, might impact an individual’s decision and behavior. In aiding the conception of perceived benefits, health education professionals need to determine the specific procedures to be followed and identify the benefits or advantages that may result from this course of action (Sharma & Romas, 2012). For instance, health education professionals who study mammographic screening can increase the public's ability to detect cancer or another disease promptly by demonstrating the effectiveness of the test and the improved cure rate with early detection (Sharma & Romas, 2012).

Perceived barriers. Becker (1974) remarked that perceived barriers indicate those beliefs that prevent people from assessing obstacles to change their behaviors. He argues that people's

beliefs regarding the concrete and psychological costs of the proposed work are influenced by the perceived bad aspects of the barriers to healthy work as barriers to the practice of recommended behaviors (Becker, 1974). Rosenstock (1974a) claimed that there is a kind of unconscious analysis of benefits and costs that occur when people assess the expected benefits to work with perceived barriers. People may believe a new procedure is effective in diminishing their perceived susceptibility to illness or perceived severity of illness, but the process may be costly, uncomfortable, unpleasant, irritating, or malignant (Rosenstock, 1974b). Specialists in the field of health education are expected to reduce these barriers so that people will take measures recommended to them. Reducing barriers to health education also means providing correct information, correcting misconceptions, and providing incentives (Sharma & Romas, 2012). For instance, in terms of quitting smoking, health education professionals can assure participants that they can defeat the smoking habit and change the concept that it is impossible to overcome addiction to tobacco by introducing them to former smokers as practical examples of people who have already managed to overcome the habit (Sharma & Romas, 2012).

***Cues to Action*.** Becker (1974) described cues to action as the driving force that makes people feel the necessity to take practical action. He suggested that the cues might be internal interactions, such as the perception of the condition of the body, or external interactions, such as interpersonal communication or getting a message from a doctor regarding a medical examination (Becker, 1974). Sharma and Romas (2012) stated that if perceived severity or susceptibility is low, the person will need a strong stimulus as a cue to action. However, if the perceived severity or susceptibility is high, a simpler motivation will be enough. Champion and Skinner (2008) noted that cues to action appear in the main components of the HBM to ensure the structure of the concept of cues motivate activity. For instance, Hochbaum (1958) believed

that the desire to take the possible steps to achieve perceived benefits can be boosted by cue motivation factors such as physical events or environmental activities through media and advertising.

Self-Efficacy. The self-efficacy component was added by Rosenstock, Strecher, and Becker in 1988 as a separate element while retaining the original core concepts of barriers, benefits, severity, and susceptibility (Sharma & Romas, 2012). The self-efficacy concept is derived from the social learning theory created by Bandura in 1977 (Rosenstock et al., 1988). Rosenstock et al. (1988) justified the addition of the self-efficacy component to the HBM because individuals feel threatened by changes to their behavior, a barrier which entails both the perceived severity and the perceived susceptibility of current behavioral patterns. People need to believe that change will result in benefits or perceived benefits. Individuals must also feel that they are self-efficacious in overcoming observed barriers and can successfully change their behaviors (Rosenstock et al., 1988). While the original HBM was developed to explain engagement in one-time health-related behaviors such as receiving an immunization, selfefficacy was added to the HBM in an attempt to better explain individual differences in health behaviors (Rosenstock et al., 1988).

The advancement of the HBM occurred in the context of resistance to preventive health measures such as immunizations and resistance to tests that are considered to involve complex behavior (Rosenstock et al., 1988). HBM does not discuss disease as a chronic or a long-term illness that requires a person to make a change in the long term. Therefore, for an individual to change behavior, he or she must have absolute confidence in the perceived benefits and his or her efficacy to change (Rosenstock et al., 1988). For instance, if a person wants to quit smoking (behavior) for health reasons, the goal (result) should be believing that quitting smoking will be

beneficial to him or her (expectation of the results) and believing in his or her ability to quit (efficacy expectation).

Self-efficacy involves being persuaded that one can succeed in performing the desired behavior to produce results (Rosenstock et al., 1988). The authors also pointed out that selfefficacy is the capacity to complete the behavior and to take successful action in changing that behavior (Rosenstock et al., 1988). The authors concluded that the new form of the HBM which includes self-efficacy will more fully explain health-related behavior than the previous model did without self-efficacy. Thus, the redefined model recommends more effective behavioral interventions that were not available before the addition of self-efficacy and were not sufficiently utilized by health teachers (Rosenstock et al., 1988). Ultimately, the HBM was applied to more substantial, long-term behavioral change such as smoking, diet modification, and exercise.

Figure 1 below elaborates on the HBM model and its six concepts.

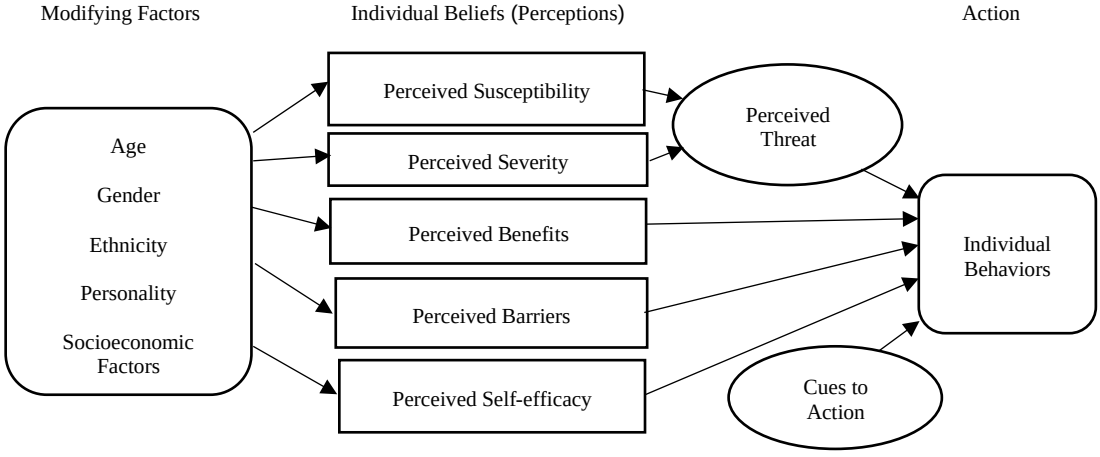


Figure 1. Concepts of the HBM. Adapted from "Health Behavior and Health Education." By K, Glanz, B, Rimer, and K, Viswanath, 2008. San Francisco, CA: John Wiley & Sons, Inc.

Relationships among HBM concepts. The concepts of HBM are elaborated in Figure 1 above. The arrows explain the connection between the concepts. The Modifying Factors block contains demographic and sociological attributes and knowledge influencing health concepts (Champion & Skinner, 2008). Modifying factors affect perceptions in addition to cues to action (Champion & Skinner, 2008). The Health Beliefs blocks contain the most common categories of health beliefs: susceptibility, severity, barriers, benefits, and self-efficacy. The amalgamation of beliefs drives behavior. Inside the Health Belief boxes, the amalgamation of perceived susceptibility and severity determines the threat. Though the HBM defines the components which lead to resulting behaviors, the relationships among these components are not defined (Champion & Skinner, 2008). The ambiguity of the relationships between the concepts leads to differences in the HBM's uses; for instance, "whereas many studies have attempted to establish each of the major dimensions as independent, others have tried multiplicative approaches. Analytical approaches to identifying these relationships are needed to further the utility of the HBM in predicting behavior" (Champion & Skinner, 2008, p. 50).

Evidence for the HBM's performance. Becker (1974) conducted studies on the HBM followed by studies with Janz (1984) to synthesize outcomes from earlier studies for an overall evaluation of the HBM's performance. The results were presented with experimental support for the HBM (Champion & Skinner, 2008). Perceived barriers were the most significant indicators of all behaviors in the studies (Champion & Skinner, 2008). Although both perceived benefits and perceived susceptibility were significant, perceived susceptibility was a more powerful predictor of preemptive health conduct than sick-role conduct, actions started for the purpose of becoming well (Champion & Skinner, 2008; Kasl & Cobb, 1966) The perceived benefits had low

power in the patient's behavior (Champion & Skinner, 2008). Perceived severity was the most insignificant predictor, yet this dimension was connected to sick-role behavior (Champion & Skinner, 2008).

Limitations and support of the HBM and concepts. Despite being described as one of the important models used to predict health behaviors, the HBM has limitations and has garnered some criticisms (Champion & Skinner, 2008). Champion and Skinner (2008) claimed that change in measurement between central components (concepts) of the HBM is one of the basic limitations of descriptive research and intervention on the model (Champion & Skinner, 2008). Additionally, the researchers suggested that the HBM does not clarify the individual's beliefs or attitudes or individual decisions that dictate the acceptance of healthy behavior. The authors also complain that the HBM does not consider that there is no normal behavior.

Another argument from Janz, Champion, and Strecher (2002) is that many essential principles contribute to the improvement of the HBM. The supposed measures should be particular to the behaviors that are addressed and related to the individuals to be used among them. For instance, the obstacles to having a mammography may be very different from the obstacles to colonoscopy. It is necessary to weigh all factors that can affect behavior to ensure that content is correct. The use of multiple components for each measurement decreases the measurement line and heightens the likelihood of including all relevant aspects of each concept (Janz et al., 2002).

A few studies (e.g., Champion, 1984, 1993; Rawl, Champion, Menon & Foster, 2000) claimed that the validity and reliability of the measures must be re-examined in each study where differences between culture and people lead to the application of criteria without this examination and should be subject to the individual's assessment of the error. Further, Harrison,

Mullen, and Green (1992) ran a meta-analysis in 16 studies concerning the relationships between dimensions of the HBM (perceived benefits, perceived severity, perceived susceptibility, and perceived barriers or cost, and behaviors and health). The researchers computed the average effect sizes for all studies and determined there was a lack of homogeneity and weak effect sizes in most of the studies. The researchers concluded that the HBM needed consistent predictive power primarily because the HBM concentrated on an inadequate number of factors. Economic factors, cultural factors, social status, and personal experience also constitute health behavior, and these factors are not considered in the HBM (Sharma & Romas, 2012).

Despite the limitations and criticisms of the HBM, several researchers have applied the model as a framework for their studies (Champion & Skinner, 2008; Khalil & Tartour, 2017; Sharma & Romas, 2012). Khalil and Tartour (2017) conducted a study to assess the use of health education by applying the HBM to compliance and knowledge with treatment. The researchers designed the study using two groups. The HBM group included educational lessons based on the conceptual framework of the HBM. The comparison group acquired traditional health education information about high blood pressure and compliance with treatment and lifestyle systems (Khalil & Tartour, 2017). The results showed a heightened increase in the HBM group in general compliance (61.3% to 79.6%) as opposed to the average health education group, which had no significant improvement. The percentage of perceived susceptibility, severity, benefits, barriers, self-efficacy, and cues to action showed changes in both pre-test and post-test outcomes with a statistical variation in the HBM group. The authors concluded that the results uphold the supposition that health education based on the HBM has a better outcome in commitment to treatment than conventional health education (Khalil & Tartour, 2017).

Siddiqui et al. (2016) used the concepts of the HBM when dengue fever became a major health threat in the Pakistani city of Karachi. The purpose of the study was to evaluate public

awareness and health beliefs regarding dengue fever and its severity, perceived susceptibility, beliefs, practices, and its effect on the control and prevention of dengue fever (Siddiqui et al., 2016). The researchers designed a questionnaire to gather interview data from both male and female participants after random selection while noting the household practices of the participants. The authors used Microsoft Excel to analyze data to organize the statistical packet for social sciences. The study included 231 male participants (52%) and 228 female participants (48%; Siddiqui et al., 2016). The authors concluded that perceived threats (perceived susceptibility and perceived severity) were meaningfully linked with information and knowledge about dengue ($p = 0.000–0.007$), but self-efficacy was only significantly associated with television and newspapers (Siddiqui et al., 2016). Additionally, the researchers concluded that older and more educated individuals had more knowledge of dengue fever (Siddiqui et al., 2016). Although this study did not contain questions about the perceived barriers and benefits of dengue prevention, the study supports the use of concepts of HBM as a framework for research studies (Siddiqui et al., 2016).

A study by Yue, Chen, and Wang (2014) also used the concepts of the HBM as a framework for research regarding road traffic injuries and drowning among children, especially in developing countries or poor areas in rich countries. The purpose of the study was to recognize threat perceptions and conduct behavioral assessments regarding injury prevention; in this study, threat perception includes the susceptibility and severity of the consequences of injury (Yue et al., 2014). Additionally, the researchers wanted to conduct behavioral assessments, or the health beliefs related to barriers to change associated with dangerous behaviors leading to injuries and the related benefits of behavior change. The researchers also wanted to identify cues to action, incentives to change behaviors associated with serious injuries (Yue et al., 2014). The authors

used a questionnaire consisting of five parts according to the assumptions of the HBM. Susceptibility, severity, benefits, barriers, labor, and cues to action comprised 22 items; each item was evaluated on a five-point Likert scale: “between 1 and 5 (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.” (Yue et al., 2014, p. 3). The results demonstrated that the average reliability of the questionnaire was 0.089. A general structure was given to the HBM, and the data fit the HBM in the examination of the confirmation factor well. The outcomes of the confirmative factor analysis showed that perceived benefits and perceived severity had the greatest influence on health belief, and perceived susceptibility was the second most essential component of the HBM, while the third most vital component of the HBM was cues to action (Yue et al., 2014). In this study, barriers to taking action had no critical influence on the HBM. The authors state that community school health education might progress the health belief associated with injuries among high school students, but that supposition needs to be confirmed in further research (Yue et al., 2014).

Another study in Canada adopted the HBM as a framework for understanding how sick people's perceptions of threat, fear, self-efficacy, and stimuli play a role in the probability of patients’ participating in safety practices (Bishop, Baker, Boyle, & MacKinnon, 2014). The purpose of this study was to discover whether patient's views of patient safety play a part in sharing and examining the safety practices of the patient and whether the concepts of the HBM assist in explaining these perceptions (Bishop et al., 2014). The authors conducted the study in two third-level hospital sites situated in Atlantic, Canada (Bishop et al., 2014). The researchers used a questionnaire which was completed over the Internet within three months of a patient’s last entry into the hospital (Bishop et al., 2014). The authors found that there is a relationship between patient perceptions about threat, self-efficacy, the performance of challenging and actual

patient safety practices. Patient opinions of safety demonstrated the potential impact of patient participation in designated safety practices. The researchers asserted that the outcomes of the study offer evidence for the efficacy of the elements of the HBM and for relationships established by the HBM. The perceptions of barriers, benefits, and threats have been found to contribute to patient participation in safety practices, and self-efficacy plays an essential role as a mediator (Bishop et al., 2014). The researchers concluded that the use of the HBM for studies of patient safety provides a better understanding of how patients' perceptions affect their participation in enhancing healthcare safety (Bishop et al., 2014).

Another study by Hasnain, Menon, Ferrans, and Szalacha (2014) used the concepts of the HBM as a framework to examine the leading causes of disability and death from breast cancer, which is the most common and prevalent cancer among women, irrespective of ethnicity or race, in the United States (Hasnain et al., 2014). The authors aimed to uncover opinions among firstgeneration immigrant Muslim women living in Chicago and those born in the United States regarding screening practices and breast cancer and associated factors using breast radiography (Hasnain et al., 2014). Hasnain et al. (2014) stated that "In the United States, immigrant Muslim women represent a fast-growing and understudied population whose healthcare behaviors and utilization of health services, including cancer screening, are influenced by religious and cultural beliefs" (p. 608). There are approximately 400,000 Muslims living in Chicago (Hasnain et al., 2014). The data were collected using Arabic, Urdu, and Hindi languages. The breast health questionnaire was designed to determine beliefs about breast screening, perceived barriers, perceived benefits, perceived threats, and perceived self-efficacy. The study used an analysis of variance (ANOVA) and hierarchical overlapping logistic regression. The researchers concluded that, although 70% of women indicated they had had mammograms at least once, only 52% had

them in the last two years. The predictors of mammography are the number of years living in the United States, the perceived efficiency and perceived importance of breast imaging, and the purpose of screening (Hasnain et al., 2014). The authors highlighted existing screening practices and recognized the HBM-based concepts that help and hinder participation in mammography screening among Muslim women. The authors' conclusion supported the use of the HBM and provided a new method for connecting to new immigrants, in particular, creating patient education programs that use culturally appropriate methods to approach perceived barriers and raise the self-efficacy of women (Hasnain et al., 2014).

The HBM has also been used to identify relationships between health behaviors and health beliefs and to identify interventions in mammography behavior (Champion, 1984; Champion & Menon, 1997). Researchers pointed to the use of health models in breast cancer screening and found that women's mammograms predict that women will mainly adhere to breast screening recommendations when they feel they will be cancer-stricken. According to the Mammography Society, women believe that cancer is severe, suggesting that the perceived benefits for screening are great and that the perceived barriers to screening are few when women receive cues to action and self-efficacy to obtain mammograms. Low barriers and the huge benefits of mammography have led to recommendations from healthcare providers to obtain screening (Champion, 1984; Champion & Menon, 1997; Champion, Ray, Heilman, & Springston, 2000).

Riggs (2017) employed the HBM as a framework to identify the perceptions of American college students regarding overweight and obesity. The study assessed the severity of obesity, perceived body weight, perceived barriers to weight loss or obesity prevention, perceived benefits, and cues to action to support physical health and good eating habits. The data and the

results showed a statistical significance of ≤ 0.05 (Riggs, 2017), demonstrating that there are barriers to the acceptance of the eating healthy food and physical activities and, therefore, universities should provide health education interventions for their students. The study also revealed the benefits of healthy physical activity and eating practices to promote long-term health and build skills to overcome perceived barriers to the adoption of physical and dietary health behaviors (Riggs, 2017).

Application of HBM to this study. The research problem for this study is the high prevalence of obesity among the Libyan population. Obesity causes a variety of diseases in Libya, including cancer, diabetes, and heart disease. The HBM and its perceived barrier concept were used to formulate the study's research questions. RQ1 evolved from the notion that Libyans may perceive healthy eating as critical to preventing or eliminating the risk of obesity, but simultaneously, they may view the habit of healthy eating as inconvenient, annoying, expensive, and unpleasant (Elfituri, 2010; Lemamsha, 2016). These adverse aspects of health action act as barriers to preventing or eliminating obesity among Libyans (Rosenstock, 1974b). RQ2 evolved from the notion that Libyans may perceive physical activity as important to preventing or eliminating the risk of obesity, but simultaneously, they may view the habit of exercising as inconvenient, annoying, expensive, and unpleasant (Elfituri, 2010; Lemamsha, 2016). These adverse aspects of health action act as barriers to preventing or eliminating obesity among Libyans (Rosenstock, 1974b).

Alignment and justification of HBM. The HBM is one of the conceptual frameworks that has been used in health behavior research on a large scale. The HBM was created to predict and explore health-related behaviors, specifically those involving the use of health services

(Becker & Janz, 1984; Siddiqui et al., 2016). The HBM proposes that individuals' beliefs about health dilemmas, perceived barriers to action, benefits of action, and self-efficacy describe participation or non-participation in health-enhancing behavior, and cues to action must exist to cause enhanced health behavior. It is, therefore, recommended that consideration of the dimensions of the HBM should be part of health education programming (Becker & Janz, 1984). There must also be an incentive to promote enhanced health behavior (Rosenstock, 1974a). In this study, the researcher explored the perceptions of Libyans living in the United States regarding the barriers to obesity prevention or elimination in Libya.

The researcher focused only on the HBM's concept of perceived barriers to answer the research questions of this study because the cause of the high prevalence of obesity in Libya appears to be the presence of particular challenges that prevent people from adhering to alternative and healthy lifestyle choices. These challenges may serve as barriers to obesity prevention and elimination in Libya. This assertion informed the study's purpose, which aligned with the problem of the study. The HBM is an appropriate framework to address the perceptions of Libyans living in the United States regarding perceived barriers to obesity prevention or elimination in Libya.

Chapter Summary

The chapter began with a topical literature review regarding Libya's demographics, including population, historical governance, religion, and culture. These discussions were followed by trends in life expectancy, the structure of the health system and health education, challenges facing the health system, and health education in Libya. Next, the section discussed obesity prevalence in the MENA region, obesity prevention or elimination in the MENA, and lifestyle in the region. Subsequently, the section discussed obesity's prevalence in Libya, the

relationship between obesity and life expectancy and productivity in Libya, the relationship between healthy eating and physical activity and obesity prevention or elimination in Libya, and health education and obesity prevention or elimination in Libya. The section concluded with a discussion of the Mediterranean diet and obesity prevention or elimination in Libya, as well as the barriers to preventing and eliminating obesity in Libya relative to healthy eating and physical activity.

The second section of the chapter delved into the HBM as the conceptual framework of the study. The section discussed the origin, evolution, and concepts of the model: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action, and self-efficacy. To align with the purpose of the study, which was to explore the perceptions of select U.S. Libyan immigrants regarding barriers to preventing or eliminating obesity in Libya, the researcher discussed the reason for using only the perceived barriers concept to frame this study. The cause of the high prevalence of obesity in Libya seems to be the presence of barriers that prevent Libyans from practicing alternative and healthy lifestyle choices (Elkhammas & Singh, 2010; Lemamsha, 2016; WHO, 2011). This assertion informed the study's purpose and research problem, thereby warranting the need for the current study.

Chapter 3: Procedures and Methods

The purpose of this qualitative phenomenological study was to explore the perceptions of select U.S. Libyan immigrants regarding the barriers to obesity prevention or elimination in Libya. The following overarching research question evolved from the research problem and the concepts of the HBM: What do select U.S. Libyan immigrants perceive as the barriers to the prevention or elimination of obesity in Libya? The following research sub-questions were developed from the literature and align with the problem and purpose of the study:

RQ1: What do select U.S. Libyan immigrants perceive as the barriers to healthy eating to prevent or eliminate obesity in Libya?

RQ2: What do select U.S. Libyan immigrants perceive as the barriers to physical activity to prevent or eliminate obesity in Libya?

The third chapter begins with a discussion of the research design, an explanation of qualitative methodology, and a justification for choosing a qualitative methodology and IPA as the sub-type to achieve the purpose of the study. The first section is followed by a detailed discussion of the site selection, population, participants, and participant selection procedures. Subsequently, the chapter presents discussions related to ethical issues/permissions, data sources, research protocols/instrumentation, and field testing. This section is followed by a discussion of data collection procedures and researcher positionality. The chapter presents the strategies the researcher adopted to ensure trustworthiness and rigor. The chapter outlines specific techniques the researcher used to analyze the data. The final section presents a summary of the contents of the chapter.

Research Design

Research design is the framework a researcher adopts to find answers to research questions. There are three types of research design: quantitative, qualitative, and mixed methods (Creswell, 2014). In this study, the researcher used a qualitative research design with IPA as the qualitative research subtype.

Qualitative methodology. Qualitative research aims to study how individuals understand their lives, experiences, and structures in the world (Patton, 2015). Qualitative research also involves fieldwork, which includes the researchers' go-to people or places to monitor and record behavior in its natural environment. Qualitative research is characterized as inductive, as researchers construct hypotheses, concepts, and theories from details (Patton, 2015). In this study, the researcher adopted a qualitative approach to achieve the declared purpose of the study. The complexity of human behavior is one of the most challenging parts of conducting a social investigation (Scheff, 2011). The connection between the psychological and behavioral factors that influence human action is challenging to isolate, especially in a more extensive social background (Northcutt & McCoy, 2004; Scheff, 2011). Studying perceptions and attitudes in this study was inherently complex for two reasons. First, experiences, perceptions, and attitudes were isolated from independent backgrounds. Next, experiences and perceptions of social and political factors and internal and functional relations were difficult to isolate within the study (Liebig, Sauer, & Friedhoff, 2015). These are factors could lead to statistical errors in answering the research question if the methodology were quantitative (Bar-Yam, 2016). The qualitative approach helped mitigate the complexity of data exploration and description in real-life situations (Liebig et al., 2015). For this reason, the researcher chose a qualitative research approach to answer the research questions and achieve the purpose of the study.

Despite the advantages mentioned above for the qualitative research approach, the approach is not devoid of weaknesses. First, since most of the qualitative research interviews were open, the participants were more proficient regarding the content of the evidence the researcher collected. Therefore, the researcher ascertained the findings against the scenarios presented by the participants. Second, qualitative research takes a long time. Third, the researcher's explanations were limited, and the researcher's knowledge and experience are influenced by conclusions and observations regarding the research problem within this study (Creswell, 2014; Patton, 2015).

The researcher chose to use a phenomenological procedure which allows the participants of the study to align their perceptual experiences and attitudes with the setting of their environment and their entire perspective of the world (Northcutt & McCoy, 2004; Worthen, 2002). Smith et al. (2009) described phenomenology as a philosophical method for the study of experimentation through the lens of consciousness. Creswell (2014) stated phenomenology is the research approach "in which the researcher describes the lived experience of individuals about the phenomenon as described by participants" (p. 14). Heidegger (1962) assumed that people live in a universe of objects of culture, relationships, and language. Consequently, the presence of humans is always linked to places, times, and things, and their experiences are visible. Thus, phenomena are expressive (Lopez & Willis, 2014). Smith (1996) stated that qualitative research has the possibility to complement, increase, and enrich the existing quantity of research in health psychology

Qualitative methods. The IPA was the specific subtype of qualitative research used in this study. The IPA is based on Heidegger's model (1962), which was expanded by Smith (1996,

2004). The IPA seeks to explore the lived experiences of participants (Creswell, 2014). The researcher, out of these experiences, infers both the nature of the experiences and the implications of the participants' behaviors (Hefferon & Gil-Rodriguez, 2011; Lopez & Willis, 2014). The researcher then draws upon commonalities in the participants' experiences to derive meaning from the phenomena (Lopez & Willis, 2014). The IPA explains meaning derived from normal lifestyles and habits because participants are often unaware of the meanings behind their behaviors (Oxley, 2016). Hence, participants can consciously understand and find meaning in their actions in the setting of their worldview through interpretative phenomenological concentration (Lopez & Willis, 2014; Oxley, 2016).

The IPA was appropriate and essential for this study because of its commitment to examining the detailed experience of each participant separately before moving on to more general claims. The IPA is useful and has a unique value to researchers studying complex, mysterious, and emotionally charged phenomena. The IPA is also useful because of the painstaking attention given to enabling participants to re-list the entire account of their experiences (Smith, Jarman, & Osborn, 1999).

Despite its numerous strengths, the IPA has weaknesses. In this study, weaknesses included linguistic barriers that prevented participants from expressing their feelings or ideas (Patton, 2015). Also, the geographical distance made it challenging to reach the participants for interviews. Additionally, the findings of IPA are not generalizable. Besides, the researcher encountered difficulty in collecting and analyzing a large set of data (Patton, 2015). To address these weaknesses, the researcher took the following steps:

- He tested the questionnaire and research questions for face and construct validity; this step confirmed the accuracy of the data sources and the reliability of the data.

- He ensured that he had the correct and sufficient contact information for the participants before the interview date to ensure easy access to them;
- He ensured that the research questions were formulated easily and understandably to avoid confusion and make the participant comfortable in answering them;
- He traveled in order to be physically on-site to collect data; and
- He also used credible techniques to analyze the data. (Creswell, 2014)

The researcher does not intend to generalize the study's findings.

Site Selection

The location of the study was the Al-Ihsaan Mosque in the city of Orlando in central Florida. The researcher chose this site because it contained participants who were representative of the problem under study. The researcher recruited participants from the mosque where Libyans met every day in large numbers. The researcher settled on Orlando because the city has the largest Libyan immigrant population in the United States (Gambino, Trevelyan, & Fitzwater, 2014). The researcher accessed the site through the Libyan community organizer at the Al-Ihsaan Mosque. The researcher contacted the Libyan community organizer by phone, and the organizer provided access to the location and the participants, contacting several Libyans and obtaining their contact information, which he handed over to the researcher. The researcher contacted potential participants directly and sent them qualitative survey questions designed to help choose the right people for the interviews. The researcher scheduled meetings with potential participants depending on the availability.

Population

The study explored the perceptions of U.S Libyan immigrants regarding the barriers to preventing or eliminate obesity in Libya. Therefore, the population for the study was Libyans who lived and experienced the barriers to preventing or eliminating obesity and poor health

education for many years in Libya before migrating to the United States. The researcher targeted Libyans with rich information to provide regarding the barriers to obesity prevention or elimination, the role of health education, and the state of the healthcare system in Libya. At the time of the study, the Libyan population in central Florida numbered around 800 people, comprised of 70% men and 30% women, with about 30% of the population being students (Gambino et al., 2014). The majority of the Libyan population in central Florida were educated; 60% had a bachelor's degree, and 10% had a master's degree or doctoral degree (Gambino et al., 2014). The socioeconomic status of the Libyan population in central Florida reflected the fact that most of them were married with a family and were categorized as average or middle-class with fewer than 1% being wealthy (Gambino et al., 2014). The researcher targeted only the U.S Libyan immigrants who met the criteria of having lived in Libya before moving to the United States as the best representative of the study's population.

Participants

The target participants in this study were adult Libyans who were born and lived in Libya before migrating to the United States and are now living in central Florida, specifically the city of Orlando. The researcher recruited participants who lived in Libya and experienced obesity in Libya personally or with a member of their family. The participants included both males and females. The participants were all educated with at least a bachelor's degree. The socioeconomic status reflected most of the participants as middle-class with regular jobs. The researcher focused on specific attributes the participants in the study possessed; having knowledge of obesity associated with poor health education, having worked in the healthcare system in Libya, or holding a degree in a health-related course. Thus, the researcher expected that the participants would support this study with accurate and thick, rich data.

Participants Selection

This section addresses the process the researcher used to select the participants of the study. The researcher presented a qualitative survey questionnaire to collect preliminary information from a group of the purposively targeted population. Then the researcher described the specific type of purposive sampling used to select the population who would participate in the qualitative survey.

Selection. The design of the study included what Patton (2015) indicated as a criterion for purposive sampling: The researcher used qualitative survey materials, a selection criteria survey, to collect preliminary information from 50 people from the Libyan population in Orlando. The researcher ran the purposive sampling and selected 10 participants for interviews. As mentioned in the section on site selection, the researcher obtained the contact information for 50 Libyans from the Libyan population in Orlando and mailed the selection criteria survey to those 50 people. Each of the 50 people received a phone call from the researcher to confirm receipt of the survey. The researcher then asked them to complete the survey and return it to the researcher within one week. Participants who did not respond within 10 days received a followup phone call from the researcher. The researcher sent out the survey on May 25, 2019, after receiving approval from the IRB committee. The selection criteria survey included a cover page that described the purpose of the study as well as the consent form. The personal identity information collected from the survey was not released in the dissertation.

Sampling method. Purposeful sampling is a type of non-probability sampling. This sampling method was selected based on the objectives of the study and the attributes of a specific population (Patton, 2015). Purposeful sampling is known as subjective, selective, or judgmental sampling. This type of sampling was useful and appropriate for this study because it helped to reach a targeted sample quickly (Patton, 2015). This sampling method was convenient for this

study because it permitted the researcher to recruit participants who had specific characteristics that provide data to answer the research questions and achieve the purpose of the research (Patton, 2015). Additionally, purposive sampling provided the researcher with a chance to get the range of perspectives that existed within the population.

However, the sampling method had some weaknesses, including limiting the rate of response in participants and causing difficulty in generalizing the findings of the study (Creswell, 2014). Nonetheless, purposive sampling was appropriate for the selection of participants for this current study because it permitted the researcher to choose the participants with specific characteristics that would support the study with thick, rich data. The researcher selected participants for interviews using one of the purposive sampling types, the homogeneous type. This type of sampling made it possible for the researcher to select participants with shared characteristics that could provide the most meaningful information about the phenomenon (Patton, 2015).

The researcher reviewed the survey data from the participants and identified their relationships with the research problem of the study. Then the researcher classified all the data types in the survey responses from each participant. Next, the researcher excluded the survey responses that did not include data relevant to the study. The researcher determined and selected all the survey responses that had data related to the study and would help to answer the study questions and achieve the purpose of the study. To categorize evidence-based surveys for participants on obesity trials, participants who worked in the Libyan healthcare system before coming to the United States were selected. The researcher selected the top 10 survey responses that contained the required evidence according to the researcher's judgment. The selection of the participants using purposive sampling was supported by the literature (Patton, 2015). After

identifying the top 10 participants, the researcher contacted them to arrange the time and place for the interviews.

Sample size considerations. The proposed sample size was 10. However, Patton (2015) noted that no exact number of participants is necessary for qualitative research: "Sample size depends on what you want to know, the purpose of the inquiry, what is at stake, what will be useful, what will have credibility, and what can be done with available time and resources" (Patton, 2015, p. 244). Merriam and Associates (2002) concurred with Patton that there is no specific number of participants appropriate for a qualitative study. In contrast, Creswell (2013) recommends a number between three to 10 participants to conduct a phenomenological study. Smith (2004) and Smith et al. (2009) indicated that, in the analysis of explanatory phenomenology, sampling should have no more than 10 participants. Callary, Rathwell, and Young (2015) point out that interpretative phenomenological analysis investigators are concerned with small sample sizes that can help them examine each status with the essential rigor, time, and energy needed for the type of analysis. Obtaining a comprehensive report on each case is the main focus of the analysis of explanatory phenomena. Thus, the sample size should be small (Pietkiewicz & Smith, 2014).

Ethical Issues/Permissions

The researcher applied for permission from the institutional review board (IRB) before he began data collection. The researcher completed the CITI certificate course required for researching human subjects (Appendix A). To address the problems of ethical research, the researcher got approval to use and print the "Creating Clinical Screen Questionnaire" (Greenwood, Murtaugh, Omura, Alder, & Stanford, 2008; Appendix B). He also obtained permission to use and reprint the "Global Physical Activities Questionnaire" (Appendix C).

The researcher also obtained approval to use the questionnaires from the STEPS team of the WHO and Greenwood et al., the original developers of the questionnaires, and UWF IRB (Appendix D). The researcher then identified potential participants from the Libyan community in Orlando. The researcher sent a summary of the study to 50 people among the Libyan population to complete the voluntary qualitative research survey (Appendix E) via email. The researcher sent the consent form (Appendix F) to the participants by email to request their agreement to participate in this study. The researcher obtained informed consent from each potential participant before beginning the data collection process (Roberts, 2010).

The informed consent forms were sent to participants by email, and the participants signed them before the interviews began. Informed consent included a statement of procedures, the planned process of the study, information for the participants regarding their right to leave the study early, and any potential risks or benefits of the study. The researcher was always upfront and sincere concerning the essence and purpose of the study (Atkins & Wallace, 2012). According to Atkins and Wallace (2012), it is morally wrong to deceive participants in a study, and data should never be falsified. To that end, the researcher invited each participant to sign a written agreement before he recorded any interviews. Moreover, the researcher maintained signed consent forms, recorded interviews, and transcripts of interviews in a safe place. To enhance privacy, the researcher assigned pseudonyms to participants who provided data for the study (Atkins & Wallace, 2012). The study design did not present participants with any risk, and the survey and interviews included information Libyans only. Once the researcher obtained approval to publish the data from this study, the researcher agreed to destroy all raw data and associated documents after the study (Atkins & Wallace, 2012).

Consent form. The informed consent forms (Appendices F & H) worked as a voluntary admission to participate in the study. The consent forms included information about the following elements: the purpose of the study, the length of the study, the possible risks involved, study procedures, and confidentiality. A method of providing consent for the study included an acknowledgment from the participants through the informed consent form.

Confidentiality. The researcher maintained the privacy of the participants' information throughout the study period. The researcher saved data without revealing the identities of the participants by using pseudonyms. The researcher stored the data on a code-word-protected computer. The researcher will destroy the data once the study is completed.

Data Sources

In-depth, semi-structured interviews and qualitative survey research were the methods for obtaining data for the current study. Interviews provided the most informative data (Smith et al., 2009). The researcher pulled data from the participants' answers to the interview questions, which the researcher asked verbally (Olynk-Widmar, Byrd, Dominick, Wolf, & Acharya, 2016). Qualitative survey techniques helped the researcher to gather data from a large population to determine the target participants who provided rich information regarding the study. In the following sections, the researcher addresses in detail the definitions, advantages, and disadvantages of the data sources.

Interviews. Detailed interviews provided an understanding of respondents' perceptions of their worldview, information which is critical in all qualitative studies (Patton, 2015). This fact permitted the researcher to view experiences from the participants' perspectives. The merits of the interviews were that they provided thick, rich data. Face-to-face communication provided an opportunity to explore topics in-depth (Creswell, 2014). However, there were some

disadvantages associated with interviews. The shortcomings included the length of time it took to complete the interview sessions and the cost involved. To address the weaknesses, the researcher scheduled long intervals between the interviews to allow the researcher to rest after each interview session (Frechtling & Sharp, 1997). To cut costs, the researcher used his mobile phone to record the interviews instead of buying a recorder.

The researcher saved all the interviews by connecting the phone to his personal computer. During the interviews, the researcher was neutral to limit any reactive responses, refraining from expressing his view of the participants' stated experiences. The researcher created a nonjudgmental environment to encourage participants to share factual personal information about their perceptions of obesity prevention or elimination in Libya.

Qualitative survey research. Qualitative survey research is a selection criteria survey type used to gather preliminary information from a large population to choose potential participants who meet the criteria (Jansen, 2010). Qualitative survey research is conducted to determine the variety of positions regarding some subject of interest among a defined population (Jansen, 2010). Qualitative survey research does not compute the number of individuals with similar characteristic values of a variable. Instead, it identifies a significant difference in stated dimensions and values among the chosen population (Jansen, 2010). The researcher obtained preliminary data from qualitative survey research. Qualitative survey research has several advantages. It provided the researcher with the ability to distribute the study to larger population samples across a more significant geographic area, and it provided the researcher with more of the data associated with the characteristics of the Libyan participants. Qualitative survey research also helped reduce researcher bias, given that the researcher was not in the participants' location.

Qualitative survey research had its share of weaknesses, including the inflexibility of the design, which did not permit changing the collection data process in the case of a defect in the survey. Thus, the researcher was unable to repair any defect for the rest of the participants after some of the participants had responded to the survey. Another weakness was the possibility of participants' misunderstanding the questions (Jansen, 2010). To avoid these weaknesses, the researcher used two pre-existing survey questions (Appendix B & C), which he obtained permission to use and reprint from the original developers. The pre-existing surveys had validity and reliability that has been determined by its use in prior studies (Lemamsha, 2016). The researcher also made sure the surveys did not include ambiguous questions. A qualitative research survey was an appropriate tool for the study because the researcher was able to select participants who met the criteria for the study. It also reduced the researcher's bias so that he could not influence the answers to the survey (Creswell, 2014).

Description of Research Protocols/Instrumentation

In this section, the researcher discusses the tools he used for data collection and the concepts involved in creating these protocols. The researcher adopted two pre-existing questionnaires and used them for the qualitative research survey. The researcher developed the interview protocol. As mentioned, the researcher used qualitative survey research (Appendix E) as a selection criteria survey to identify and recruit the participants of the study. The researcher combined the "Creating Clinical Screen Questionnaire" and the "Global Physical Activities Questionnaire" to create the qualitative research survey. The "Global Physical Activities Questionnaire" was developed by the WHO in 2011 to monitor physical activities in various countries, while Greenwood et al. (2008) developed the "Creating Clinical Screen Questionnaire" to measure eating behaviors associated with overweight and obesity. Lemamsha (2016) used these two pre-existing questionnaires in his study to collect and analyze data to

explore the risk and protective factors associated with obesity amongst Libyan adults (20-65 years).

Qualitative survey research. As indicated, the researcher adapted two pre-existing questionnaires (i.e., the "Creating Clinical Screen Questionnaire" and the "Global Physical Activities Questionnaire") to develop qualitative survey research to determine the participants of this study. The researcher received written permissions to use and reprint the questionnaires (Appendices B & C). The qualitative survey research consisted of four sections with 33 questions related to eating behavior, physical activity, and perceptions of health education in Libya. The participants completed the first section, which included demographic questions and one question about age to determine the period when the participants migrated to the United States. The researcher used the third question to determine the duration of time that the participants had lived in the United States. The survey also included a gender identification question (male or female). The researcher used one question to determine the occupation of the participants and another question to determine the weight, height, and BMI of the participants. In the second part of the survey, there was a question to ascertain how many times a participant ate at restaurants weekly (1, 2, 3, 4, 5, 6, 7). Also, the second part of the survey included a question to determine the number of times the participant ate vegetables and fruits weekly (1, 2, 3, 4, 5, 6, 7).

The second part of the survey included a question to determine whether the participant ate all of the food provided to him or her at restaurants (never, rarely, occasionally, sometimes, often, usually). The third part of the survey included a question to determine whether the participant's occupation included strenuous physical activity such as lifting heavy objects (Yes or No). The third section of the survey also included a question to determine the participant's use of a bicycle to move from one place to another. The fourth section of the survey asked whether the participant

had obtained health education about obesity (Yes or No) and also included a question to determine how the participant obtained health information (friend, other, health information).

Validity and reliability. Although the questionnaires used in qualitative survey research have validity and reliability as they were developed and used by the original developers and in other studies, the researcher also presented the survey to the three faculty members who served on his dissertation committee as they have experience and expertise in the field of qualitative research. They expressed satisfaction and approval of the survey and did not submit any changes or recommendations. The survey was also reviewed by a fourth faculty member who also has extensive experience in the field of qualitative research. He also did not submit any changes or recommendations. The feedback of the four faculty members supported the validity and clarity of qualitative survey research as a selection criteria survey method to recruit participants from the Libyan population in central Florida. The researcher sent the qualitative survey research to 50 Libyans in central Florida to select 10 potential participants for the main study. Participants in the selection criteria survey answered all the questions, and none of the participants who were chosen in the main study refused to answer any of the questions of the selection criteria survey. The researcher selected 10 participants for the main study after reviewing all responses for each survey.

Interview protocol. The researcher designed the interview protocol (Appendix G) based on the HBM's perceived barrier concept (Rosenstock, 1974a). The interview protocol was created to answer the research questions of the study. The interview protocol consisted of two sections, and all questions were designed to be open-ended to prevent participants from answering yes or no. The first section of the interview protocol included eight questions meant to answer the study's RQ1. The questions addressed the eating habits of Libyans, awareness about

healthy eating as a way to prevent or eliminate obesity in Libya, and how Libyans receive education on healthy eating (Lemamsha, 2016). The second part of the interview protocol focused on the exercise habits of Libyans, awareness about physical activity as a way to prevent or eliminate obesity in Libya, and how Libyans receive education on physical activity (Lemamsha et al., 2019; Musaiger et al., 2012).

This interview protocol ensured that the researcher followed the same sequence of questions for every participant. The protocol served as a guide and provided thematic areas for exploration (Patton, 2015), given that the interview questions aligned with the research questions. Further, the researcher used open-ended questions to acquire data related to the research questions (Bernard & Ryan, 2010). The questions were directed specifically toward the perceived barriers to obesity prevention or elimination in Libya. The interview sessions ranged from 30 to 50 minutes.

Field Testing

The researcher conducted a field test for face and construct validity and reliability because the interview protocol was self-developed (Creswell, 2013). The researcher discussed the interview protocol with his dissertation committee members as well as another faculty member for their recommendations or changes before the field test. Neither the dissertation committee nor the additional faculty member submitted any proposal for change. The researcher selected two Libyan participants from the Libyan population who had completed the qualitative survey research for the field test. After the two participants completed the survey, the researcher conducted interviews with the two participants via Skype, each interview lasting 25-28 minutes. The researcher focused on the technique of interviewing by directing the conversation to identify mistakes and points of confusion and ensured that the Libyan participants understood the

questions well. The researcher checked the questions for clarity and the avoidance of provocative language. The two interviews provided the researcher with the opportunity to explore the subject matter and conduct self-training in interview techniques. The two interviews also assisted the researcher in terms of highlighting the improvisation he needed for the real study. Field testing the interview protocol gave the researcher a better sense of the efficacy of the instructions for the questions. Also, the field test allowed the researcher to explore problematic sections of the interview protocol, irrelevant questions, and the length and convenience of the questions (Roberts, 2010). The researcher incorporated the lessons learned from the field test and concluded that the interview protocol properly aligned with the research questions.

Data Collection Procedures

As indicated in the participants' selection section, the researcher selected 10 participants by using a purposive sampling method. As the targeted participants were Libyan immigrants in central Florida, the researcher contacted the Libyan community organizer in Orlando City to get several email addresses from Libyans who were willing to participate in the study. Then the researcher sent the qualitative research survey as a selection criteria survey to 50 Libyans via Qualtrics Technic. The researcher selected 10 participants from the 27 Libyans who answered the survey. Identifying these 10 participants was the first step in data collection. The researcher contacted the participants directly to make sure that all potential participants were ready to participate in the study. The participants received emails that included information that explained the purpose of the study, along with the consent forms. The researcher received a consent form agreement from all 10 participants for the interviews. The researcher traveled to Orlando on June 24, 2019, and spent 10 days interviewing participants. Interviews lasted between 30 and 50 minutes.

The duration of data collection reached three weeks. The researcher met the first two participants at Starbucks and the third participant at Panera. The fourth and fifth participants invited the researcher to conduct the interviews in their respective homes on different days. The other five participants were not in Orlando when the researcher arrived, but he contacted them and conducted the interviews via Skype and telephone. The researcher explained the purpose of the study verbally and obtained verbal and written consent for the interviews from all the participants before he started the interviews. The researcher conducted a semi-structured interview and audio recorded all the interviews using Voice Memos on his mobile phone. The researcher recorded all the interviews without bias. The researcher also used a pen and paper to write down all the vital information related to the study mentioned by the participants. The nature of semi-structured interviews permitted flexibility in interactions and the ability to develop common themes (Bernard & Ryan, 2010; Kahn, 2000). After data collection, the researcher gathered all the data in a safe, secure place while he prepared for data analysis.

Researcher Positionality

The researcher was prompted to design this study because of his involvement with the health sector in Libya and his work as an assistant lecturer at the Faculty of Nursing. Over the years, the researcher has noticed through his work in the public health department of the Libyan Ministry of Health that health education programs are inadequate and ineffective (Daw et al., 2015a; Salam et al., 2013). The spread of disease and infection in society and schools was apparent (Daw et al., 2015a; Salam et al., 2013). The researcher has never been satisfied with the health of the general population in the cities of Libya. Some of his family members and friends have fallen ill as a result of infections in their neighborhoods and because there is insufficient health information to help them maintain wellness and practice healthy lifestyles.

Another problem that prompted the design of this study was the limited information about health education in Libya in the literature. The researcher has worked on the issue of health education worldwide and is focusing on health education in Libya now. Through his studies of the HBM, the researcher found that the model has a link with health education and that this model has been developed to stimulate health education (Becker & Janz, 1984). Elements of the HBM move individuals from the perception stage of potential threats of disease to the selfefficacy of individuals to act to follow healthy behaviors (Rosenstock, 1974a). The researcher has always been sure that the lack of access to adequate health information in Libya to protect Libyans from disease allows diseases to spread. Obesity is one of the most prevalent diseases in Libya because of the lack of health education, and most Libyans are not aware of the dangers of obesity (Elabani & Kure, 2015; Lemamsha et al., 2018; Musaiger et al., 2012). In this study, the researcher did not allow his beliefs to influence the analysis and interpretation of the data nor allow his prior beliefs to affect the answers of the participants during the interviews.

Based on the analysis of IPA, the researcher explained the experiences the participants shared. The researcher used bracketing to distance his preconceived notions from the findings. Although the researcher is Libyan, he did not have any relationship with the participants before the study. The researcher met most of the participants through the Libyan community in Orlando, Florida, and discussed with them the possibility of their participation in the study.

Ensuring Trustworthiness and Rigor

The word *trustworthiness* was applied by Guba and Lincoln (1989) to reflect the connotation of rigor and quality in the findings of a study. Cohen, Kahn, and Steeves (2000) and Lub (2015) defined the idea of trustworthiness using other words such as *rigor, correctness*, and *originality*. In comparison, trustworthiness includes quantitative components of internal health, external honesty, and objectivity. Guba and Lincoln (1989) proposed specific techniques to

confirm the reliability of a study. To confirm that the findings of a study deliver a reliable outcome, the authors recommended the following methods. First, create a meaningful connection with the contributors through prolonged participation and continuous monitoring. Second, collect data using different methods, sources, investigators, or theories. Third, archive all or some raw data for analysis. Fourth, provide participants with a chance to remark on their understanding of the accuracy of the outcome.

Providing adequate detail for other scientists to determine whether the outcome applies in a different context is the responsibility of the researcher (Guba & Lincoln, 1989). Lincoln and Guba (1985) suggested using a complex and sophisticated auditing process to determine confirmability and dependability. For the current study, the researcher did not limit the audit to himself alone; the researcher asked some people who did not participate in the research to review the procedure and preliminary data. This review of the research design and findings confirmed that the researcher did not use many creative licenses in interpreting and analyzing the findings (Lincoln & Guba, 1985).

Credibility techniques. Lincoln and Guba (1985) posited that credibility is one of the most significant aspects to ensure trustworthiness. To confirm credibility, Creswell and Miller (2000) suggested two approaches to assessing credibility. In the first approach, researchers should think about the appropriate lens through which credibility can be assessed. Creswell and Miller (2000) contended that researchers need to evaluate credibility from their viewpoint and the participants' viewpoints or the perspectives of third-party participants such as reviewers or readers. The researcher determines the duration of the study and on which point the data converges to attain completeness and accuracy. As for the viewpoints of participants, the researcher must cooperate with participants to guarantee their reality is correctly represented in the conclusion report. From an independent third-party perspective, the researcher enlists the

assistance of impartial parties to evaluate accurateness and overall compatibility (Creswell & Miller, 2000). For this effort, the researcher chose the third-party lens from the first approach to assess credibility because the study is a dissertation, and it is significant to include the perspectives of third-party participants such as reviewers or readers.

In the second approach, the authors recommended that a researcher must look at the underlying hypotheses in the selected philosophical model. An investigator with a philosophical viewpoint should apply systematic forms of inquiry and rigorous methods. An investigator who pursues an interpretive or conceptive philosophy may consider qualitative research as a kind of pluralism, highly contextual, and mobile in value and, therefore, not applicable to such strict criteria. From a critical perspective, one researcher will reflect the ideas and assumptions he or she has applied to the data being analyzed (Creswell & Miller, 2000). Meanwhile, all these activities are subject to administrative review. For the second approach, the researcher applied the constructivist paradigm to the study using rich, descriptive language. The constructivist paradigm allowed participants to describe their experiences in the natural setting reflectively.

Creating early awareness with the culture of participants/organizations. Lincoln and Guba (1985) asserted that researchers could achieve this strategy early through knowledge of the values of participants or organizations acquired through initial site visits and review of the relevant issues of the study. This strategy was a reasonable choice for this dissertation in that it facilitated a good understanding among the researcher, the organization, and the participants. The researcher gained a good understanding of the participants and established a trust relationship with them. However, the researcher did not indulge too much in their culture to avoid influences on his professional judgments (Lincoln & Guba, 1985). This strategy was appropriate for this study because it permitted the researcher to earn a deep understanding of the state of health

education in Libya and the spread of obesity by establishing a relationship with potential Libyan participants in this study. Also, being a Libyan and familiar with the health situation in the country made it easier for the researcher to verify the trustworthiness and rigor of the data revealed by participants in the interviews. However, the researcher was neutral and open-minded with all participants to avoid bias.

Use of peer debriefing. The use of peer debriefing provides investigators a chance to examine their emerging narratives to expose themselves to research on study methods (Guba, 1981). The qualitative research process requires backing from professionals such as dissertation committees and faculty members who are willing to give scholarly support and guidance. The feedback of peers assists the researcher in expanding the value and quality of the investigation (Guba, 1981). In this study, the researcher enlisted the help of the dissertation committee and a professor who is an expert in qualitative methodology. The researcher also chose the peer debriefing strategy to assess credibility because this study is a dissertation, so it is subject to multiple accurate reviews. Therefore, at the time of the writing of this research report, the researcher provided a presentation and a copy of the research report to get feedback regarding peers' perceptions of the work to assist in the development of the conclusion of the research (Guba, 1981).

Extended engagement in the research site. In prolonged participation in the field of the research, the site of the research requires the researcher to immerse him or herself in the world of the participants (Bitsch, 2005). Prolonged participation in the field helps a researcher to gain awareness in the framework of the research or study. This approach reduces the chance of distortions of information that may emerge as a result of the presence of the researcher in the research site or field. The continued presence of the researcher on the site or in the field improves

respondents' self-confidence and gives participants a greater understanding of culture and context. Thus, the time spent by the researcher in the field or the site of the research increases the relationship with informants who may volunteer to report information of interest to the research (Onwuegbuzie & Leech, 2007). Therefore, the long involvement of the researcher in the research site or the field aids the researcher to recognize underlying matters that may impact the quality of data. The long involvement helps in gaining the confidence of the participants in the research (Onwuegbuzie & Leech, 2007). The researcher in this study chose the strategy of prolonged engagement in the research site, living at the research site for several weeks, a choice which made it easier for the researcher to achieve completeness in the data collection.

Transferability. Guba and Lincoln (1989) stated that transferability is the level that a researcher can transfer the outcomes into another context. One of the essential strategies to enhance transferability involves the use of a thick, rich explanation for each element of the design. Detailed descriptions permit other researchers who are interested in implementing the findings in different frameworks to assume the transfer is feasible (Guba & Lincoln, 1989). To promote transferability in this study, the researcher used thick, rich language to describe the entire study to increase the reader's confidence that the conclusions or the findings can apply to other contexts. The researcher provided a sufficiently full account of the phenomenon under investigation to allow readers to compare the instances of the phenomenon described in the research report with the cases that emerge in their own situations (Guba & Lincoln, 1989).

Additionally, the researcher provided information such as data collection methods, number of fieldworkers, number of organizations involved in the research, place of residence, length and number of data collection sessions, and period of data collection to allow readers to assess transferability. The researcher’s employment of a purposeful sampling method also allows

for the assessment of transferability. Purposeful sampling assisted the researcher in selecting the participants who were educated on the issue under inquiry and facilitated the decisions made by the researcher about participants' selection. Purposeful sampling also allowed the researcher to assign a specific category to participants to provide more in-depth outcomes.

Dependability. The concept of trustworthiness in research is related to the reliability of data stability. In other words, the information derived from the data must be reliable and capable of being repeated (Guba & Lincoln, 1989). Many of the methods researchers use to ensure credibility can be used to ensure reliability since reliability cannot exist without credibility. However, one of the primary strategies to enhance reliability includes the use of rich, thick language in every element of the design. Detailed descriptions permit other investigators to duplicate aspects of the study and gather the same types of data in order to come to the same conclusion regarding the data interpretation (Guba & Lincoln, 1989). To promote dependability, the researcher used thick, rich language to describe each part of the research process for the entire research plan. The researcher also provided the design, outline, and implementation of the research and described what was planned and completed at the strategic level to assess dependability. Further, the researcher ensured that the processes of the research included the operational details of data collection (Guba & Lincoln, 1989). The researcher coded the same data twice with a two-week interval between each coding. Then the researcher compared the two codings and found the findings were the same. This process enhanced dependability and helped the researcher to gain a detailed understanding of the data and enhanced the narrations of the participants (Chilisa & Preece, 2005).

Confirmability. Like dependability, confirmability relates to the findings that can be corroborated or confirmed by other investigators (Guba & Lincoln, 1989). The use of detailed,

dense description also helps ensure confirmability because each researcher offers an exclusive viewpoint to his or her study. Detailed explanations help those observations that are primarily reflective in nature to disclose the researchers' beliefs and assumptions. Disclosing the researchers' beliefs and assumptions and their influence on the data analysis permits corroboration. To assess confirmability, the researcher created an audit route by employing graphs to display the collection of data and analysis to provide detail (Rodham, Fox, & Doran, 2015). The researcher used rich, thick language to describe the interpretation and analysis of the data.

Further, the researcher demonstrated the limitations of the study and the effects of those limitations on the researcher's ability to analyze and interpret the data. The researcher used evidence to evaluate the correctness of the interpretations of the data. This process ensured that the outcomes reflected the ideas and experiences of the participants instead of the preferences and characteristics of the researcher. Guba and Lincoln (1989) emphasized the role of triangulation in confirmability to reduce the effects of the researcher's biases on the findings.

Triangulation of data. This strategy involves the use of different methods, such as personal interviews, observations, and focus groups, which are the most common strategies for collecting data in qualitative research. While individual interviews and focus groups suffer from some methodological deficiencies, their distinctive characteristics also point to individual strengths (Patton, 2015). Guba and Lincoln's (1989) approach to triangulation in qualitative research involves documents that support collected data and help provide a background to explain the behavior and attitudes of the people under investigation while also verifying the specific details presented by the participants in the research. To assess confirmability, the researcher in this study examined the WHO official reports in 2015 and 2017, which explained in

detail the health education and obesity situation in Libya. The WHO reports shed light on the behaviors and attitudes of Libyans toward obesity and health education in Libya. The behaviors and attitudes of Libyans reported by WHO were later verified by the researcher through data collected from the study's participants.

Data Analysis Techniques

Qualitative data analysis includes examining the related data collected to determine how the participants answer the evaluation questions at hand (Creswell, 2014; Miles & Huberman, 1994). The researcher used the following steps, as discussed by Smith et al. (2009), to analyze data from this study:

1. In the first step, the researcher read the interview transcripts and made notes of his first impressions. Then the researcher read the transcripts carefully once more, line by line.
2. In the second step, the researcher labeled all relevant phrases, words, sentences, and sections in the transcripts. Labels included activities, opinions, actions, concepts, differences, or processes that the researcher thought were relevant as recommended by Bernard and Ryan (2010). This process is called coding, sometimes also referred to as indexing. The researcher labeled relevant, repeated information because it was essential to confirm the findings in a previously published study.
3. In step three, the researcher determined the most relevant codes and created categories by bringing several codes together. The researcher went over all the codes he created in step two and reread them. The researcher created new codes to combine several codes. The researcher dropped some of the non-relevant codes and kept all the essential ones. The researcher grouped the codes and developed categories (themes). The researcher was unbiased, creative, and open-minded (Smith et al., 2009).

4. In step four, the researcher labeled the categories and connected the ones most relevant to each other. The researcher described the connections between the categories, providing the first findings of the study. The categories were the core of the entire study, at least when it came to the findings, as they presented a new worldview from the participants in the study.
5. In step five, the researcher decided that there was rank among the categories, and therefore, identified the more significant categories. The researcher drew a figure to compile the findings.
6. In step six, using a neutral voice, the researcher wrote the findings in a section that described the categories and explained how they were connected. (Bernard & Ryan, 2010; Miles & Huberman, 1994)

Chapter Summary

This study explored the perceptions of select U.S. Libyan immigrants regarding barriers to obesity prevention or elimination in Libya. Healthy behavior flows from a strong belief in the importance of health. In the view of the health belief about healthy behavior, the design of qualitative research was the most suitable way to explore and answer the research questions. The IPA was the appropriate subtype for this study because of its commitment to examining the detailed experience of each participant separately before moving on to more general claims. The use of rich, descriptive language helped achieve the complexity of understanding through confidential communication with participants and provided information that is consistent with the overall findings. One of the fundamental considerations of the researcher was the interpretation of the data. Conducting an IPA analysis permitted the researcher to understand participants and their experiences.

Chapter 4: Data Analysis and Findings

The purpose of this qualitative phenomenological study was to explore the perceptions of select U.S. Libyan immigrants regarding the barriers to obesity prevention or elimination in Libya. The focus of the study was to identify what Libyans living in the United States perceive as the barriers to obesity prevention or elimination in Libya. The IPA design was chosen for this study to answer the central research question, which evolved from the purpose of the study: What do select U.S. Libyan immigrants perceive as the barriers to the prevention or elimination of obesity in Libya? Additionally, the researcher has developed four research sub-questions from HBM concepts to help answer the central question of this study. In the data collection process, the researcher addressed two questions related to the barriers to obesity prevention or elimination for each of the two sub-research questions listed below:

RQ1: What do select U.S. Libyan immigrants perceive as the barriers to healthy eating to prevent or eliminate obesity in Libya?

RQ2: What do select U.S. Libyan immigrants perceive as the barriers to physical activity to prevent or eliminate obesity in Libya?

The researcher used semi-structured interviews to collect data, and he analyzed data based on the themes that emerged from the participants' responses. To answer the research questions, the researcher analyzed the data based on the interview questions through which the researcher sought to obtain information related to each of the research questions. As discussed in Chapter 3, the interview questions were developed to align with the research questions. The interviews were semi-structured and allowed for additional investigation lines related to the topic. The researcher adhered to the investigation lines as these lines formed the main research topics. The nature of the semi-structured interview method allowed narrow sub-themes to evolve

from the main themes. Therefore, the researcher chose to analyze the data based on the topics that emerged from the participants' responses (Bernard & Ryan, 2010).

This chapter will be organized by research questions, and it will start with a description of the 10 participants who participated in this study, including demographics of the participants (e.g., gender, age, experience, etc.). Next, the chapter will present the findings of the study from all data sources, followed by an analysis of the findings. Finally, the researcher will provide a summary of this chapter.

Description of Participants

The 10 participants recruited for the study are Libyans who lived in Libya and experienced the phenomenon of barriers to obesity prevention or elimination, which cause the spread of obesity. All participants were Libyans who were born and lived in Libya before migrating to the United States. Some of the participants were employed in the healthcare sector as doctors, nurses, or administrators. Both male and female participants were included, and most of them were educated with a minimum of a bachelor’s degree. The researcher used purposive sampling to obtain participants for the study. The selection criteria survey was originally given to 50 Libyans in Central Florida. Twenty-seven Libyans completed the study, and from those 27, the researcher selected 10 participants who met the criteria of the study.

Table 1 describes demographic information related to participants in this study. Ten Libyan adults who were born and lived in Libya before migrating to the United States and are living now in Central Florida were included in the study. Of the 10 participants, two (20%) were female, and eight (80%) were male. The participants’ ages ranged from 30-50 years old. There were more male participants than female participants because of a culture that does not allow many women to participate in a study such as this one. Additionally, five (50%) of the

participants graduated from medical school in Libya and moved to the United States. Two of them are working in the U.S. health care system, and the other three are still doing their dental training in the Orlando Dental Clinic.

Table 1

Participant Demographics

Name	Age	Gender	Marital Status	BMI	Level of Education	Occupation
Albeza	33	Male	Single	25	MD	Residency
Albrage	30	Male	Single	27	MD, DDS	Training
Ali	40	Male	Married	27	BA	Employee
Darna	50	Male	Married	30	MA	Student
Elfaydi	36	Male	Married	29	MA	Employee
Elshribyni	46	Female	Married	25	MA	Employee
Garhaba	40	Female	Married	30	MD, MA	Employee
Gryan	30	Male	Married	20.5	MD, DDS	Training
Labda	30	Male	Married	20	MD, DDS	Training
Shaga	55	Male	Married	20	BA	Employee

Note. BMI = Body Mass Index

Participant 1, Mr. Albeza was born and lived in Libya, and was 33 years old (personal communication, July 9, 2019). He was single and had a Bachelor of Medicine and Surgery from Libya. He had trained in Libyan hospitals. Mr. Albeza came to the United States in the past four years; now, he was working in one of the U.S. hospitals in the stage of residency after he completed the medical license exam to be able to work in U.S. hospitals.

Participant 2, Mr. Albrage was born and lived in Libya (personal communication, July 14, 2019). He was 30 years old, single, and graduated from the Faculty of Dentistry in Libya. Mr. Albrage has been living in the United States since 2018 and was training in the dental, medical center to obtain a license to practice dentistry. Mr. Albrage was overweight and

practiced in the dental profession in Libya, and he knew the dangers of obesity. Mr. Albrage had knowledge and understanding of obesity cases in Libya through his previous work in Libyan hospitals.

Participant 3, Mr. Ali, was born and lived in Libya (personal communication, June 29, 2019). He was 40 years old and married with four children. Mr. Ali earned a bachelor's degree from Valencia College in Orlando. Mr. Ali was working in a taxi company and was a resident of the United States, but he returned to Libya in 2012 and lived there for two years, working in the health sector. Mr. Ali had accurate information on the health situation regarding the prevalence of obesity and had friends with obesity.

Participant 4, Mr. Darna, was born and lived in Libya (personal communication, June 28, 2019). He was 50 years old and married with five children. Mr. Darna had worked as an assistant professor at a Libyan university teaching computer science. Mr. Darna was a resident for four years in the United States. He was overweight and not much interested in physical activity because of his love for Libyan food, which includes a lot of fats and sweets.

Participant 5, Mr. Elfaydi, was born and lived in Libya (personal communication, July 9, 2019). He was 36 years old, married, and has two children. Mr. Elfaydi came to the United States as an expatriate student and was obese because of his passion for eating sweets and meat. His long experience in weight loss programs and his complete abstinence from eating fat and sugars allowed him to reduce to a healthy weight. Mr. Elfaydi believed that losing weight and obesity prevention require determination, patience, and willpower.

Participant 6, Mrs. Elshribyni, was born and lived in Libya (personal communication, July 23, 2019). She was 46 years old and married with no children; she emigrated to the United States in the last five years. Elshribyni lived in a large house with her sister, mother, and brother

and his wife. Mrs. Elshribyni struggled because of her sister, brother, and sister-in-law's obesity. She saw first-hand how obese people suffered and how they tried to overcome. She considered herself to be one who does not follow healthy eating habits or exercise because of lack of time.

Participant 7, Mrs. Garhaba, was born and lived in Libya (personal communication, June 30, 2019). She was 40 years old and married for more than five years. Garhaba graduated from the Medical School in Libya and worked at Tripoli Hospital for several years before moving to a U.S. health school. Garhaba was obese a few years ago, but with a healthy diet and exercise, she overcame obesity and obtained a healthy body.

Participant 8, Mr. Gryan, was born and lived in Libya (personal communication, June 27, 2019). He was 30 years old, married, and had a child. He graduated from the Faculty of Medicine in Libya and was working in Libyan hospitals before coming to the USA. Mr. Gryan was training at the Dental Medical Center in Orlando to obtain a license to practice dentistry. Mr. Gryan had extensive information on obesity in Libya through his work in hospitals and had friends in Libya who were obese.

Participant 9, Mr. Labda, was born and lived in Libya (personal communication, June 28, 2019). He was 31 years old, married, and had a child. He earned a bachelor's degree in dentistry in Libya and had been in the United States for less than a year to obtain a United States dental practice license. Mr. Labda worked in Libyan hospitals and was exposed to obesity cases in Libya before coming to America.

Participant 10, Mr. Shaga, was born and lived in Libya (personal communication, August 5, 2019). He was 55 years old, married, and had been a resident in America for more than 20 years. In 2011, he returned to Libya and settled there until 2015. Then, he returned to the United States and visited Libya two to three times a year. Finally, he settled in the USA and had not

been back to Libya since 2019. Mr. Shaga had obese friends and knew about obesity and its risks. He believed that healthy food could prevent people from becoming obese.

Participants' eating habits and physical activities. As mentioned in Chapter 3, the researcher used a selection criteria survey to choose the participants who answered the survey and met the standard for this study. Table 2 explains the participants' answers to several questions from the selection criteria survey related to eating habits and physical activities.

Table 2

Participants Eating Habits and Physical Activities

Name	How many times do you typically eat at restaurants or fast food in one week?	How many times weekly do you eat vegetables (e.g. broccoli, spinach, greens, salad, etc.)?	When eating food at restaurant, do you eat all the food served to you at one sitting?	How much time do you spend doing activities of vigorous intensity at work on a typical day?	In a typical week, on how many days do you do activities of moderate intensity at work?	In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get and from places?	How much time do you spend doing sports, fitness or recreational activities of vigorous intensity on a typical week?
Albeza	2	5 times	Rarely	0	0	0	0
Albrage	3	2	Often	0	0	30 Min	One hour
Ali	1	6 or more	Usually	1 hour	1 day	5 days	3 days
Darna	1	6 or more	Often	0	0	5 days	One hour
Elfaydi	3	5	Usually	0	0	0	One hour
Elshribyni	1	6 or more	Always	1 hour	2 days	2 days	2 hours
Garhaba	4	3	Usually	3 hours	3 days	3 days	3 days
Gryan	1	3	Rarely	0	0	10 Min	0
Labda	1	6 or more	Rarely	0	6 days	3 days	One hour
Shaga	1	3	Usually	3 hours	3 days	3 days	One hour

Presentation and Analysis of Findings

Research Question 1. In the beginning, the researcher sought to find the answer to the RQ1 of this study: What do select U.S. Libyan immigrants perceive as the barriers to healthy eating to prevent or eliminate obesity in Libya? The RQ1 was focused on the HBM concept of perceived barriers to healthy eating to prevent or eliminate obesity in Libya. The themes that emerged for the perceived barriers to healthy eating were the quantity of food, quality of food, and cultural beliefs. The theme of quantity of food included sub-themes of lack of self-discipline (excessive eating) and poor health education. The theme of quality food included sub-themes of the high cost of eating healthy, lack of self-discipline (preference for low nutritional food), and limited accessibility to comprehensive health education. The theme of cultural beliefs included social pressure and poor health education. Figure 2 illustrates the three emergent themes described in detail below.

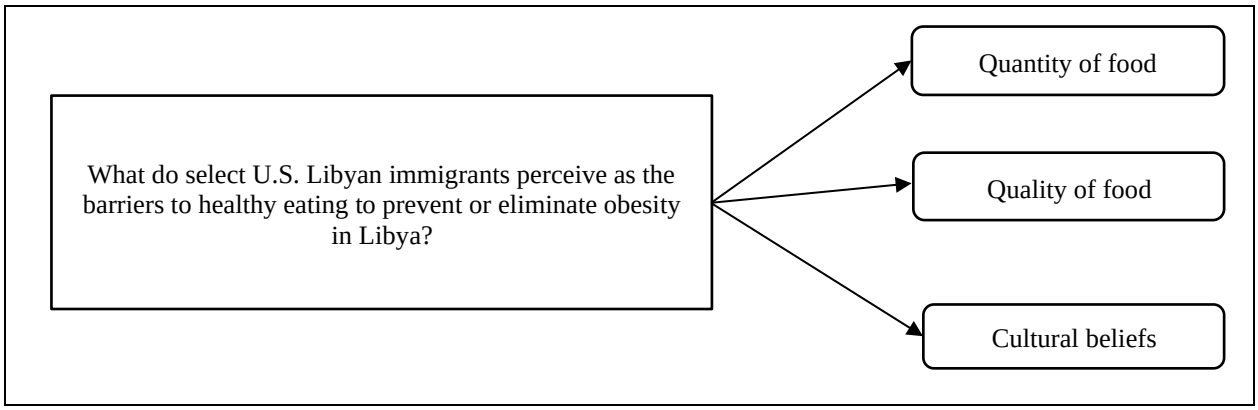


Figure 2. Themes linked to Research Question 1.

Quantity of food. The HBM concept of perceived barriers' foundational idea is people's assessment of obstacles to change their behaviors (Becker, 1974). The most common response from the participants stated that the quantity of food that Libyans eat contributed to widespread

obesity among men and women in Libya. The following statements from the participants address the eating habits that led to obesity among Libyan adults.

Lack of self-discipline. The participants noticed that excessive eating was a cause for the widespread obesity phenomenon in Libya because most Libyans have a lack of control or selfdiscipline in their food intake that works as a barrier to obesity prevention or elimination among Libyans. For example, Mr. Darna (personal communication, June 28, 2019) reported that Libyans eat excessive amounts of food and are predisposed to obesity: "Libyan's vulnerability to obesity is normal and varies according to their eating habits. There are people I know who eat excessively and Libyans who have bad habits that expose them to obesity." Similarly, Mrs. Garhaba (personal communication, June 27, 2019) confirmed that unhealthy food leads to obesity because of bad eating habits, especially on social occasions. She stated, "Libyans are definitely exposed to obesity because of excessive eating and eating foods containing starches; their eating habits are unhealthy and lead to obesity, especially on special occasions" (Mrs. Garhaba, personal communication, June 27, 2019). Other participants' views revealed similar opinions that it is difficult to have self-discipline when eating and that some people cannot stop excessive eating. Mrs. Elshribyni (personal communication, July 23, 2019) stated, Most Libyans are aware of the danger of obesity, but can they control themselves in limiting excessive eating or not? For example, we are at home with my sisters sitting at the dining table, and when we start eating, we worry about whether we are obese and wonder whether this way of eating will increase our risk of obesity. We are not obese, but with this excessive eating, we will become obese. We know that overeating leads to obesity.

Mr. Albeza (personal communication, July 9, 2019) stated that most of the Libyans know that overeating causes a health problem. However, because of the lack of alternative healthy

eating, Libyans go to overeating as no choice. He reported: “Most Libyans know that overeating is causing problems, but because there are no alternatives that prevent them from becoming obese, and they ignore their risk of obesity and do not pay attention to the dangers of obesity” (Mr. Albeza, personal communication, July 9, 2019).

Mr. Gryan reported that eating outside the home and spending much time at restaurants and coffee shops lead Libyans, especially young people, to eat more. He reported,

> The most important factors for obesity are changing lifestyle and eating outside the home, especially among young people; they prefer fast food and spend most of their time in restaurants and cafes as a habit. They are not sufficiently attentive to the risk of obesity.
>
> One exception is the educated class, but not all classes of society pay attention to the risk. (Mr. Gryan, personal communication, June 27, 2019)

Similarly, Mr. Ali reported eating more unhealthy food in fast-food restaurants was one of the factors for obesity in Libya. He stated, “Unhealthy food is a problem; people are drawn to fast food and heavy eating because Libya is opening up to international restaurants and junk food, but no one considers the consequences” (Mr. Ali, personal communication, June 29, 2019).

Poor health education. Inadequate health education went along with limited access to comprehensive health education as one of the significant problems for the health care system in Libya because the healthcare system does not offer adequate health education programs for the Libyan population (Daw et al., 2015a: Salam et al., 2013). The participants viewed poor health education as a cause for the widespread obesity phenomenon in Libya, and they revealed that limited access to comprehensive health education contributed to increased unhealthy eating habits. This situation created barriers to obesity prevention or elimination. Mr. Labda reported

that the absence of education on obesity in schools and television prevented Libyans from changing their behavior to eat healthily. He stated,

> Libyans are prone to obesity because of a lack of awareness, and they do not consider obesity a disease, or believe it causes diseases. If awareness promoted in televisions and in schools, and if the picture were clear, there would be a change in the behavior, and people would eat healthily. (Mr. Labda, personal communication, June 28, 2019)

Several participants reported that limited access to comprehensive health education on obesity exists because the Libyan government does not play a role in educating Libyans on obesity or offer adequate health education programs. This limited access to adequate health education, some participants believed, was a barrier to obesity prevention or elimination in Libya. For example, Mr. Darna noticed that the Libyan government does not play any effective role in educating Libyans about obesity. He stated, "The Libyan government does not offer effective television programs on health education about obesity. Most programs are weak and seasonal during Ramadan, and the Libyans are unprepared for healthy lifestyle and often, they do not watch the health-related programs on television" (Mr. Darna, personal communication, June 28, 2019). Likewise, Mr. Labda revealed, "The Libyan government plays a lower-than-average role in health education. Also, there are no real effective programs on health education. There are only some individual efforts from doctors to try to educate their patients, and there is a lack of group role" (Mr. Labda, personal communication, June 28, 2019). Similarly, Mr. Elfaydi reported that the Libyan government does not play a role in educating Libyans about obesity. He stated,

> The Libyan government does not have an important role in health education. Libyan government supposed to establish educational programs on obesity in radio and television

> to show people real situations of people who have obesity and explain how they became obese. (Elfaydi, personal communication, July 19, 2019)

Mrs. Elshribyni (personal communication, July 23, 2019) went further and reported that the Libyan government neglects health education on obesity, and the government does not have a plan in the future to combat it. She stated,

The Libyan government does not care about health education. The provision of health education by school principals, hospitals, and television stations is supposed to educate the population about obesity. The Libyan government does not care about providing medicines in hospitals, and it does not care to provide health education about obesity. The emergent patterns of quantity of food, including excessive eating and poor health education, that acted as barriers to obesity prevention or elimination among Libyans, as stated by the participants, are confirmed in the literature. A study by Lemamsha (2016) concluded,

"Libyans are not only consuming more fast food but are also consuming a greater variety of foods and in large quantities due to a general ignorance of healthy eating behaviors" (p. 322). Lemamsha (2016) indicated that fast-food restaurants that spread in urban areas remain open late into the night, making unhealthy foods widely available in Libya. Temptation likely leads to the consumption of unhealthy foods, and appetite ultimately leads to overweight and obesity. Cheap, unhealthy food, and easy access to it, especially foods supported by the Libyan government, have led to increased consumption by Libyans of large quantities of food, leading to an increase in the prevalence of obesity. General ignorance regarding healthy eating behaviors among Libyans played a role in raising the rate of overweight and obesity in Libya. Elmehdawi and Albarsha (2012) stated that the increase in food consumption in Libya is well above the population energy needs of 2,144 kcal/capita/day. Their study indicated that food habits in Libya

have changed in the last four decades in terms of increasing calories; thus a Libyan adult eats an additional 1,183 kcal daily, and Libyan food sources are 11% proteins, 27% fat, and 62% carbohydrates. It is hard to blame Western fast food for increasing the rate of obesity in the Arab countries because of the spread of local fast-food restaurants as well. (Alzaman, & Ali, 2016; Amin et al., 2008). The consumption of high-fat food from both Western and local fast-food restaurants contributes to obesity (Alzaman, & Ali, 2016; Amin et al., 2008).

Several studies support poor health education regarding obesity, as reported by the participants. For example, Lemamsha et al. (2018), Elabani and Kure (2015), and Musaiger et al. (2012) found that obesity is one of the most critical and prevalent diseases in Libya because of the lack of health education as most Libyans are not aware of the dangers of obesity. Also, Elfituri et al. (2006), El-Fallah (2014), and Lemamsha (2016) asserted that the Libyan government almost completely neglected health education for Libya, and Lemamsha said, The old Libyan regime and the consecutive provisional governments have completely disregarded health awareness programs and campaigns, whether at the individual, local, or national levels. This has resulted in an exacerbation of the occurrence of chronic diseases and probably some infectious diseases as well. (p. 266)

The study indicated that it is no secret that the performance of the health system is very weak in terms of providing preventive and curative services during the old and modern Libyan system. The absence of health education leads to a misunderstanding of the rules for good health among the Libyans because no effective health awareness has been established for public health in Libya; therefore, it is unreasonable to blame people if they consider obesity to be harmless or believe it is not a disease.

Quality of food. The HBM concept of perceived barriers involves individuals' assessment of obstacles to change their behaviors; even if a person perceives a health condition as threatening and believes that a particular action will effectively reduce the threat, barriers may still prevent that person's engagement in health-promoting behavior (Becker, 1974; Rosenstock, 1974a). The most common response from the participants stated that the low quality of food that Libyans eat, such as junk food and fast food, contributed to the barriers to obesity prevention or elimination among Libyans. The statements below, taken from the participants, address low quality of foods, eating habits, the high cost of eating healthy, lifestyle change, and poor health education as barriers to obesity prevention or elimination among Libyan adults. Mrs. Elshribyni (personal communication, July 23, 2019) reported that fast-food restaurants contributed to low quality of foods among Libyans. She stated, "The most important factors for the prevalence of obesity are fast food and the spread of restaurants that provide fast food that contains pastries; men and women frequent restaurants that serve fast food." Similarly, Mr. Gryan (personal communication, June 27, 2019) reported that fast-food was involved in low quality of foods in Libya: "Libyans are heading for obesity because of lifestyle changes; most young people in Libya have turned to fast food in the last ten years."

The emergent pattern of the quality of food reflected the conceptual framework of the study and corresponded with the HBM concept of perceived barriers. As mentioned by several participants, one of the barriers to healthy eating to prevent or eliminate obesity was that healthy food is not affordable for everybody in Libya, healthy eating is expensive, and the high cost of healthy food led many Libyans to the preference for low nutritional foods. Rosenstock (1974a) confirmed that a kind of unconscious analysis of benefits and costs occurs when people assess the expected benefits to work with perceived barriers. People may also believe a new procedure

is effective in diminishing their perceived susceptibility to illness or perceived severity of illness awareness, but the process may be costly, uncomfortable, unpleasant, irritating, or malignant (Rosenstock, 1974b). Specialists in the field of health education must reduce these barriers for people to take the measures recommended to them (Rosenstock, 1974b). Reducing barriers to health education also helps to provide correct information, to correct misconceptions, and to provide incentives (Sharma & Romas, 2012).

High cost of eating healthy. The theme of high cost of healthy food and the preference for low nutritional foods are viewed by participants as a cause for the widespread obesity phenomenon in Libya. Therefore, the high cost of eating healthy food and preference for low nutritional food among Libyans work as a barrier to obesity prevention or elimination among Libyans. Mr. Albeza (personal communication, July 9, 2019) reported that healthy food is not affordable for everybody in Libya: "One of the factors for the increased obesity rate in Libya is Libyan cuisine, which is characterized by a lot of pastries, carbohydrates, and fats because healthy eating is expensive." Likewise, Mr. Elfaydi (personal communication, July 19, 2019) reported that eating healthy is not common among Libyans: "Obesity is spread among Libyans because of the nature of the food they are eating, which mostly contains fats, carbohydrates, and sugars; healthy eating is not part of Libyan culture." Similarly, Mr. Albrage (personal communication, July 14, 2019) responded that Libyans consume low nutrition foods in all their meals: "It is easy for Libyans to become obese because of their eating habits since all meals in Libya contain carbohydrates, especially lunch and dinner; another problem is that people's metabolic rate does not align with their rate of eating."

Also, Mr. Shaga (personal communication, August 5, 2019) reported that Libyan diet contains low-nutrition foods such as fat and sugar: “The most important factors for obesity are unhealthy eating; Libyan food leads to obesity because it contains meat and fat, and Libyans love to eat fat.”

Poor health education. The participants revealed limited access to comprehensive health education as a reason for the low nutritional foods, a situation that creates barriers to obesity prevention or elimination in Libya. Mr. Ali (personal communication, June 29, 2019) reported a lack of health education to educate Libyans regarding obesity: “I did not witness any program dealing with such a matter of obesity or a specific program to educate people and how they are vulnerable and consequences to being obese.” Similarly, Mr. Shaga (personal communication, August 5, 2019) reported an absent role for the Libyan government in educating Libyans about obesity: “There is no role played by the Libyan government in educating Libyans about obesity. The Ministry of Health does not consider obesity education as important.” Albeza (personal communication, July 9, 2019) also commented on the absence in the role of government for educating Libyans about obesity: “There is no government role in health education regarding obesity.” Mr. Albrage (personal communication, July 14, 2019) reported a lack of health education on obesity offered by the Libyan government: “There is no clear role for the Libyan government on obesity.” Mr. Ali (personal communication, June 29, 2019) reported an inability of the Libyan government to implement a health education program on obesity. He stated, There are programs for obesity education, and there is plan, but there is no action because we know the whole situation in Libya, that government has many things to do. The plan is on paper, but the government does not have resources in the field to carry out the program. Also, the ministry of health has a plan, but it cannot implement the plan because of the situation of the country; everything is in flux. Maybe in the future, they will put these programs into action, but now there

is no action. For the last eight years, the Libyan government has not done any planning for health education or health infrastructure.

> Everything is on hold. (Mr. Ali, personal communication, June 29, 2019)

Several studies support low quality of food, low nutritional foods, and accessibility and availability low and cheap nutritional food regarding obesity prevalence, as reported by the participants. For example, Farrag et al. (2017) indicated that the low quality of food was a root cause for increasing the rate of obesity in the MENA area include Libya. The authors stated WHO reported increased obesity in the MENA area as a result of the dietary transition to unhealthy food consumption, which also includes epidemiological shifts such as preparation, the transition to a modern lifestyle, reliance on fast food. Similarly, Musaiger (2011) confirmed that spread the low quality of foods in the Eastern Mediterranean Region, contributed to increase obesity rate among people. The author stated that the increase in the rate of obesity in the Eastern Mediterranean Region is due to numerous factors including a lack of programs to prevent obesity in the Middle East, an unhealthy diet, inactivity, frequent snacking, skipping breakfast, consuming sugary drinks, increased out-of-home dining, and promotion of high-fat foods.

Additionally, Lemamsha (2016) stated that the availability and accessibility of the low and cheap nutritional foods, which the Libyan government importing of branded fast food at a low price and subsidizing of staple food commodities, contribute to an exacerbation of the obesity epidemic in Libya. However, WHO has implemented feeding standards by applying the regional nutrient profile model to assess nutritional quality, introduce healthy meal standards, and implement measures to eliminate the sale of high-fat and sugar-rich meals. WHO issued mandatory guidelines for reviewing food purchases to provide healthy food, including reducing fats, oils, sugar, and salt. The organization encouraged and developed local food policies by adopting urban food standards that depend on reducing and improving the quality of fats and oils

and reducing sugars in local food supplies. It supported agriculture and farmers who cooperated and eliminated agricultural aid for producers of sugars and oils saturated with fatty acids (WHO, 2017b). Despite the fact WHO implemented health feeding standards to access the quality foods, Libyans still prefer to consume low-quality foods include fast food, frequent snacking, and consuming sugary drinks, which work as a barrier to prevent or eliminate obesity in Libya.

Additionally, the absence of health education has led to a misunderstanding of the simple standards of healthy food among Libyans, exacerbating poor health factors, including obesity (Lemamsha, 2016). Lemamsha et al. (2018) and Elabani and Kure (2015) stated that 35.5% of adult Libyans and 16.9% of Libyan children aged five years or younger are obese.

Also, the lack of health education about the quality of foods led many Libyans to consume unhealthy food. Lemamsha (2016) stated: "A catastrophic absence of health education in Libya, coupled with the lack of primary healthcare services, which translates into little knowledge about obesity and its consequences and little guidance disseminated on how people can administer and invest their money in buying proper, healthy food and avoiding unhealthy choices." (p.185).

Cultural beliefs. Another barrier that many of the participants revealed is that cultural beliefs regarding eating habits among Libyans contributed to rising obesity in Libya and acted as barriers to obesity prevention or elimination among the Libyan people. The following statements below, taken from participants, addressed the cultural beliefs of Libyans regarding obesity that participants believe create barriers to obesity prevention or elimination among Libyan adults. Mr. Elfaydi (personal communication, July 19, 2019) reported the absence of healthy eating in the Libyan culture: "Obesity is spread among Libyans because of the nature of eating, which mostly contains fats, carbohydrates, sugars, and healthy eating is not part of Libyan culture." Similarly,

Mrs. Garhaba (personal communication, June 30, 2019) reported that obesity is prevalent among Libyans, especially women, because of excessive eating, and obesity culture has been introduced into Libyan society. She stated,

> Libyans are susceptible to obesity because of excessive eating and eating starches and eating options that are unhealthy. Obesity is particularly prevalent among women in Libya, and about three-quarters of women are obese. In the last five years, a culture of obesity has been introduced in Libya. (Mrs. Garhaba, personal communication, June 30, 2019)

Likewise, Mr. Albrage (personal communication, July 14, 2019) revealed that Libyans consider eating as a cultural issue, not a health issue. He reported,

> Obese Libyans view food habits as a lifestyle, not a health condition. In Libya, all members of the family eat the same food at the same time, the three meals a day. This is a wrong view of the lack of variety of food. For example, in America, all members of the family cannot eat the same food at the same time, the three meals a day.

Libyan's belief that obesity is not a disease and lack of health education regarding healthy eating led to the increase of the obesity rate, which reached 75% among Libyans; therefore, the beliefs of Libyans regarding obesity were an obstacle to obesity prevention or elimination (Lemamsha et al., 2019). Several participants reported that most Libyans believe obesity is not a disease and that it does not cause health problems. Mr. Gryan (personal communication, June 27, 2019) reported his view that Libyans do not believe obesity is a disease:

> Many Libyans believe that obesity is not a disease. Even Libyans who seek to reduce their weight, either because of dissatisfaction with their body size or because of the perception of the society of shape of their external bodies.

Similarly, Mr. Albeza (personal communication, July 9, 2019) revealed the beliefs of Libyans regarding obesity, saying many do not believe that obesity is a disease:

> Libyans are not aware that obesity as a disease, and they think of it in terms of cosmetic appearance. Libyans do not think obesity can cause diseases until they get other diseases; then they discover that obesity has caused these diseases.

Likewise, Mr. Albrage (personal communication, July 14, 2019) reported that Libyans believe obesity is harmless and that obesity does not cause diseases: "Libyans are unaware that obesity is a disease, and they consider it a natural situation that can be eliminated; they believe that obesity is not linked to diabetes and stress."

Other participants expressed the opinion that most Libyans are not aware of the health problems that can be caused by obesity, they do not consider obesity to be a disease, or they do not know that it can cause disease. Mr. Labda (personal communication, June 28, 2019) reported a lack of awareness of obesity as a disease: "Libyans are prone to obesity due to lack of awareness, and they do not consider obesity is a disease or it causes diseases." Similarly, Mr. Elfaydi (personal communication, July 19, 2019) revealed that most Libyan consider obesity is not a disease: "Libyans are unaware that obesity is a disease, and they consider it a natural situation that can be eliminated; they believe that obesity is not linked to diabetes and stress." Likewise, Mr. Albrage (personal communication, July 14, 2019) reported that most of the Libyan population believes that obesity is a normal condition: "The majority of Libyans do not consider obesity causes health problems, especially non-obese Libyans." Mrs. Elshribyni (personal communication, July 23, 2019) reported the same response that many Libyans believe obesity is not a disease. She stated,

> Some Libyans do not consider diseases associated with obesity to threaten life or lead to death, such as diabetes and high blood pressure. Also, they say that many people who have diabetes are not obese."

The data revealed by the participants about culture belief would add this new dimension and extend the literature related to the barriers to obesity prevention or elimination in Libya.

One participant revealed a different opinion from other participants and reported an unexpected finding that, in his view, the majority of Libyans have an awareness of obesity. However, at the same time, the old Libyan generation still thinks that obesity is a healthy condition of the body. Mr. Shaga (personal communication, August 5, 2019) reported that the old generation was misinformed: "There is awareness; Libyans are aware of obesity problems, but the old generation believes that obesity is a good thing for people, and only 20 percent of Libyans are trying to combat it by losing weight." However, this information that many Libyans have an awareness of obesity, as expressed by Mr. Shaga, while culturally insightful, is not supported by the extant literature about obesity in Libya.

Poor health education. Limited access to comprehensive health education among Libyans has contributed to the increased obesity rate in Libya because of the absent role of the healthcare system in Libya to offer comprehensive health education (Hweissa et al., 2016; Salam et al., 2013; WHO, 2011). Poor health education has contributed to a culture of carelessness regarding obesity among Libyans, and this lack of concern has become a barrier to obesity prevention or elimination in Libya. The participants revealed their experiences with poor health education regarding obesity as a pattern of ineffective health education, and most Libyans have limited access to comprehensive health education. Mr. Darna (personal communication, June 28, 2019) reported that some Libyans do not participate in health education programs because of a

culture of carelessness. He stated, “There is no reception of health education on obesity from Libyans, and most Libyans do not watch health education programs because of a culture of carelessness” (Mr. Darna, personal communication, June 28, 2019). Mr. Daran (personal communication, June 28, 2019) reported that the lack of interest in watching health education programs was related to the wrong culture since childhood. He stated,

> The level of awareness in Libya about obesity is below average, though among educated Libyans, it is high. In general, Libyans are not interested in watching awareness programs about obesity and its harmfulness; they prefer entertainment programs and fun because of their education since childhood and the wrong cultural attitudes. For example, people say that human beings die only by living till their expiration date, not by obesity or disease. They were not made aware in childhood that they should avoid disease and wrong health behavior such as eating too much” (Mr. Darna, personal communication, June 28, 2019).

Other participants revealed that health education on obesity is not a priority and has no value among Libyans. Mr. Albeza (personal communication, July 9, 2019) reported the absence of interest in health education among Libyans and the low priority of health education on obesity. He reported,

> There is no interest that Libyans attach to health education because of the difficulty of their political, economic, and social situation. Obesity is not one of the priorities and concerns of the Libyan state, and some obese Libyans are more concerned about other important life priorities like electricity or their jobs. (Mr. Albeza, personal communication, July 9, 2019)

Similarly, Mr. Albrage (personal communication, July 14, 2019) reported that many Libyans do not value health education; however, educated Libyans who are obese do see the importance of

health education for losing weight. He stated, “Libyans, in general, do not place importance on health education about obesity; only obese Libyans with a desire to lose weight from a certain category of educated Libyans place importance on health education about obesity” (Albrage, personal communication, July 14, 2019). Likewise, Mr. Albeza (personal communication, July 9, 2019) reported that Libyans do not believe in the importance of health education regarding obesity. He reported, “Health education in Libya is not believed to be important” (Mr. Albeza, personal communication, July 9, 2019).

These data are consistent with the literature. For example, Lemamsha et al. (2018), Elabani and Kure (2015), and Musaiger et al. (2012) found that obesity is one of the most essential and prevalent diseases in Libya because of the lack of health education as most Libyans are not aware of the dangers of obesity. Al-Zalabani et al. (2015) concluded that there is a lack of awareness of obesity in the MENA region because of the lack of public knowledge about healthy foodways and the advantages of physical activities. The literature has supported the responses of the participants that Libyans have limited access to comprehensive health education related to obesity. Elfituri et al. (2006), El-Fallah (2014), and Lemamsha (2016) assert that the Libyan government has almost completely neglected health education in Libya, and Lemamsha said,

> The old Libyan regime and the consecutive provisional governments have completely disregarded health awareness programs and campaigns, whether at the individual, local, or national levels. This has resulted in an exacerbation of the occurrence of chronic diseases and probably some infectious diseases as well. (p. 266)

Research Question 2. At the beginning of the study, the researcher sought to find the answer to Question 2 of this study: What do select U.S. Libyan immigrants perceive as the barriers to physical activity to prevent or eliminate obesity in Libya? Research Question 2 was

focused on the HBM's concept of perceived barriers to physical activity to prevent or eliminate obesity in Libya. The emerging themes for perceived barriers to physical activity were lack of motivation, religious beliefs, lack of facilities to promote physical activities, and personal perceptions toward body size. The theme of lack of motivation included sub-themes of lack of public transportation, lack of a culture of walking, discomfort in exercising, time constraints, and poor health education. The theme of religious beliefs included the sub-theme of poor health education. Additionally, the theme of the lack of facilities to promote physical activities included the sub-theme of poor health education. Finally, the theme of personal perceptions toward body size included the sub-theme of poor health education. Figure 3 illustrates the three emergent themes will be described in detail below.

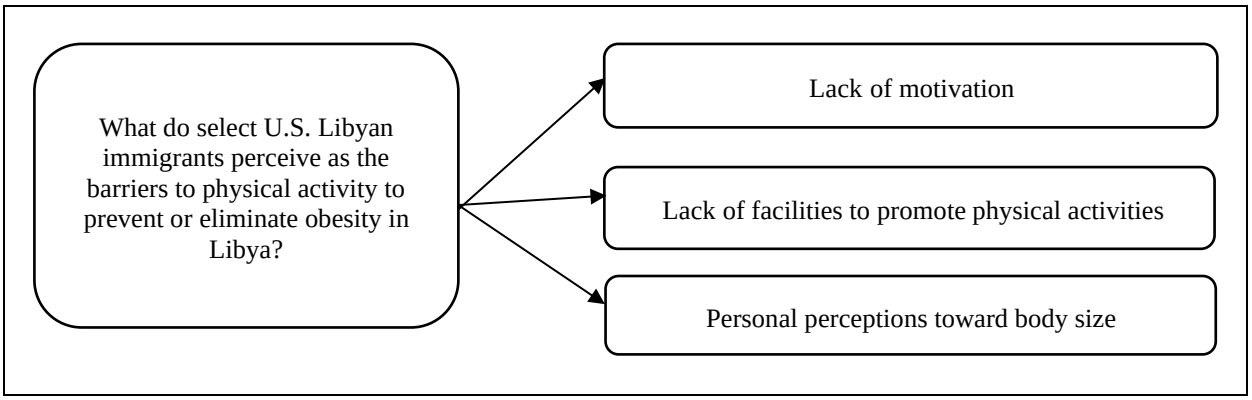


Figure 3. Themes linked to Research Question 2.

Lack of motivation. The HBM's concept of perceived barriers says that people must assess obstacles to change their behaviors (Becker, 1974). The most common response from the participants in this study stated that a lack of motivation for physical activity contributed to widespread obesity among men and women in Libya. The lack of motivation for physical activities (exercise) works as a barrier to obesity prevention or elimination in Libya. The following statements below, taken from the participants, addressed the lack of motivation for physical activity among Libyan adults as a barrier to obesity prevention or elimination in Libya.

People who are obese often have a desire to exercise, but they do not have the courage to practice exercise. Mr. Albrage (personal communication, July 14, 2019) reported obese Libyans are aware of the benefits of exercise, and they have a desire to exercise, but they have a lack of motivation. He reported, “Obese Libyans have a sense of the need to exercise, but they do not have the courage and time to practice because it is complicated for obese Libyans to practice exercises” (Albrage, personal communication, July 14, 2019). Similarly, Mr. Shaga (personal communication, August 5, 2019) revealed that Libyans who are obese have a desire for exercise, but the community does not encourage them to do it. The participant reported,

> Libyans who are obese have a feeling of the need to exercise to lose weight; they want to exercise, and they know that physical activities can help them to lose weight, but they do not practice due to the lack of an encouraging community in Libya, especially women; men are more open to exercise because of the spread of gyms. (Mr. Shaga, personal communication, August 5, 2019)

Likewise, Mr. Gryan (personal communication, June 27, 2019) reported the same reason as the previous participants for Libyans’ lack of exercise that the majority of obese Libyans feel a need for exercise, but they have a lack of will power because they love food. He stated,

> Most obese Libyans have a desire to exercise because of social networking sites that show pictures of artists and celebrities with healthy bodies, but there is no real will on the part of obese Libyans to lose weight because they continue to go to fast-food restaurants; therefore, it is useless to go to gyms to lose weight when exercise and fast food are not in harmony. (Mr. Gryan, personal communication, June 27, 2019)

Mr. Elfaydi (personal communication, July 19, 2019) reported another reason for the lack of motivation that prevents obese Libyans from practicing exercise – obese Libyans feel the need to exercise, but the obese body makes them ashamed to go to the gym. He stated,

> Most obese Libyans have a feeling of the need to exercise, but they don't know how to exercise or participate in sports when they are ashamed of going to the gym because of the shape of their obese bodies. If gyms would devote one day a week to those who are obese, obese people might be encouraged to go to the gym. (Mr. Elfaydi, personal communication, July 19, 2019)

Mr. Albeza (personal communication, August 5, 2019) reported that it is challenging for an obese person to exercise because of the lack of motivation. He stated, "People with obesity need exercise, but it is difficult for them to exercise due to their obesity statuses" (Mr. Albeza, personal communication, August 5, 2019). Mrs. Garhaba reported her experience with exercise and the importance of motivation and encouragement for obese Libyans to practice exercise to eliminate obesity:

> Obese Libyans have a feeling of the need to exercise, but they need something to gently encourage and motivate them to exercise because obesity frustrates them and then there is pressure on them to exercise strongly. For example, at the beginning, only 15 minutes of exercise and then increase the time to 20 minutes for encouragement. I have experience with weight loss groups. One of the participants with us in the group decreased 10 kilograms with a very gentle period of encouragement and motivation. (Mrs. Garhaba, personal communication, June 27, 2019)

These responses by the participants that related to the barriers of lack of motivation add new scholarship to the literature on obesity in Libya.

Lack of public transportation. The participants viewed lack of transportation as a cause for the lack of physical activity, which has led to the widespread obesity phenomenon in Libya. The participants noticed that the lack of physical activity in Libya works as a barrier to obesity prevention or elimination among Libyans. Mr. Albeza (personal communication, August 5, 2019) reported that a lack of public transportation means that no culture of walking was a factor for obesity prevention because many Libyans rely on automobiles to move from place to place. He stated, "One of the factors that make Libyans vulnerable to obesity is the lack of public transport, and there is no culture of walking" (Mr. Albeza, personal communication, August 5, 2019).

Discomfort in exercising. Mr. Gryan (personal communication, June 27, 2019) mentioned other barriers to obesity prevention, such as discomfort in exercising. Mr. Gryan (personal communication, June 27, 2019) reported that some Libyans prefer jobs with minimal muscular effort along with full reliance on private vehicles which, along with the lack of public transportation and the lack of a bicycle culture, has led to the lack of exercise which is a barrier to obesity prevention among Libyans. He stated,

> One of the factors that make Libyans vulnerable to obesity is lack of exercise and full reliance on cars for mobility. People use cars to go to everywhere, even for a distance of one kilometer. There is no public transport in Libya, and there is no culture of using bicycles. (Mr. Gryan, personal communication, June 27, 2019)

Other participants reported that lack of exercise and sport contributed to growing obesity in Libya and that this deficiency is a barrier to obesity prevention in Libya. Mr. Elfaydi (personal communication, July 19, 2019) reported, "Lack of sports or exercises in the daily schedule of Libyans was a factor to increase obesity among Libyans." Likewise, Mr. Albrage (personal

communication, July 14, 2019) reported the lack of exercise is the most significant factor for obesity, and it is a barrier to obesity prevention among Libyans because the majority of Libyans do not exercise: “The most important factor for obesity in Libya is that about 70% of Libyans do not exercise” (Mr. Albrage, personal communication, July 14, 2019).

Time constraints. Two participants revealed another barrier to obesity prevention in Libya related to lack of exercise – time constraints; in other words, an obese person needs time to exercise to obtain the result of correcting obesity. Mrs. Elshribyni (personal communication, July 23, 2019) reported that Libyans do not practice exercise because of a lack of time and lack of time management “One of the important factors for obesity is no time to exercise, and there is no time management.” Other participants revealed cultural pressure regarding women's practice of exercise: “The socialization of women was a social barrier that prevented women from exercising or going to gyms or going outside the home for exercise, leading to an increased obesity rate among women”. (Mrs. Elshribyni, personal communication, July 23, 2019) Similarly, Mr. Labda (personal communication, June 28, 2019) reported only a tiny percentage of Libyans could see the need to exercise because exercise is not a quick fix to the problem: A tiny percentage of obese Libyans feel they need exercise because people feel they need a long time to lose weight, and fewer than 20% are trying remedy their obesity because they want a quick fix, but exercise needs a long time to get a result. (Mr. Labda, personal communication, June 28, 2019)

All these responses by the participants related to time constraints, discomfort in exercising, and lack of public transportation are supported by the literature. Lemamsha et al. (2018) accused city planners of planning obesity environments through land-use patterns and transportation planning that designated areas that promote individuals to consume non-healthy

foods and not get enough exercise, a situation that could potentially promote obesity. According to studies conducted by Lemamsha and others (Benjamin & Donnelly, 2013; Lemamsha, 2016; Musaiger, 2011; Musaiger et al., 2013), high population density, especially in the city of Benghazi, leads to overcrowding in open spaces and public parks, leaving only a small area for walking or physical activity in the open air (Benjamin & Donnelly, 2013; Musaiger, 2011; Musaiger et al., 2013). Elmehdawi and Albarsha (2012) found that, out of Libyan adults, approximately 44% do not receive adequate exercise, 51.07% of whom are women, and 36% of whom are men. Musaiger and D'Souza (2007) and Alzaman and Ali (2016) reported that high high-calorie intake and high- fat intake, and the lack of a culture of exercise among Libyans, increase the overall percentage of overweight people and obesity in Libya. Lack of time for exercise because of family responsibilities and childcare is also a significant factor hampering Libyans from engaging in physical activities (Lemamsha, 2016). Benjamin and Donnelly (2013), Musaiger et al. (2013), and Musaiger (2011) reported that the lack of time applies to both sexes, but women in Libya have added cultural and religious barriers that prevent them from performing physical activity, including restrictions on clothing.

Poor health education. The lack of high-quality health education in Libya has led to a widespread misunderstanding of simple standards of healthy food and physical activity among Libyans, exacerbating poor health factors, including obesity (Lemamsha, 2016). Poor health education has contributed to limited access to information, a situation that has minimized the benefit of prevention or elimination of obesity (El-Fallah, 2014). Several participants revealed information about the minimal benefits of health education. Mr. Elfaydi (personal communication, July 19, 2019) revealed information related to the individual efforts and limited role of small institutions to provide the benefits of exercise and eating healthy to prevent obesity:

"There are efforts by people and small institutions, but they cannot provide adequate information about obesity, healthy eating, exercises, and its importance. These institutions' efforts have been below the average" (Mr. Elfaydi, personal communication, July 19, 2019). Similarly, Mrs. Garhaba (personal communication, June 30, 2019) noticed some attempts from health educators to address the benefits of preventing obesity in specific clinics by an individual for specific people, but these attempts were not focused on preventing obesity: "Health education tries to address the benefits of obesity prevention through public programs within the clinics in residential neighborhoods where the attempts are based on public health and not the prevention of obesity" (Mrs. Garhaba, personal communication, June 30, 2019). Likewise, Mr. Albeza (personal communication, August 5, 2019) insisted that personal attempts and small sports provide limited avenues to health education: "Unfortunately, individual attempts, like some gyms, make advertisements for money. There are some attempts to educate Libyans about obesity by universities, but it is weak" (Mr. Albeza, personal communication, August 5, 2019).

Regarding poor health education, studies by (Lemamsha, 2016) stated that the Libyan health system does not give priority to necessary preventive health measures for obesity as health facilities are ineffective in controlling and preventing obesity among Libyans. However, the Libyan health system is obligated to promote physical activity, healthy eating, and effective health education to enhance awareness amongst the individuals in Libya.

Religious beliefs. Other barriers to obesity prevention in Libya that were indicated by participants included social habits or cultural practices regarding women derived from religious beliefs. In the Islamic religion, women are obliged to wear dresses and robes and to follow the rules of dress for Muslim women while practicing physical activities separately with trainers of the same gender; however, Libya does not have women's gymnasiums (Musaiger, 2011;

Musaiger et al., 2013). Some participants revealed their experiences with these religious beliefs that prevent women in Libya from practice exercise outside the home, such as in gyms or the sports centers. Mrs. Garhaba (personal communication, June 27, 2019) reported that cultural practice regarding women contributed to the lack of exercise:

> The main reason for obesity in Libya is unhealthy eating and lack of movement, especially among women, because they do not go to gyms or walk in the streets due to the unacceptable impression these activities make in Libyan society. Because of cultural and social barriers, women are not allowed to walk out on the street. (Mrs. Garhaba, personal communication, June 27, 2019)

Similarly, Mr. Darna (personal communication, June 28, 2019) reported cultural practices regarding women who followed social habits for not going out of the home for exercise. He stated,

> One of the most important factors for obesity is lack of movement and lack of exercise, especially with old age, but for women, it is not going out of the house for exercise because of social habits and the use of cars every time they leave the house. (Mr. Darna (personal communication, June 28, 2019)

Likewise, Mr. Shaga (personal communication, August 5, 2019) noticed that a tiny group of the male population exercise but continue to hold cultural and social beliefs that prohibit women from being in public places for exercise:

> A small percentage of Libyans adopt the behavior of walking on the main road up to two kilos a day, mostly because of the insistence of doctors that they exercise to lose weight. 20% of educated Libyans do physical activities by themselves without any encouragement or insistence from doctors. The men are more likely to practice physical

> activities because of the culture of society that maintains the privacy of women by preventing them from appearing in public sports places. (Mr. Shaga, personal communication, August 5, 2019)

Poor health education. Along with religious beliefs, poor health education limited access to adequate health education and led to an increased obesity rate among Libyans. Many Libyans do not pay attention to the importance of health education because of their culture of obesity that says it is not a disease on the grounds that most Libyan cultural and social habits are generated from religious beliefs; therefore, religious practices work as barriers to obesity prevention or elimination in Libya (Benjamin & Donnelly, 2013; Musaiger, 2011; Musaiger et al., 2013). Several responses taken from the participants revealed that Libyans do not consider health education to be a priority. Mr. Darna, (personal communication, June 28, 2019) revealed the carelessness of some Libyans regarding health education. He reported,

> Libyans do not pay attention to health education, and even Libyans who send their children to the summer sports clubs are keeping their children away from bad companions and filling the vacuum while they are out of school, not enrolling them in programs for the purpose of body health; parents do not care if their children become athletes. There needs to be child-rearing regarding health from a young age in Libya. (Mr. Darna, personal communication, June 28, 2019)

Similarly, Mr. Labda (personal communication, June 28, 2019) reported the lack of importance of health education regarding obesity among Libyans: “The importance of health education is unclear for Libyans, and they do not know the importance of fighting obesity at all; the urgency of obesity is not there yet” Mr. Labda (personal communication, June 28, 2019).

These participants' answers correspond with the literature. Benjamin and Donnelly (2013), Musaiger et al. (2013), and Musaiger (2011) showed that women in Libya have cultural and religious barriers that prevent them from performing physical activity that includes restrictions on clothing. Women cannot be seen in public places, and gymnasiums require short sleeves or short-sleeved shirts that are considered a violation of cultural and religious beliefs. In the Islamic religion, women are required to wear long dresses and robes; they are permitted to participate in physical activity on the condition that they follow the rules of dress for Muslim women and also maintain gender segregation and have trainers of the same gender; however, Libya does not have women's gymnasiums (Benjamin & Donnelly, 2013; Musaiger, 2011; Musaiger et al., 2013).

Lack of facilities to promote physical activates. The most common response from the participants stated that the lack of facilities to promote physical activates contributed to widespread obesity among men and women in Libya. The lack of facilities to promote physical activities (exercise) works as a barrier to obesity prevention or elimination in Libya. The following statements below, taken from the participants, address the lack of facilities to promote physical activities in Libya as a barrier to obesity prevention or elimination in Libya.

Mr. Ali reported that the absence of infrastructure and sidewalks, training facilities, weight loss programs, gyms, and exercise equipment created barriers to obesity prevention in Libya:

> Libyans are willing to exercise, but the problem is that the infrastructure does not promote such a thing. There are no parks, no sidewalks, no training facilities or weight loss programs. The lack of these infrastructures discourages those who are obese from exercising. This is very important because Libyans who exercise are a very minimal

> number. It is not because they do not want to, but because of the condition of the lack of equipment, training, and awareness combined. (Mr. Ali, personal communication, June 29, 2019)

Poor health education. Libyans have not received comprehensive health education on obesity to the extent that they are able to prevent or eliminate obesity (Lemamsha, 2016). Some participants revealed that the lack of health education facilities and the limited role of the small health care organizations were factors to increased obesity among Libyans. Mr. Ali revealed information related to poor health education because of a lack of health education facilities, a condition which has contributed to increased obesity in Libya, and it is a barrier to obesity prevention in Libya: "Obesity is major talk in Libya today because of several factors, starting with the lack of education about how obesity can affect health and continuing with the lack of facilities" Mr. Ali, personal communication, June 29, 2019).

Another participant reported poor health education related to the limited role of a small organization that offers health education for Libyans: Mr. Elfaydi (personal communication, July 19, 2019) revealed the same information related to the individual efforts and limited role of small institutions to provide the benefits of preventing obesity. This participant reported: "There are efforts by people and small institutions, but they cannot provide information about obesity, healthy eating, exercises, and its importance. These institutions' efforts below the average" (Mr. Elfaydi, personal communication, July 19, 2019).

The participants' perceptions align with the literature. Studies by Daw (2017), Elfituri (2010), Elfituri et al. (2011), and Elfituri and Sherif (2009) report that the role of Libyan healthcare professionals in providing health education remains neglected. This neglect by Libyan healthcare professionals is due to the lack of training, insufficient health educational materials,

and poor communication skills, as well as insufficient time with patients. In addition to the low priority of health education in Libyan healthcare services, there are inadequate rooms and facilities related to providing health education to the Libyan population.

Personal perceptions toward body size. Another barrier to obesity prevention or elimination related to the lack of physical activity was personal perceptions toward body size. In most Arab countries, several Arab nomadic groups, including some Libyans, perceive obesity or overweight is a sign of good living and a strong financial position. A preference for obese or overweight females is prevalent in Arab communities, including the Libyan community, and obesity is culturally associated with prosperity, beauty, and health, whereas thinness is considered to be a sign of ill health or poverty (Lemamsha, 2016; Musaiger, 2011). Several participants stated that perceptions of particular groups of Libyans about body size as a sign of beauty or good health contributed to widespread obesity among men and women in Libya. These perceptions prevent Libyans from physical activities and work as barriers to obesity prevention or elimination in Libya. The following statements below taken from the participants addressed personal perceptions toward body size in Libya as a barrier to obesity prevention or elimination in Libya.

Mr. Darna (personal communication, June 28, 2019) noticed the belief of some Libyan women that obesity is a sign of beauty for women: “There are some women who are obese because they think it is a sign of beauty in women” (Mr. Darna, personal communication, June 28, 2019). Similarly, Mrs. Garhaba (personal communication, June 27, 2019) noticed that old Libyans considered obese women most beautiful. She reported, “Many Libyans consider obesity an aesthetic form of the body and believe that fat women are the most beautiful” Mrs. Garhaba (personal communication, June 27, 2019). Likewise, Mr. Shaga (personal communication,

August 5, 2019) reported old Libyan generational beliefs of obesity as positive: “The old Libyan generation believes that obesity is a good thing for people” (Mr. Shaga, personal communication, August 5, 2019). Mr. Albrage (personal communication, July 14, 2019) also reported the same response that older Libyans believe obesity is a sign of a comfortable and luxurious life: “The belief among the elderly Libyan that obesity suggests psychological comfort and richness” (Mr. Albrage, personal communication, July 14, 2019). Perceptions about body size are barriers to obesity prevention or elimination in Libya.

Poor health education. As mentioned previously, poor health education about physical activity, and limited access to comprehensive health education contributed to the lack of awareness of the risk of obesity in Libya. Therefore, poor health education works a barrier to prevent or eliminate obesity among Libyans (Daw et al., 2015a; Lemamsha et al., 2018; Salam et al., 2013). Several participants revealed that Libyans are not receiving adequate health education on obesity. Mr. Albeza (personal communication, August 5, 2019) reported a lack of health information to teach Libyans about obesity, and he asserted that regular people in the Libyan community have a role in providing some health information: “There are no bulletins or programs to teach Libyans about obesity, but some information is either on television or from people in the community” (Mr. Albeza, personal communication, August 5, 2019). Similarly, Mr. Elfaydi reported, “Libyans do not receive health education on obesity from the government, and the family does not even care about their children with obesity. Also, there are no programs about obesity on a TV channel or in school for children” (Elfaydi, personal communication, July 19, 2019). Likewise, Mr. Albrage (personal communication, July 14, 2019) noticed, “There are no educational programs on obesity from the Libyan government, even in schools or hospitals, but there are some individual attempts for education on obesity” (Mr. Albrage, personal

communication, July 14, 2019). Mrs. Garhaba reported that Libyans do not have an awareness of obesity, but some people educate themselves on the Internet: “There are no programs that Libyans receive to raise awareness about obesity, but there are sports videos, some of which are for women and those who are interested in searching the Internet for a slim body” (Mrs. Garhaba, personal communication, June 27, 2019).

The responses of the participants are supported by the literature. A study by Lemamsha (2016) explained the perceptions of people in Arab countries and the MENA region about body size. Lemamsha (2016) stated,

> In most countries in the Middle East and North Africa (MENA), being overweight or obese is widely perceived to be an indicator of affluence A number of Arab nomads in the Arab region, including some Libyans, perceive obesity to be a sign of financial success as well as ‘good living’ and ‘good health’ with some holding fatalistic’ naïve beliefs’ about one’s body being ‘God-given’ and therefore not amenable to being changed. A preference for overweight females is common in Arab communities and Libya is no exception. Fatness is culturally associated with beauty, prosperity, health, and prestige, whereas thinness is perceived to be a sign of poverty or ill health. (p. 57)

Regarding poor health education, studies concluded that inadequate health education had caused an increase in obesity among Libyans. A study by Lemamsha et al. (2018) concluded that the increased rate of obesity in Libya is due to the limited role played by Libyan healthcare professionals in providing adequate health education regarding obesity prevention to the general public. A study by El-Fallah (2014) and the WHO (2017a) confirmed the absence of health education in Libya and little knowledge related to obesity and its effects.

Barriers to healthy eating include the quantity of food, the quality of food, and cultural beliefs. Barriers to physical activity include lack of motivation, religious beliefs, lack of facilities to promote physical activities, and personal perceptions of body size. All of these barriers are challenges for adhering to alternative healthy lifestyle choices for Libyans. All participants criticized the lack of health education in Libya and identified it as a barrier across all themes. The Libyan government is not aware of the escalating prevalence of obesity among Libyan adults due to the lack of disease surveillance systems and health information systems. Despite the money being spent on the health system, the Libyan government still lacks healthcare information systems. Therefore, no one can deny that the Libyan health system is very weak in terms of providing treatment and preventive services. Thus, it can be said that the absence of health education leads to a misunderstanding of the health rules and a lack of awareness among Libyans. therefore, it is not reasonable to blame Libyans if they believe that obesity is not a disease and that it does not cause disease. Libyans have ignored most of the slogans that were launched by the Libyan government, such as “health for all and by all,” because Libyans do not believe in such slogans, and Libyans have not been taught how health can be “by all” or why health for all is important and deserves their attention. Therefore, the top priority of health education should not be teaching people about how to take care of themselves but rather teaching them that taking care of themselves is important and worth the effort.

Chapter Summary

This chapter provided a description of the participants in the study, including their pseudonyms, educational qualifications, and jobs. Then, the researcher addressed the two research questions that sought to explore the experiences of Libyan immigrants in the United States regarding barriers to obesity prevention or elimination in Libya, what the participants

perceived as barriers to healthy eating to prevent or eliminate obesity in Libya, and what the participants perceived as barriers to physical activity to prevent or eliminate obesity in Libya.

After the interviews with the participants, the researcher identified the themes that emerged from the data. Three themes that emerged from the first research question were as follows:

1. The theme of *quantity of food* included sub-themes of *lack of self-discipline (excessive eating)* and *poor health education*;
2. The theme of *quality of food* included sub-themes of *the high cost of eating healthy* in addition to *poor health education*.
3. The theme of *cultural beliefs* included a sub-themes *poor health education*.

For the second research question, three themes that emerged from interviews were as follows:

1. The theme of *lack of motivation* included sub-themes of *lack of public transportation*, *no culture of walking*, *discomfort in exercising*, *time constraints*, *religious beliefs*, and *poor health education*.
2. The theme of *lack of facilities to promote physical activities* included the sub-theme of *poor health education*.
3. The theme of *personal perceptions toward body size* included the sub-themes of *traditional ideals of physical beauty* and *poor health education*.

In the end, the researcher analyzed the data based on the literature with assertions and contradictions. In the next chapter, the study will provide a summary of the research study; draw conclusions from the data; discuss implications to theory, practice, and policy; provide

suggestions for future research; outline the limitations of the study; and reflect on the researcher's experiences while conducting this research project.

Chapter 5: Summary, Conclusions, Implications, and Suggestions for Future Research

This chapter begins with a summary and the major findings of the study, including the problem statement, the purpose of the study, the research methodology, the conceptual framework of the study, and a review of the literature and findings shown by the data. Then the researcher will draw conclusions based on the knowledge gained from this study with an exploratory explanation of the findings. The researcher will discuss the implications of the study; findings for policy, practice, and theory; and unexpected study outcomes. The researcher will also offer suggestions for future research related to the current study. The chapter concludes by providing limitations of the study, the researcher's reflections, learning opportunities, experiences provided by the research study, and a chapter summary.

Summary and Major Findings

Obesity has become more prevalent in Libya as a developing country to the extent that obesity reached the epidemic stage in the 21st century (Elabani & Kure, 2015). Obesity has become a critical problem in Libya because it is widespread among Libyan adults between the ages of 20 to 74 years. The prevalence of obesity among women in Libya is much higher than that of men, reaching 36.10% in 2010, while at the same time, obesity among men increased to 21.2% (Hassan et al., 2016; Musaiger et al., 2012). By 2019, the rate of overweight increased among women to 33.2% compared to 32.4% among men, while the prevalence of obesity among women was 47.4% compared to 33.8% among men, and obesity has more than doubled in the last three decades, as 75% of Libyans are overweight or obese (Hassan et al., 2016; Lemamsha et al., 2018; Lemamsha et al., 2019; Musaiger et al., 2012; Sheriff, 2016).

The impact of obesity is highly associated with several diseases, including cardiovascular disease, liver disease, diabetes, and cancer, all of which may lead to premature death and various

disabilities (Chan & Woo, 2010; Guh et al., 2009; WHO, 2015b, 2017b). The city of Benghazi, which is the second-largest city in Libya in terms of population, has witnessed a rapid increase in chronic disease associated with obesity, leading to premature deaths and disabilities (Lemamsha et al., 2018). Thus, the various conditions resulting from obesity negatively affect the development of the nation of Libya, where the cost of treatment of diseases related to obesity in 2012 amounted to 1.3 billion Libyan dinars. This amount accounted for 65% of the budget of the health care sector in Libya (Lemamsha et al., 2018). This study sought to understand what U.S. Libyan immigrants perceive as the barriers to obesity prevention or elimination in Libya. As a result of this information, educative programs might be created to raise awareness among Libyans and lead to a reduction in the prevalence of obesity, including reducing the depletion of money spent by the Libyan state to treat diseases related to obesity.

The purpose of this study was, therefore, to explore the perceptions of select U.S. Libyan immigrants regarding the barriers to obesity prevention or elimination in Libya. The researcher presented the HBM as a framework to achieve the purpose of the study. The goal of HBM is to explain health-related behavior and to provide health services for the prevention of illnesses rather than treatments (Hochbaum, 1958; Rosenstock, 1974a). The notions of the HBM are the perceived susceptibility to the disease, the perceived severity of the disease, the perceived benefits, and the perceived barriers to disease prevention. The researcher will use only the perceived barriers concept to answer the research questions of this study because the cause of the high prevalence of obesity in Libya seems to be the presence of particular challenges that prevent people from adhering to alternative and healthy lifestyle choices. These challenges may serve as barriers to obesity prevention and elimination in Libya. The HBM's concept of perceived barriers coincides with the perceptions of U.S. Libyan immigrants regarding the barriers to obesity

prevention or elimination; the study found what barriers to obesity prevention or elimination in Libya the U.S. Libyan immigrants perceived.

To achieve the purpose of this study, the researcher formulated two sub-questions based on one of the HBM's concepts to help in answering the central research question of the study: What do select U.S. Libyan immigrants perceive as the barriers to the prevention or elimination of obesity in Libya? The research sub-questions are as follows:

RQ 1: What do select U.S. Libyan immigrants perceive as the barriers to healthy eating to prevent or eliminate obesity in Libya?

RQ 2: What do select U.S. Libyan immigrants perceive as the barriers to physical activity to prevent or eliminate obesity in Libya?

The researcher chose a qualitative methodology for the in-depth discovery of the perceptions of the selected sample of Libyan immigrants to the United States. More specifically, the researcher chose the IPA as a branch of the qualitative methodology. The IPA "focuses on discovering how individuals understand the experience and transform experimentation into individual awareness as a common denominator" (Patton, 2015, p. 115). The IPA produces information about lived experiences on their terms rather than from preconceived theoretical precepts. The data collection for this qualitative study with an IPA design was done via semistructured interviews with participants. The study consisted of 10 U.S. Libyan immigrants who had lived in Libya for less than five years.

The researcher completed interviews that explored participants' perceptions of barriers to obesity prevention or elimination. Data analysis showed several emerging themes for each of the research questions. For the first research question, which focused on what participants perceived as barriers to healthy eating to prevent or eliminate obesity in Libya, the participants revealed

several barriers. The *quantity of food* theme included a lack of self-discipline (excessive eating). Libyans consume large quantities of food, especially at social events, where they eat all the food provided to them, and many cannot control themselves by stopping eating because of their love of food. The *quality of food* theme shows another barrier to obesity prevention. Libyans prefer lower nutritional foods because of the high cost of healthy foods in Libya. The *cultural beliefs* theme identified a barrier to preventing or eliminating obesity in that a culture of healthy eating is not common in Libyan society. Libyans do not believe that Libyan food, which is characterized by an abundance of fats and sugars, is harmful to health, nor do Libyans consider obesity a disease or a cause of diseases such as diabetes. Poor health education is a barrier associated with all three themes for RQ1 in that Libyans do not have access to comprehensive health education because the Libyan health system does not provide adequate health education.

The second research question focused on what participants perceived as barriers to physical activity to prevent or eliminate obesity. The theme of *lack of motivation* shows one barrier to physical activity; Libyans who are obese may have a desire to exercise, but they do not have the encouragement from family or community to practice exercise. Moreover, obese Libyans may feel the need to exercise, but their obese body makes them ashamed to go to the gym. A sub-theme of the *lack of motivation* theme was *religious beliefs*, especially for women because, in the Islamic religion, women have rules requiring them to wear long dresses and robes, practice physical activities separately from men, and exercise with trainers of the same gender; however, Libya does not have women's gymnasiums. The theme of lack of facilities to promote physical activates identified another barrier to physical activity, and the theme indicated an absence of facilities to promote physical activates such as infrastructures and sidewalks, training facilities, weight loss programs, gyms, and exercise equipment. A third theme, *personal*

perceptions toward body size, identified another barrier to physical activity in that several Arab nomadic groups, including some in Libya, perceived obesity or overweight as a sign of good living and abundant financial wealth, while a cultural preference for obese or overweight females exists in traditional Libyan communities where obese and overweight women are associated with prosperity, beauty, and health. *Poor health education* was a sub-theme which demonstrated a barrier to obesity prevention or elimination for both research questions because the health care system in Libya does not provide adequate health education for Libyans. Unhealthy eating and inadequate physical activity are significant risk factors for obesity and other chronic diseases, such as Type 2 diabetes, heart disease, stroke, certain cancers, and depression. Healthy eating and physical activity reduce the risks of cardiovascular disease and diabetes. Healthy eating and increased physical activity are vital for healthy growth and development and for preventing obesity.

The data obtained by the researcher included the quantity of food, quality of food, religious beliefs, lack of facilities to promote physical activities, personal perceptions toward body size, and poor health education. All were supported by previous literature regarding what the participants perceived as barriers to healthy eating and physical activity to prevent or eliminate obesity in Libya. On the other hand, the data also included cultural beliefs and lack of motivation. These data were not supported by extant literature, and they would add to the existing knowledge related to the barriers to healthy eating and physical activity regarding obesity prevention or elimination in Libya.

Conclusions

The data for this study support three main sets of conclusions. First conclusions are related to healthy eating: The data supported the conclusion that excessive eating and an inability to self-

control the desire to eat all the food presented posed a challenge to Libyans and contributed to their failure to follow a healthy diet. Therefore, all Libyans who maintain the habit of binge eating are vulnerable to obesity, and they cannot prevent themselves from becoming obese. Changes in the lifestyle of many Libyans in recent years in the direction of eating in fastfood restaurants, especially after the spread of Western restaurants in Libya, was also a challenge and an obstacle for the Libyans to following healthy eating habits. The desire for fast food is seen as a kind of modernity in Libyan society, but the shift to fast food consumption has exposed them to a major cause of obesity; thus they are unable to prevent or eliminate obesity. According to the participants' responses, the high cost of healthy eating in Libya is not affordable for everyone, and Libyans prefer to consume low-quality food such as fast food that is characterized by high fats and carbohydrates, steering them away from healthy eating; thus they are exposed to obesity and cannot prevent themselves from obesity or eliminate it. All these data are extant in the literature (e.g., Elmehdawi & Albarsha, 2012; Daw et al., 2015a; Lemamsha, 2016; Salam et al., 2013).

A related conclusion supported in the findings of the study holds that cultural beliefs about eating habits among Libyans contribute to their inability to prevent or eliminate obesity. Eating is part of the Libyan culture and one of the essential social customs in Libya, and most Libyans believe that food is a cultural issue, not a health issue. Healthy eating is not part of the Libyan eating culture. Therefore, Libyans do not think that Libyan food causes health problems. They believe that obesity is not a disease and that diabetes, high blood pressure, and heart disease are not linked to obesity given that many non-obese people also have those ailments. These cultural beliefs were obstacles for Libyans to the implementation of healthy eating; thus they were vulnerable to obesity, and they could not avoid it or eliminate it. Some studies indicated that unhealthy eating is integral to Libyan culture. Still, previous studies did not

explicitly specify that cultural beliefs constitute a barrier to adopting healthy eating in Libya; therefore, these data from the participants add knowledge and expand the scope of the literature in this regard.

Second are conclusions related to physical activity: The data supported the conclusion that the lack of an encouraging family and social environment to engage Libyans in physical activity constituted an obstacle for Libyans who may have a desire to practice physical activity, but they do not have the courage to do so. Those who do not have the willpower to exercise need to be encouraged; some of them are aware of the benefits of physical activity. Still, they feel shame because of the size of their bodies, and therefore, they do not go to exercise centers despite many of them suffer from obesity. Those people are deprived of a real opportunity to prevent or eliminate obesity because of the lack of an encouraging environment for physical activity. Previous studies did not indicate that the lack of encouragement for exercise represents a barrier for Libyans to practice physical activity to prevent or get rid of obesity. Therefore, these data will add information to the literature regarding the barriers to obesity prevention or elimination in Libya.

The data also supported the conclusion that most Libyans' reliance on private vehicles, which, along with the lack of public transportation and the lack of bicycle culture, has led to the lack of exercise, which is a barrier to obesity prevention among Libyans. Moreover, Libyans, in general, are facing direct and indirect barriers to physical activity – direct barriers such as a lack of time for exercise, an inability to engage in physical activity comfortably, and the lack of a walking culture in the cities. Indirect barriers include problems, such as the lack of sidewalks, parks, and space for exercise. With all these direct and indirect barriers, most Libyans are unable

to prevent obesity or eliminate it. These data are congruent with the literature related to the lack of public transportation, time constraints, and discomfort in exercising (e.g., Benjamin & Donnelly, 2013; Lemamsha, 2016; Musaiger, 2011; Musaiger et al., 2013).

The data also supported the conclusion that religious beliefs in Libya were an obstacle to the practice of physical activity, especially among women. These religious beliefs impose restrictions and rules for physical activity that place women in separate locations from men and require that women use trainers of the same gender and wear Muslim dress while exercising. Therefore, physical activity among Libyan women is minimal and leads to an increase in the rate of obesity among women. These findings are corroborated by Benjamin and Donnelly (2013), Musaiger et al. (2013), and Musaiger (2011).

Additionally, the data supported the conclusion that some Libyans, especially the older generations, perceive that being overweight or obese is a state of good health, comfort, wealth, and beauty, whereas thinness is considered to be a sign of ill health or poverty. All of these perceptions formed barriers for Libyans to engage in physical activity; thus they have lost the opportunity to prevent obesity or eliminate it. These data are supported by pre-existing literature associated with personal perceptions toward body size (e.g., Lemamsha, 2016; Musaiger, 2011).

The third set of conclusions related to poor health education: The data supported the conclusion that all the barriers to healthy eating and physical activity for obesity prevention or elimination are challenges that prevent Libyans from adhering to alternative healthy lifestyle choices. Especially important to this conclusion is that participants criticized health education and identified it as a barrier across all themes of the study. At the same time, most of the participants revealed that health education regarding obesity is not a priority for Libyans because they consider obesity is not a disease. Thus, Libyans are not receiving the benefits of health

education regarding obesity. Health education alone cannot sufficiently address obesity issues, so health education has failed to convince Libyans of the barriers to obesity prevention or elimination in their own lives. Accordingly, the top priority for health education should not be teaching people about how to take care of themselves, but rather teaching them that taking care of themselves is important and worth the effort. All these findings are aligned with the literature (e.g., Elabani & Kure, 2015; Elfituri et al., 2006; El-Fallah, 2014; Lemamsha et al., 2018; Musaiger et al., 2012).

Even though the health care system in Libya faces many difficulties in providing health services to the Libyan population, the Libyan Ministry of Health has established many strategies to develop the health care system, such as training and teaching health care staff, including health education employees in Libyan health institutions. Consequently, Libyan leaders are making efforts to improve health services and health education in Libya (Libyan Ministry of Health, 2017).

Interpretations of Findings

The first interpretation of the findings for this study is that judging by their eating habits, Libyans' vulnerability to obesity is normal in that people who eat excessively and maintain poor health habits are exposed to obesity. Libyans are highly vulnerable to obesity because excessive eating works as a barrier to healthy eating; also, the consumption of starches and other unhealthy dietary options leads to obesity. Libyans are especially prone to overeating on special occasions. Some Libyans are aware of the danger of obesity. Still, they cannot control themselves in limiting excessive eating, and with this excessive eating, they will become obese despite their knowledge regarding the causes and risks of obesity. Moreover, some Libyans know that overeating causes health problems. Still, because they do not know where to obtain healthy

alternatives that might prevent them from becoming obese, they do not give attention to the dangers of obesity. Thus, excessive eating is a barrier to healthy eating among Libyans, and they are unable to prevent themselves from becoming obese. Several studies are aligned with this interpretation. Lemamsha et al. (2018) and Elabani and Kure (2015) stated that a lack of selfdiscipline while eating contributes to the prevalence of obesity among Libyans.

The second interpretation of the findings is that one of the factors for the increased obesity rate in Libya is Libyan cuisine, which is characterized by inexpensive pastries, carbohydrates, and fats because healthy eating is expensive. The nature of the food that Libyans consumed is a factor of obesity's spread among Libyans because Libya's food contains excessive fats, carbohydrates, and sugars. Also, healthy eating is not part of Libyan culture., and all meals contain carbohydrates, especially lunch and dinner. Additionally, the human metabolic rate is not commensurate with the rate of food consumption; therefore, it is easy for Libyans to become obese. The consumption of junk food and fast food and the high cost of healthy food are the barriers that prevent Libyans from eating healthy. Lifestyle changes that have turned young people in Libya toward fast food in the last ten years have condemned many Libyans to obesity. Farrag et al. (2017) reported increased obesity in the MENA area as a result of the dietary transition to increasingly unhealthy food consumption; these changes include epidemiological shifts such as processes of food preparation, the transition to a modern lifestyle, and reliance on fast food.

The third interpretation of the data is that healthy eating is not part of Libyan culture, so obesity is spread among Libyans, particularly among women, because of a diet that contains excess fats, carbohydrates, and sugars. In Libya, all members of the family eat the same food at the same time during all three meals each day. This lack of variety of food in the diet poses an

important factor in exposure to the whole Libyan family for obesity in a way that does not exist in other countries. For example, in the United States, all members of the family cannot eat the same food at the same time during the three meals a day. Additionally, Libyans have a culturally inscribed belief that food habits are a lifestyle, not a health condition. Many Libyans believe that obesity is not a disease. Even Libyans who seek to reduce their weight do so because of dissatisfaction with their body size or the perception of society about the shape of their external bodies. Therefore, Libyans are unable to prevent or eliminate obesity because they fail to identify the cause of obesity.

The fourth interpretation of the data is that lack of encouragement from family contributes to the failure of obese Libyans to exercise to lose weight even though they have a sense of the need to exercise to lose weight and they know that physical activity can help them to lose weight. A lack of will power is a reason many Libyans fail to prevent or eliminate obesity by going to the gym for exercise.

The fifth interpretation of the data is that the comfortable lifestyle in Libya, the neglect of the Libyan state for public transportation, and the availability of private cars for all Libyans have contributed greatly to Libyans' lack of physical activity. For this reason, Libyans have become vulnerable to obesity and have difficulty preventing it. Modern Libyans are not accustomed to exercising, and it is not part of their daily routine. Many do not feel they have time to practice physical activity, especially those who are obese because losing weight with exercise requires patience and a long time to obtain results. Thus, Libyans face barriers to physical activity in the lack of time and the discomfort they feel when engaging in physical activity.

The sixth interpretation is that religious beliefs in Libya have played a fundamental role in preventing women from engaging in physical activity, where the Islamic religion imposes

rules of wearing long dresses and robes on Muslim women. Also, the Islamic religion requires Muslim women to practice physical activities separately from men with same-sex trainers (Musaiger, 2011; Musaiger et al., 2013). Additionally, the lack of gymnasiums for women forms a barrier to physical activity for women in Libya. The inability of women to go out of the house to practice physical activity in public places also creates a barrier that prevents women from engaging in physical activity and contributes to Libyan women's higher rate of obesity than that of their male counterparts.

The seventh interpretation of the data is that personal perceptions toward the size of the body contributed to prevent some Libyans from practice physical activity because many people in Arab countries include Libyans believe that obesity and being overweight are signs of health and decent life, and thinness is a sign of ill-health and poverty. Many women consider obesity and overweight to be a sign of beauty in women. The older generations in Libya consider obesity an aesthetic form of the body and believe an overweight woman is the most beautiful.

The eighth interpretation of the data is that the absence of health education regarding the importance of healthy eating and physical activity has greatly affected the behavior of Libyans, leading to their failure to adopt healthy foodways and engage in physical activity to protect against obesity. The absence of the role of the Libyan government in providing comprehensive health education through effective educational programs was a barrier for the Libyans to adopt healthy behavior in eating a healthy lunch and engaging in physical activity.

Implications

Theory. The findings of the study support the "perceived barriers" concept of the health belief model. The study demonstrated the extent to which the concepts of Hochbaum (1958) and

Rosenstock's (1974a) model could be used to aid health protection behavior and the assimilation of health services. Health education addressed the issue of barriers to obesity prevention or elimination in Libya. The HBM provided a useful framework for exploring participants' perceptions regarding barriers to healthy eating and physical activity to prevent or eliminate obesity in Libya. The findings pointed to the quantity of food (including a lack of self-discipline leading to overeating) and quality of food (including low nutritional foods and a preference for junk food and fast food) as barriers to healthy eating to prevent or eliminate the phenomenon of obesity. The findings also indicated a lack of motivation to engage in physical activity (included a lack of public transportation, a lack of a culture of walking, a lack of health education facilities, and personal perceptions of body size) as a barrier to physical activity to prevent or eliminate obesity. All of the barriers mentioned existed concomitantly with poor health education, given that the health care system does not provide comprehensive health education about obesity prevention.

This research could pave the way for researchers in the fields of education and health, and in social, psychological, and economic institutions to conduct research related to the issues that promote health. Most studies on obesity in Libya have followed the quantitative method; however, this study provides a qualitative approach that others may adopt to conduct more research on barriers to obesity prevention or elimination in Libya, North Africa, and the Arab world. Other researchers may also adopt or adapt the questionnaire used in this study to collect information on the topics of nutrition and health education. This study opens the door for researchers and those interested in the importance of health education and awareness in Libya and the MENA area to conduct further research about preventive measures to reduce the prevalence of obesity in Libya and the MENA area. The findings of this study may help researchers to understand the barriers to healthy eating and physical activity to prevent or eliminate the phenomenon of obesity. It may also aid in counteracting the low level of awareness

among Libyans to combat the prevalence of obesity and the inability to overcome the barriers to obesity prevention.

There have been few studies in the literature about barriers to obesity prevention, and the researcher has found no studies in the literature that investigated the perceptions of Libyan immigrants in the United States regarding barriers to obesity prevention. Accordingly, the findings of this study will add vital information to the current literature relative to the barriers to obesity prevention to address the issue of obesity and the prevalence of obesity in Libya.

Policy. The findings of this study may contribute to health promotion in Libya by informing the Libyan government's decisions on how to prevent the spread of obesity. Additionally, this study may aid the Libyan government in the formation of information-related policies to promote health education for obesity prevention. Information contained in this study may assist the Libyan government in forming a basis for an effective health education policy on obesity with health policymakers in Libya. The findings of this study could also contribute to public health policies by attracting the attention of medical staff, primary health care workers, and medical students in Libya regarding the importance of educating the public about obesity in Libya and convincing them of the necessity for including obesity education in the curricula of medical schools and public health colleges. The findings indicate that the barriers to healthy eating and physical activity to prevent or eliminate obesity might contribute to the re-evaluation of health policies in Libya regarding the importance of health education to raise awareness and prevent obesity. The re-evaluation of health policies could lead to alleviating the financial burden of the Libyan government in the treatment of diseases associated with obesity.

Practice. The findings can provide a more extensive understanding of the effect of the inefficiency of health education programs on obesity in delivering training courses for health

professionals that meet the needs of all segments of the population (El-Fallah, 2014). The findings of this research can provide academics and trainers with the ability to design and implement effective courses for primary healthcare and also integrate them into the curricula of medical schools, health flyers, and pamphlets used to improve and enhance the public health of the Libyan population. Additionally, the findings of this study can help healthcare centers in Libya to provide the tools needed to implement specific health education programs to reduce the spread of obesity (El Oakley et al., 2013). The findings of this study could motivate individuals in Libya to practice healthy behavior by eating healthy food and engaging in physical activity. It can also encourage members of the community to adopt strategies to eliminate barriers that prevent Libyans from engaging in physical activity and eating healthy food. Perhaps such a strategy should start with Libyans' believing that their health is important and that it deserves their efforts to remove barriers to healthy eating and physical activity.

Unexpected study outcomes. Mr. Shaga (personal communication, August 5, 2019) revealed a different opinion from other participants; he reported unexpected findings that the majority of Libyans have an awareness of obesity risk, and the older generations of Libyans perceived obesity as a healthy condition of the body. Mr. Shaga (personal communication, August 5, 2019) reported: "There is awareness; Libyans are aware of obesity problems, but the old generation believes that obesity is a good thing for people, and only 20% of Libyans are trying to combat it by losing weight." However, this information that many Libyans have an awareness of obesity, as reported by Mr. Shaga, is not supported by the literature.

Suggestions for Future Research

In the future, researchers can expand the scope of this study to include the relationship between the barriers to obesity prevention and health education in Libya using a quantitative

methodology. Also, researchers can conduct the same study using Libyan participants who have experienced obesity or Libyans who have been diagnosed with obesity. In such a study, the research question may be framed as, “What are the lived experiences of Libyan immigrants in the United States about health education regarding obesity prevention in Libya?” The same study can be replicated in different groups of immigrants in the United States because some of the immigrant groups have the same eating habits as Libyan immigrants, such as immigrant groups from the MENA area. Moreover, researchers, in future, can explore why Libyans are not interested in health education. It is also possible to conduct a study to discover the relationship between the cultural heritage of educated Libyans and obesity. A future study can also be conducted using the HBM to detect behavioral interventions for obesity among Libyans to raise awareness about obesity.

Limitations and Reflexivity

The sample of the study was limited to Libyan immigrants in the Central Florida area only. The sample size was small but suitable for exploring this group of Libyans that had not been studied previously. The researcher used the purposive sampling method, which limited the generalization of the results of the study outside the research site. There were time constraints associated with face-to-face interviews during the eight-day visit to Orlando, including constraints posed by social circumstances and a lack of time for some participants. Also, the researcher did not have continuous access to the place to observe the Libyans with health education to get other data sources. The researcher has used only the perceived barriers concept of the HBM to answer the research questions of this study because the high prevalence of obesity in Libya seems to suggest the presence of particular challenges that prevent people from adhering to alternative and healthy lifestyle choices. These challenges may serve as barriers to obesity

prevention and elimination in Libya. This assertion informed the study's purpose, which aligns with the problem of the study. The choice of using perceived barriers concept of the HBM affected the study that limited the findings of the study, which only discovered participants' perceptions of the barriers to obesity prevention or eliminating in Libya. Instead of discovering participants' perceptions of susceptibility to obesity, the perceptions of benefits of obesity prevention, perceptions of taking a specific action to prevent obesity, and perceptions of selfefficacy that the specific action will produce benefits of preventing obesity.

Reflexivity, the researcher learned how to determine the basic idea of the subject of study and the theory or model that fits the subject of the study, along with the problem and the purpose of the study. The researcher became familiar with the literature to ensure that other researchers had addressed the problem to be studied in terms of what was known about the subject of research and what was not known, and what we want to know. The researcher also learned how to formulate research questions created from theoretical structures or model concepts. The researcher learned to choose the approach to the topic of the research, and he studied the ethics of scientific research and data collection. The researcher is pleased to contribute a small piece to the building of knowledge with others. If the researcher had the opportunity to do the same study again, he would change the purpose of the study from participants' perceptions to experiences because he could explore the lived experiences of participants about the phenomenon. The researcher used the case study approach as a research design, but he changed to phenomenological analysis because "it focuses on discovering how individuals understand the experience and transform experimentation into individual awareness as a common denominator" (Patton, 2015, p. 115). This focus on phenomenological analysis is aligned with the purpose of

the study. On the other hand, the case study design focuses on the description and exploration of a bounded system, such as individuals, activities, processes, or events for small group of people (Yin, 2003).

The researcher is a professional in the health sector, and he has learned that the top priority of health education in Libya should not be teaching people about how to take care of themselves but rather teaching them that taking care of themselves is important and worth the effort. The researcher aspires to overcome the barriers to healthy eating and ensure that physical education is the first choice for health care and health education. The researcher hopes to lead the way in fulfilling the Libyan government's commitment to fostering a good learning community free of obesity to reduce the cost of disease treatments related to obesity.

Chapter Summary

This chapter provided a complete summary of the study that included all elements of the study design and the results obtained by the researcher from the data. This chapter summarizes the conclusions, explanations, and effects of this study as well as the study's recommendations for future research, the implications of the study, and the limitations of the researcher. The conclusions of the study, which were presented in this chapter, answered the central research question as participants perceived quality of food, quantity of food, cultural beliefs, lack of motivation to physical activity, lack of facilities to promote physical activity, personal perceptions toward body size as barriers to obesity prevention or elimination in Libya. The data were vital as they clarified the perceptions of U.S. Libyan immigrants regarding barriers to obesity prevention and helped in the proposal to promote health awareness among Libyans for health policymakers in Libya. This chapter also presented conclusions in terms of the barriers to obesity prevention or elimination in Libya, which could be used in future research to explore the

relationship between the low level of awareness of obesity in the absence of health education. This study could open the doors for researchers and those interested in the importance of health education and awareness in the populations of MENA countries and the Arab world on preventive measures to reduce the prevalence of obesity by promoting health education and awareness of health. Policymakers in the neighboring countries of Libya may also use the findings of this study to implement plans and strategies to overcome obesity prevalence to practice healthy behavior in eating healthy food and engaging in physical activity. They may adopt a strategy to eliminate barriers that prevent people from engaging in physical activity and eating healthy food. It is possible to transfer the findings of this study to the MENA countries, especially Arab countries, because people have the same food habits and culture, as discussed in the topical literature section.

References

Aburawi, E. H., Ghrew, M. H., Zoubeidi, T., Benamer, H. T., Elfituri, A. A., Ziglam, H. H., . . ., & El Oakley, R. M. (2016). Applicability of the organization's healthcare system framework: A consensus development study in Libya. *Ibnosina Journal of Medicine and Biomedical Sciences*, *8*(4), 89-98. Retrieved from http://www.ijmbs.org

Abusnana, S., Abdi, S., Tagure, B., Elbagir, M., & Maleckas, A. (2015). Bariatric surgery outcomes: a single-center study in the United Arab Emirates. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, *18*(8), 461-471. doi:10.2147/DMSO.S87861

Al-Othaimeen, A. L., Nozha, M., & Osman, A. K. (2007). Obesity: An emerging problem in Saudi Arabia. Analysis of data from the National Nutrition Survey. *Eastern Mediterranean health journal*, *13*(2), 441-448. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/17684864

Al-Nozha, M. M., Al-Mazrou, Y. Y., Al-Maatouq, M. A., Arafah, M. R., Khalil, M. Z., Khan, N. B., & Nouh, M.S. (2005). Obesity in Saudi Arabia. *Saudi Medical Journal*, *26*(5), 824-829. Retrieved from http://www.smj.org.sa/

Alqahtani, A. R., Elahmedi, M. O., & Al Qahtani, A. (2014). Co-morbidity resolution in morbidly obese children and adolescents undergoing sleeve gastrectomy. *Surgery for Obesity and Related Diseases*, *10*(5), 842-850. doi:10.1016/j.soard.2014.01.020.

Al-Zalabani, A. H., Al-Hamdan, N. A., & Saeed, A. (2015). The prevalence of physical activity and its socioeconomic correlates in Kingdom of Saudi Arabia: A cross-sectional population-based national survey. *Journal of Taibah University Medical Sciences*, *10*(2), 208-215. doi:10.1016/j.jtumed.2014.11.001Journal

Alzaman, N., & Ali, A. (2016). Obesity and diabetes mellitus in the Arab world. *Journal of Taibah University Medical Science, 11*(4), 301-309. doi:10.1016/j.jtumed.2016.03.009

Amarasinghe, A., & D'Souza, G. (2012). Individual, social, economic, and environmental model: A paradigm shift for obesity prevention. *International Scholarly Research Notices, 2012*, 1-10. doi:10.5402/2012/571803

Amin, T. T., Al-Sultan, A. I., & Ali, A. (2008). Overweight and obesity and their association with dietary habits, and sociodemographic characteristics among male primary school children in Al-Hassa, Kingdom of Saudi Arabia. *Indian Journal of Community Medicine, 33*(3), 172-181. doi:10.4103/0970-0218.42058

Atkins, L., & Wallace, S. (2012). *Qualitative research methods*. Thousand Oaks, CA: Sage Publications.

Bar-Yam, Y. (2016). The limits of phenomenology: From behaviorism to drug testing and engineering design. *Complexity, 21*(S1), 181-189. doi:10.1002/cplx.21730

Becker, M. H., & Janz, N. K. (1984). The HBM: A decade later. *Health Education Quarterly, 11*(1), 1-47. doi:abs/10.1177/109019818401100101

Becker, M. H. (1974). The HBM and Sick Role Behavior. *Health Education Monographs, 2*(4), 409-419. Retrieved from https://www.ncbi.nlm.nih.gov/labs/journals/health-educmonogr/

Benamer, H. T., & Bakoush, O. (2009). Medical education in Libya: The challenges. *Medical Teacher Journal, 31*(6), 493–496. doi:10.1080/01421590902832988

Benjamin, K., & Donnelly, T. T. (2013). Barriers and facilitators influencing the physical activity of Arabic adults: A literature review. *Avicenna Journal, 2013*(1), 1-16. doi/pdf/10.5339/avi.2013.8

Bernard, H. R., & Ryan, G. W. (2010). Analyzing qualitative data: Systematic approaches. Thousand Oaks, CA: Sage.

Bishop, A. C., Baker, G. R., Boyle, T. A., & MacKinnon, N. J. (2014). Using the Health Belief Model to explain patient involvement in patient safety. *Health Expectations, 18*(6), 3019–3033. doi:10.1111/hex.12286

Bitsch, V. (2005). Qualitative research: A grounded theory example and evaluation criteria. *Journal of Agribusiness*, *23*(1), 75-91. Retrieved from https://agecon.uga.edu/journal-ofagribusiness.html

Callary, B., Rathwell, S., & Young, B. W. (2015). Insights on the process of using interpretative phenomenological analysis in a sport coaching research project. *The Qualitative Report, 20*(2), 63-75. Retrieved from http://nsuworks.nova.edu/tqr

Champion, V. L. (1984). Instrument refinement for breast cancer screening behaviors. *Advances in Nursing Science, 6*(3), 73-85. doi.org/10.1097/00012272-198404000-00011

Champion, V. L. (1993). Instrument refinement for breast cancer screening behaviors. *Nursing Research*, *42*(3), 139-143. doi. Retrieved https://www.ncbi.nlm.nih.gov/pubmed/8506161

Champion, V. L., & Menon, U. (1997). Predicting mammography and breast self-examination in African American women. *Cancer Nursing*, *20*(5), 315-322. doi:10.1097/00002820-199710000-00002

Champion, V. L., Ray, D. W., Heilman, D. K., & Springston, J. K. (2000). A tailored intervention for mammography among low-income African-American women. *Journal of Psychosocial Oncology*, *18*(4), 1-13. doi:10.1300/J077v18n04_01

Champion, V. L., & Skinner, C. S. (2008). The HBM. In K. Glanz., B. K. Rimer & K. Viswanath (Eds.), *Health behavior and health education*: *Theory, research, and practic*e (pp. 4665). San Francisco, CA: Jossey-Bass.

Chan, R. S., & Woo, J. (2010). Prevention of overweight and obesity: How effective is the current public health approach. *International Journal of Environmental Research and Public Health, 7*(3), 765-783. doi:10.3390/ijerph7030765

Chilisa, B., & Preece, J. (2005). *African perspective in adult learning: Research methods for adult educators*. Hamburg, German: UNESCO Institute of Education.

Cohen, M. Z., Kahn, D. L., & Steeves, D. L. (2000). *Hermeneutic phenomenological research: A practical guide for nurse practitioners*. Thousand Oaks, CA: Sage.

Country Economy. (2017). *Libya - Life expectancy at birth* . Retrieved from https://countryeconomy.com/demography/life-expectancy/libya

Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into Practice, 39*(3), 124-130. doi:10.1207/s15430421tip3903_2

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods Approaches* (4th ed.). Los Angeles, CA: Sage.

Daw, M. A., El-Bouzedi, A., & Dau, A. A. (2015a). Libyan armed conflict 2011: Mortality, Injury and population displacement. *African Journal of Emergency Medicine*, *5*(3), 101-107. doi.10.1016/j.afjem.2015.02.002

Daw, M. A., El-Bouzedi, A., & Dau, A. A. (2015b). The assessment of efficiency and coordination within the Libyan healthcare system during the armed conflict-2011.

Clinical Epidemiology and Global Health, *4*(3), 120-127. doi.org/10.1016/j.cegh.2015.07.004

Daw, M. A. (2017). Libyan healthcare system during the armed conflict: Challenges and restoration. *African Journal of Emergency Medicine, 7*(2), 47-50. doi:10.1016/j.afjem.2017.04.010

Denzin, N. K., & Lincoln, Y. S. (2017). *Sage Handbook of Qualitative Research* (5th ed.). Thousand Oaks, CA: Sage.

Eguaras, S., Toledo, E., Hernández, A., Cervantes, S., & González, M. A. (2015). Better adherence to the Mediterranean diet could mitigate the adverse consequences of obesity on cardiovascular disease: The SUN Prospective Cohort. *Nutrients Journal*, *7*(11), 9154–9162. doi:10.3390/nu7115457

Elabani, F. A., & Kure, J. (2015). Study the prevalence of overweight and obesity among Libyan children in relation to their socioeconomic level status and fast food meals. *Libyan Journal of Medical Research*, *9*(2), 4-14. Retrieved from http://www.ljmr.com.ly/

El-Fallah, M. B. (2014). *The development of the Libyan health system to improve the quality of the health services* (Doctoral dissertation). Retrieved from https://espace.mmu.ac.uk/326243

Elfituri, A. A., Elmahaishi, M. S., & MacDonald, T. H. (1999). The role of health education program within the Libyan community. *Eastern Mediterranean Health Journal*, *5*(2), 268 276. Retrieved from http://www.emro.who.int/emh-journal/eastern-mediterranean-health-journal/home.html

Elfituri, A. A., Elmahaishi, M. S., MacDonald, T. H., & Sherif, F. M. (2006). Health education in the Libyan Arab Jamahiriya: Assessment of future needs. *Eastern Mediterranean Health*

Journal, 12(2), 147-156. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/17361686

Elfituri, A. A., & Sherif, F. M. (2009). Health education practice in Libya; professional Opinions. *Asian Journal of University Education, 5*(2), 83-98. Retrieved from https://education.uitm.edu.my/ajue/wp-content/uploads/2019/04/Health-Education-Practice-in-Libya-Professional-Opinions-.pd

Elfituri, A. A. (2010). *Education for health: The Libyan model*. Retrieved from https://www.researchgate.net/publication/231133906_Education_for_Health_the_Libyan_Model

Elfituri, A., Kriem, F., Sliman, H., & Sherif, F. M. (2011). Education against HIV/AIDS. In Letamo, G (Ed.), *Social and psychological aspects of HIV/AIDS and their ramifications.* (pp.106-124). Retrieved from https://www.intechopen.com/books/social-andpsychological-aspects-of-hiv-aids-and-their-ramifications

Elkhammas, E. A., & Singh, N. (2010). Towards reforming healthcare services in developing countries: Taking Libya as an example. *Ibnosina Journal of Medicine and Biomedical Sciences, 2*(4), 149-151. Retrieved from http://www.ijmbs.org/aboutus.asp

Elmehdawi, R. R., & Albarsha, A. M. (2012). Obesity in Libya: A review. *Libyan Journal of Medicine, 7*(1), 1-5. doi:10.3402/ljm. v7i0.19086

El Oakley, R. M., Ghrew, M. H., Aboutwerat, A. A., Alageli, N. A., Neami, K. A., Kerwat, R., . . . Benamer, H. T. (2013). Consultation on the Libyan health systems: towards patientcentred services. *Libyan Journal of Medicine, 8*(1), 1-9. doi.10.3402/ljm. v8i0.20233

El Taguri, A., Elkhammas, E. M., Bakoush, O., N Ashammakhi, N., Baccoush, M., & Betilmal, I. (2008). Libyan national health services the need to move to management-by-objectives.

Libyan Journal of Medicine, *3*(2), 113–121. doi:10.4176/08030

Ezzati, M., Lopez, A. D., Rodgers, A., Hoorn, S. V., & Murray, C. L. (2002). Selected major risk factors and global and regional burden of disease. *The Lancet*, *360*(9343), 1347-1360. doi.org/10.1016/S0140-6736 (02)11403-6

Fanack. (2019). *Population of Libya*. Retrieved from https://fanack.com/libya/population/

Farrag, N. S., Cheskin, L. J., & Farag, M. K. (2017). A systematic review of childhood obesity in the Middle East and North Africa (MENA) region: Health impact and management. *Advances in Pediatric Research*, *4*(6), 1-13. doi:10.12715/apr.2017.4.6

Fatani, H. H., Mira, S. A., & El-Zubier, A. (1987). Prevalence of Diabetes Mellitus in Rural Saudi Arabia. *Diabetes Care*, *10*(2), 180-183. doi.org/10.2337/diacare.10.2.180

Fahed, A. C., El-Hage-Sleiman, A. K., Farhat, T. I., & Nemer, G. M. (2012). Diet, genetics, and disease: A focus on the Middle East and North Africa region. *Journal of Nutrition and Metabolism, 2012*, 1-19. doi: 10.1155/2012/109037

Frechtling, J. A., & Sharp, L. M. (1997). *User-friendly Handbook for Mixed Method Evaluations*. Retrieved from https://www.nsf.gov/pubs/2002/nsf02057/nsf02057.pdf 98.

French, J. (1990). Boundaries and horizons, the role of health education within health promotion. *Health Education Journal*, *49*(1), 7-9. doi.org/10.1177/001789699004900102

Gambino, C. P., Trevelyan, E. N., & Fitzwater, J. T. (2014). *The foreign-born population from Africa*: 2008–2012. Retrieved from https://www2.census.gov/library/publications/2014/acs/acsbr12-16.pdf

Gates, D. M., Succop, P., Brehm, B. J., Gillespie, G. L., & Sommers, B. D. (2008). Obesity and presenteeism: The impact of body mass index on workplace productivity. *Journal of Occupational and Environmental Medicine*, *50*(1), 39-45. doi: 10.1097/JOM.0b013e31815d8db2

Gonzalez, M., & Bes-Rastrollo, M. (2014). Dietary patterns, Mediterranean diet, and cardiovascular disease. *Current Opinion in Lipidology*, *25*(1), 20–26. doi:10.1097/MOL.0000000000000044

Greenwood, J. L., Murtaugh, M. A., Omura, E. M., Alder, S. C., & Stanford, J. B. (2008). Creating a clinical screening questionnaire for eating behaviors associated with Overweight and obesity. *The Journal of the American Board of Family Medicine*, *21*(6), 539- 48. doi:10.3122/jabfm.2008.06.070265.

Guba, E. G. (1981). Annual review paper: Criteria for assessing the trustworthiness of naturalistic inquiries. Educational communication and technology: *A Journal of Theory, Research and Development*, *29*(2), 75–91. doi.org/10.1007/BF02766777

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.

Guh, D. P., Zhang, W., Bansback, N., Amarsi, Z., Birmingham, L. B., & Anis, A. H. (2009). The incidence of co-morbidities related to obesity and overweight: A systematic review and meta-analysis. *BMC Public Health Journal*, *9*(88), 1-20. doi:10.1186/1471-2458-9-88

Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: When to use them and how to judge them. *Human Reproduction*, *31*(3), 498-501. doi:10.1093/humrep/dev334

Harrison, J. A., Mullen, P. D., & Green, L. W. (1992). A meta-analysis of studies of the health belief model with adults. *Health Education Research, 7*(1), 107-116. Retrieved from https://academic.oup.com/her

Hasnain, M., Menon, U., Ferrans, C. E., & Szalacha, L. (2014). Breast cancer screening practices among first-generation immigrant Muslim Women. *Journal of Women's Health, 23*(7), 602-612. doi:10.1089/jwh.2013.4569

Hassan, E. M., Hashad, L. A. K., & Hassan, M. I. (2016). Nutritional Status of School Children in Tripoli City, Libya 2012. *Journal of Food and Nutrition Research, 4*(4), 223-229. doi:10.12691/jfnr-4-4-5

Hefferon, K., & Gil-Rodriguez, E. (2011). Interpretative phenomenological analysis. *The Psychologist, 24*(10), 756–759. doi:10.1002/9781119975144.ch9

Heidegger, M. (1962). *Being and time* (*J. Macquarrie & E. Robinson, Trans*.). New York, NY: Harper and Row.

Hochbaum, G. M. (1958). *Public participation in medical screening programs*: *A socio-psychological study*. Department of Health Education and Welfare, PHS Publ no572. Washington, DC: US Government Printing Office.

Hubley, J. H. (1986). Barriers to health education in developing countries. *Health Education Research, 1*(4), 233–245. doi:10.1093/her/1.4.233

Human Rights Watch. (2019). *Libya: Events of 2018*. Retrieved from https://www.hrw.org/world-report/2019/country-chapters/libya

Hwalla, N., Nasreddine, L., & El Labban, S. (2017). *Cultural determinants of obesity in low- and middle-income countries in the Eastern Mediterranean region*. (IARC Working Group Report No. 10, chapter 8, p57-67). Retrieved from International Agency for Research on Cancer website: https://publications.iarc.fr/Book-And-Report-Series/Iarc-

Working-Group-Reports/Energy-Balance-And-Obesity-2017

Hweissa, N. A. B., Lim, J. N. W., & Su, T. T. (2016). Health-care providers' perceptions, attitudes towards and recommendation practice of cervical cancer screening. *European Journal of Cancer Care*, *25*(5), 864-870. doi.org/10.1111/ecc.12537

Jansen, H. (2010). The Logic of Qualitative Survey Research and its Position in the Field of Social Research Methods. *Forum Qualitative Social Research*, *11*(2), 1-21. doi.org/10.17169/fqs-11.2.1450

Janz, N. K., Champion, V. L., & Strecher, V. J. (2002). The health belief model. In K. Glanz, B., K. Rimer, & F. M. Lewis (Eds.), *Health behavior and health education*: Theory, research, and practice (3rd ed.) (pp.45-66). San Francisco, CA. Jossey-Bass.

Kahn, D. L. (2000). How to conduct research. In M. Z. Cohen, D. L. Kahn, & D. L. Steeves (Eds.). *Hermeneutic phenomenological research: A practical guide for nurse practitioners*. Thousand Oaks, CA: Sage.

Kasl, S. V., & Cobb, S. (1966). Health behavior, illness behavior, and sick-role behavior. Environmental Health, 12(4), 531-541. doi.org/10.1080/00039896.1966.10664421

Kasl, S. V. (1974). The Health Belief Model and behavior related to chronic illness. Health Education Monographs, 2(4), 433-454. Retrieved from https://www.ncbi.nlm.nih.gov/labs/journals/health-educ-monogr/

Khalil, W., & Tartour, M. (2017). Effect of health education intervention on improving compliance to treatment among hypertensive patients: application of health belief model. *Journal of Hypertension*, *35*(2), e16. doi:10.1097/01.hjh.0000523022.45839.02

Korn, M. (2014). The (Other) *Mediterranean diet*. Retrieved from https://www.yogajournal.com/lifestyle/mediterranean-diet

Kirscht, J. P. (1974). The Health Belief Model and Illness Behavior. *Health Education Monographs, 2*(4), 387-408. doi:10.2307/45240624

Kitahara, C. M., Flint, A. J., Berrington de Gonzalez, A., Bernstein, L., Brotzman, M., MacInnis, R. J., & Hartge, P. (2014). Association between class III obesity (BMI of 40-59 kg/m2) and mortality: A pooled analysis of 20 prospective studies. *PLOS Medicine*, *11*(7), e1001673. doi:10.1371/journal.pmed.1001673

Kudel, I., Huang, J. C., & Ganguly, R. (2018). Impact of obesity on work productivity in different US occupations: Analysis of the National Health and Wellness survey 2014 to 2015. *Journal of Occupational and Environmental Medicine, 60*(1), 6-11. doi:10.1097/JOM.0000000000001144.

Lakhdar, A. (2016). Healthcare systems framework for Libya: A challenging but achievable task. *Ibnosina Journal of Medicine and Biomedical Sciences, 8*(4), 127-129. Retrieved from http://www.ijmbs.org/

Lemamsha, H. A. A. (2016). *Exploring the risk and protective factors associated with obesity amongst Libyan adults* (*20 -65 years*) (Doctoral dissertation). Retrieved from http://uobrep.openrepository.com/uobrep/handle/10547/621840

Lemamsha, H., Papadopoulos, C., & Randhawa, G. (2018). Perceived environmental factors associated with obesity in Libyan men and women. *International Journal of Environmental Research and Public Health, 15*(2), 1-16. doi:10.3390/ijerph15020301

Lemamsha, H., Randhawa, G., & Papadopoulos, C. (2019). Prevalence of overweight and obesity among Libyan men and women. *BioMed Research International, 2019*, 1-16. doi:10.1155/2019/8531360

Levi, J., Segal, L., St. Laurent, R., & Rayburn, J. (2014). The state of obesity: Better policies for a healthier America. Trust for America's Health. Retrieved from http://www.rwjf.org/en/library/research/2014/09/the-state-of-obesity.html

Libyan Ministry of Health. (2017). *Information and documentation center*. Retrieved from http://seha.ly/en/news/

Liebig, S., Sauer, C., & Friedhoff, S. (2015). Using factorial surveys to study justice perceptions: Five methodological problems of attitudinal justice research. *Social Justice Research, 28*(4), 415-434. doi:10.1007/s11211-015-0256-4

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage.

Lobban, R. A., & Dalton, C. H. (2014). *Libya: History and revolution*. Praeger, CA: Santa Barbara.

Lopez, K., & Willis, D. (2014). Descriptive versus interpretative phenomenology: Their contributions to nursing knowledge. *Qualitative Health Research, 14*(5), 726-735. doi:10.1177/1049732304263638

Lub, V. (2015). Validity in qualitative evaluation: Linking purposes, paradigms, and perspectives. *International Journal of Qualitative Methods, 14*(5), 1-8. doi:10.1177/1609406915621406

Merriam, S. B., & Associates. (2002). *Qualitative research in practice: Examples for discussion and practice*. San Francisco, CA: Jossey-Bass.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.

Musaiger, A. O., & D'Souza, R. (2007). Nutritional profile of local and Western fast foods consumed in Bahrain. *Journal Ecology of Food and*

Nutrition, *46*(2), 143-161. doi:10.1080/03670240701328150

Musaiger, A. O. (2011). Overweight and obesity in Eastern Mediterranean region: Prevalence and possible cause. *Journal of Obesity, 2011*, 1-7. doi.org/10.1155/2011/407237

Musaiger, A. O., Al-Mannai, M., Tayyem, T., Al-Lalla, O., Ali, E. Y. H., Kalam, F., . . . Chirane, M. (2012). Prevalence of overweight and obesity among adolescents in seven Arab countries: A cross-cultural study. *Journal of Obesity, 2012*, 1-5. doi:10.1155/2012/98139

Musaiger, A. O., Al-Mannai, M., Al-Lalla, O., Saghir, S., Halahleh, I., Benhamed, M. M., . . . Ali, E. (2013). Obesity among adolescents in five Arab countries; relative to gender and age. *Nutrition Hospital Journal*, *28*(6), 1922-1925. doi:10.3305/nutr hosp. v28in06.6412

Northcutt, N., & McCoy, D. (2004). *Interactive qualitative analysis: A systems method for qualitative research*. Thousand Oaks, CA: Sage.

Olynk-Widmar, N. J., Byrd, E. S., Dominick, S. R., Wolf, C. A., & Acharya, L. (2016). Social desirability bias in reporting of holiday season healthfulness. *Preventive Medicine Reports, 4*, 270-276. doi:10.1016/j.pmedr.2016.06.01

Onwuegbuzie, A. J., & Leech, N. L. (2007). Validity and qualitative research: An oxymoron? *Quality and Quantity*, *41*(2), 233–249. doi:10.1007/s11135-006-9000-3

Oxley, L. (2016). An examination of Interpretative Phenomenological Analysis (IPA). *Educational & Child Psychology*, *33*(3), 55-62. Retrieved from http://www.bps.org.uk

Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Thousand Oaks, CA: Sage.

Pietkiewicz, I., & Smith, J. A. (2014). A practical guide to using interpretative phenomenological analysis in qualitative research psychology. *Psychological Journal, 20*(1), 7-14. doi:10.14691/CPPJ.20.1.7

Plecher, H. (2019). *Libya: Gross domestic product (GDP) in current prices from 1984 to 2024*. Retrieved from https://www.statista.com/statistics/455600/gross-domestic-product-gdp-in-libya/

Rawl, S. M., Champion, V. L., Menom, U., & Foster, J. L. (2000). The impact of age and race on mammography practices. *Health Care for Women International*, *21*(7), 583-597.doi. 10.1080/07399330050151833

Riggs, A. (2017). *Perceptions about overweight and obesity among college students*: *Application of the HBM* (Unpublished master's thesis). Appalachian State University, Boone, NC.

Roberts, C. M. (2010). *The dissertation journey: A practical and comprehensive guide to planning, writing, and defending your dissertation* (2nd ed.). Thousand Oaks, CA: Corwin.

Rodham, K., Fox, F., & Doran, N. (2015). Exploring analytical trustworthiness and the process of reaching consensus in interpretative phenomenological analysis: Lost in transcription. *International Journal of Social Research Methodology*, *18*(1), 59-71. doi:10.1080/13645579.2013.852368

Rosenstock, I. M. (1974a). The health belief model and preventive health behavior. *Health Education Monographs*, *2*(4), 354-386. doi.org/10.1177/109019817400200405

Rosenstock, I. M. (1974b). Historical origins of the HBM. *Health Education Monograph*, *2*(4), 328-335. doi: 10.1177/109019817400200403

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the

HBM. *Health Education Quarterly, 15*(2), 175-183. doi: 10.1177/109019818801500203

Salam, A. A., El-Amari, M., & Lathwal, O. P. (2013). Health system development and mortality transitions in Libya. *Middle East Journal of Family Medicine, 11*(4), 30-39. Retrieved from http://www.mejfm.com/index_home.htm

Scheff, T. (2011). The catastrophe of scientism in social/behavioral science. *Contemporary Sociology, 40*(3), 264-268. doi:10.1177/0094306110404513

Sharma, M., & Romas, J. A. (2012). *Theoretical foundations of health education and health promotion* (2nd ed.). Sudbury, MA: Jones & Bartlett Learning.

Sheriff, D. S. (2016). A Perspective on childhood obesity in general and Libya in particular. *Asian Journal of Pharmacy, Nursing and Medical Sciences, 4*(5), 52-64. Retrieved from https://ajouronline.com/index.php/AJPNMS

Siddiqui, T. R., Ghazal, S., Bibi, S., Ahmed, W., & Sajjad, S. F. (2016). Use of the Health Belief Model for the assessment of public knowledge and household preventive practices in karachi, Pakistan, a Dengue-Endemic City. *PLOS Neglected Tropical Diseases*, *10*(11), 1-15. doi:10.1371/journal.pntd.0005129

Smith, J. A. (1996). Beyond the divide between cognition and discourse: Using interpretative phenomenological analysis in health psychology. *Psychology & Health, 11*(2), 261-271. doi:10.1080/0887044960840025

Smith, J. A., Jarman, M., & Osborn, M. (1999). Doing interpretative phenomenological analysis. In M. Murray, & K. Chamberlain (Eds.), *Qualitative health psychology: Theories and methods* (pp. 218-240). Thousand Oaks, CA: Sage.

Smith, J. A. (2004). Reflecting on the development of interpretative phenomenological analysis and its contribution to qualitative research in psychology. *Qualitative Research in*

Psychology, 1(1), 39-54. doi:10.1191/1478088704qp004oa

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method, and research*. London, England: Sage.

Sullivan, R., McQuinn, B., & Purushotham, A. (2011). How are we going to rebuild public health in Libya? *Journal of the Royal Society of Medicine, 104*(12), 490-492. doi/10.1258/jrsm.2011.110230

Szajewska, H., & Ruszczynski, M. (2010). Systematic review demonstrating that breakfast consumption influences body weight outcomes in children and adolescents in Europe. *Critical Reviews in Food Science and Nutrition*, *50*(2), 113-9. doi:10.1080/10408390903467514.

Tamtam, A., Gallagherb, F., Olabic, A. G., & Naherd, S. (2011). Higher education in Libya, system under stress. *Procedia-Social and Behavioral Sciences, 29*, 742–751. Retrieved fromhttps://www.journals.elsevier.com/procedia-social-and-behavioral- sciences/

Toselli, S., Gualdi-Russo, E., Boulos, D. N., Anwar, W. A., Lakhoua, C., Jaouadi, I., . . . Hemminki, K. (2014). Prevalence of overweight and obesity in adults from North Africa. *European Journal of Public Health*, *1*(3), 1-9. doi:10.1093/eurpub/cku103.

United States Institute of Peace. (2018). *The current situation in Libya: A USIP fact sheet*. Retrieved from https://www.usip.org/publications/2018/04/current-situation-libya

Waters, E., de Silva-Sanigorski, A., Hall, B. J., Brown, T., Campbell, K. J., Gao, Y., . . . Summerbell, C. D. (2011). Interventions for preventing obesity in children. *The Cochrane database of systematic reviews*, *12*, 1-212. doi:10.1002/14651858

World Health Organization. (2011). *Libya health situation reports*. Retrieved from http://www.who.int/hac/crises/lby/sitreps/en/

World Health Organization. (2015a). *Country cooperation strategy for WHO and Libya*: 2010–2015. Retrieved from http://apps.who.int/iris/handle/10665/113220

World Health Organization. (2015b). *Health profile 2015, Libya*. Retrieved from http://applications.emro.who.int/dsaf/EMROPUB_2017_EN_19620.pdf

World Health Organization. (2016). *Commission on ending childhood obesity*. Retrieved from https://www.who.int/end-childhood-obesity/en/

World Health Organization. (2017a). *Libya health situation reports*. Retrieved from http://www.who.int/hac/crises/lby/sitreps/en/

World Health Organization. (2017b). *Proposed policy priorities for preventing obesity and diabetes in the Eastern Mediterranean Region*. Retrieved from http://applications.emro.who.int/docs/emropub_2017_20141.pdf

World Health Organization. (2019). *Health education*. Retrieved from https://www.who.int/topics/health_education/en/

Worthen, V. E. (2002). Phenomenological research and the making of meaning. In S. Merriam & Associates, *Qualitative research in practice: Examples for discussion and analysis* (1st ed.; pp. 139-141). San Francisco, CA: Jossey-Bass.

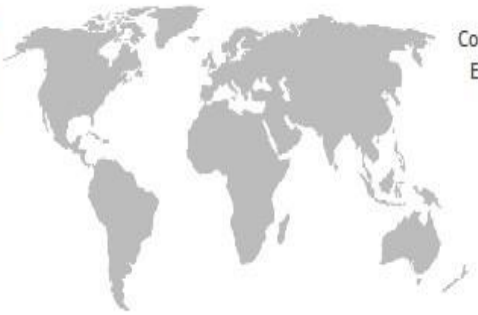
Yin, R. K. (2003). *Case study research design and methods* (3rd ed.). Thousand Oaks, CA: Sage.

Yue, Z. J., Chen, Y., & Wang, S. M. (2014). Health belief model-based evaluation of school health education programme for injury prevention among high school students in the community context. *Biomedical Public Health*, *14*(1), 1-15. doi:10.1186/1471-2458-14 26

Appendices

Appendix A: CITI Training Certificate

CITI PROGRAM



Completion Date 25-Oct-2018
Expiration Date 24-Oct-2021
Record ID 29211291

This is to certify that:

abubaker Elrashid

Has completed the following CITI Program course:

GCP – Social and Behavioral Research Best Practices for Clinical Research (Curriculum Group)
GCP – Social and Behavioral Research Best Practices for Clinical Research (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of West Florida

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w86a2dce6-d40c-42a0-a34a-e400e114adbc-29211291

Appendix B: Permission to use GPAQ questionnaire

UNIVERSITY of WEST FLORIDA
STUDENTS

Abubaker Elrashid <ame32@students.uwf.edu>

Permission

2 messages

Abubaker Elrashid <ame32@students.uwf.edu> Thu, Apr 4, 2019 at 4:09 PM
To: steps@who.int

Dear Madam, sir
I hope this email finds you well. I am contacting you with the hope of obtaining permission to use (print) the questionnaire of "Global Physical Activity Questionnaire (GPAQ) Analysis Guide" in my doctoral dissertation. I am at University of West Florida doctoral student in the proposal stage of writing my dissertation, perceptions of Libyan immigrants in the United States on obesity prevention in Libya under the direction of Drs. Barrington, Malisa, and Wirth my doctoral dissertation committee members.

Permission to use and print your survey is requested with the following conditions to be strictly upheld:

- The sole purpose is for my dissertation, no selling or exchanging for compensation;
- Copyright statement provided on the survey; and
- Completed dissertation copy provided to you.

If you agree with the aforementioned terms and conditions or have any questions, please indicate so through email (ame32@students.uwf.edu)

Sincerely,
Abubaker Elrashid

Expected date of completion: August 2019

steps <steps@who.int> Mon, Apr 8, 2019 at 4:41 AM
To: Abubaker Elrashid <ame32@students.uwf.edu>

Dear Abubaker,

The GPAQ is in the public domain and free for anyone to use.

Good luck with your studies,

The STEPS team

[Quoted text hidden]

Appendix C: Permission to use CCSQ questionnaire

UNIVERSITY of WEST FLORIDA
STUDENTS

Abubaker Elrashid <ame32@students.uwf.edu>

Permission

2 messages

Abubaker Elrashid <ame32@students.uwf.edu> Thu, Apr 4, 2019 at 3:59 PM
To: jessica.greenwood@hsc.utah.edu

April 4, 2019

Dr. Jessica Greenwood
Department of Family and Preventive Medicine
University of Utah,
Dr. Greenwood:

I hope this email finds you well. I am contacting you with the hope of obtaining permission to use (print) the questionnaire of "Creating a Clinical Screening Questionnaire for
Eating Behaviors Associated with Overweight and Obesity, 2008" in my doctoral dissertation. I am a University of West Florida doctoral student in the proposal stage of writing my dissertation, perceptions of Libyan immigrants in the United States on obesity prevention in Libya under the direction of Drs. Barrington, Malisa, and Wirth my doctoral dissertation committee members.

Permission to use and print your survey is requested with the following conditions to be strictly upheld:

- The sole purpose is for my dissertation, no selling or exchanging for compensation;
- Copyright statement provided on the survey; and
- Completed dissertation copy provided to you.

If you agree with the aforementioned terms and conditions or have any questions, please indicate so through email (ame32@students.uwf.edu)

Sincerely,
Abubaker Elrashid

Expected date of completion: August 2019

Jessica Jones <Jessica.L.Jones@utah.edu> Fri, Apr 5, 2019 at 12:02 AM
To: Abubaker Elrashid <ame32@students.uwf.edu>

Abubaker,

Please feel free to use the questionnaire. I hope it is helpful. Good luck with your research!

Jessica

Please excuse any typos.
Sent from my T-Mobile 4G LTE device
[Quoted text hidden]

Appendix D: IRB Approval

Mr. Abubaker Elrashid May 10, 2019

University of West Florida
Research and Sponsored Programs
11000 University Parkway, Bldg. 11
Pensacola, FL 32514-5750

Dear Mr. Elrashid:

The Institutional Review Board (IRB) for Human Research Participants Protection has completed its review of your proposal number IRB 2019-193 titled, "Perceptions of Libyan immigrants in the United States on obesity prevention in Libya," as it relates to the protection of human participants used in research, and granted approval for you to proceed with your study on 04-18-2019. As a research investigator, please be aware of the following:

* You will immediately report to the IRB any injuries or other unanticipated problems involving risksto human participants.

* You acknowledge and accept your responsibility for protecting the rights and welfare of human research participants and for complying with all parts of 45 CFR Part 46, the UWF IRB Policy and Procedures, and the decisions of the IRB. You may view these documents on the Research and Sponsored Programs web page a http://research.ut . Ywou acknowledge completion of the IRB ethical training requirements for resef.ed archers as attested in the IRB application.

* You will ensure that legally effective informed consent is obtained and documented. If written consent is required, the consent form must be authorized representative. A copy is to be given to the person signed by the participant or the participant's legallysigning the form and a copy kept for your file.

* You will promptly report any proposed changes in previously approved human participant research activities to Research and Sponsored Programs. The proposed changes will not be initiated withoutIRB review and approval, except where necessary to eliminate apparent immediate hazards to the participants.

* **You are responsible for reporting progress of approved research to Research and Sponsored Programs at the end of the project period . If the data phase of your project continues beyond the approved end date, you must receive an extension approval from the IRB.**

* If using electronic communication for your study, you will first obtain approval from the authority listed on the following web page: https://uwf.edu/offices/institutional-communications/resources/broadcas/t.- distribution-standards

Mark C. Schaffer Carla J. Thompson

Good luck in your research endeavors. If you have any questions or need assistance, please contactResearch and Sponsored Programs at 850-857-6203. or irb@uwf.edu

Sincerely,

Dr. Matthew Schwartz, Interim Assistant Vice PresidentResearch Administration
Human Research Participant ProtectionDr. Carla Thompson, Chair, IRB for

10-10-2019

Phone 850.474.2824 Fax 850.474.2802
Web research.uwf.edu
An Equal Opportunity/Equal Access/Affirmative Action Employer

University of West Florida

Research and Sponsored Programs
11000 University Parkway, Bldg. 11
Pensacola, FL 32514-5750

MEMORANDUM

June 27, 2019

TO: **Mr. Abubaker Elrashid**
Exercise Science and Community Health

FROM: Dr. Matthew Schwartz, Interim Assistant Vice President Research Administration

Dr. Carla Thompson, Chair, IRB for Human Research Participant Protection

SUBJECT: IRB Modification Approval

Thank you for keeping us apprised of the progress made on your project titled "IRB 2019-193, Perceptions of Libyan immigrants in the United States regarding obesity prevention in Libya." The IRB has approved your request to modify your project based on the recently submitted application.

The IRB has approved your request based on the recently submitted modification with the following conditions: .

Continued good luck in your research!

Appendix E: Qualitative Research Questionnaire

Phone 850.474.2824 Fax 850.474.2082

Qualitative Research Questionnaire

Section 1: Demographic and socio-economic characteristics and

Questions	Response
1- Age Group	20-29; 30-39; 40-49; 50-59; 60-69
2- Sex	Male Female
3- How long have you been in the United States?	Month Years
4- What is your marital status?	
5- What is the highest level of education you have completed?	1-No formal schooling. 2- Less than primary school.3- Primary school completed. 4- Secondary school completed. 5- High school completed. 6- College/ university completed. 7- Postgraduate degree. 8- Refused
6- Which the following is best describes your main work when you were in Libya?	Government employee. Non-government employee. Selfemployed. Non-paid. Student. Housework. Retired. Unemployed (able to work). Unemployed (unable to work). Refused.
7- Participant's anthropometric body measurements	Height (Feet) Body Mass Index (IBM) Wight (Ib)

Section 2: Eating behavior

Type of Question	**Questions**	**Response**
1- Restaurant and food	• How many times do you eat at a restaurant or fast food when you were in Libya? • How many times do you typically eat at a restaurant or fast food in one week when you were in Libya?	Times 0 1 2 3 4 5 6 or more 0 1 2 3 4 5 6 or more
2- Beverage with sugar added	• How many times do you drink juice (e.g., orange juice, apple juice, Sunny Delight) when you were in Libya? • How many cans of non-diet soda pop do	0 1 2 3 4 5 6 or more 0 1 2 3 4 5 6 or more

	you drink (e.g. Coke, Pepsi) past in Libya? • How many times do you typically drink juice in one day (e.g. orange juice, apple juice, Sunny Delight) when you were in Libya?	
	• How many cans of non-diet soda pop do you typically drink in one day (e.g., Coke, Pepsi, Sprite) when you were in Libya?	0 1 2 3 4 5 6 or more
3- Fruits & vegetables	• How many times do you eat vegetables (e.g., broccoli, spinach, greens, salad, etc.) when you were in Libya?	0 1 2 3 4 5 6 or more
4- Breakfast	• How many times do you eat fresh fruit (e.g., an apple, an orange, a handful of grapes, etc.) when you were in Libya? • How many times do you typically eat the fruit in one day (e.g., broccoli, spinach, greens, salad, etc.) when you were in Libya? • How many times typically do you eat fresh fruit in one day (e.g., an apple, an orange, a handful of grapes, etc.) when you were in Libya?	0 1 2 3 4 5 6 or more 0 1 2 3 4 5 6 or more 0 1 2 3 4 5 6 or more

	• How many times do you typically eat breakfast in one week when you were in Libya?	0 1 2 3 4 5 6 or more
5- Portion size	• When eating food at a restaurant, do you eat all the food served to you at one sitting when you were in Libya?	Never, Rarely, Occasionally, Sometimes, Often, Usually, Always

Section 3: Physical activities and sedentary behavior

Next, I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person. Think first about the time you spend doing work. Think of work as the things that you have to do, such as paid or unpaid work, study/training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

Part 1: Job-related physical activities	**Response**
1- Does your work involve activity of vigorous intensity that causes large increases in breathing or heart rate, like carrying or lifting heavy loads, digging, or construction work, for at least 10 minutes continuously when you were in Libya?	Yes No If No, skip to Q4.
2- In a typical week, how many days you do activities of vigorous intensity as part of your work in Libya?	Number of days
3- How much time do you spend doing activities of vigorous intensity at work on a typical day when you were in Libya?	Hours Minutes

4- Does your work involve activity of moderate intensity that causes small increases in breathing or heart rate, such as brisk walking or carrying light loads, for at least 10 minutes continuously when you were in Libya?	Yes No If No, skip to part 2 Q1.
5- In a typical week, on how many days do you do activities of moderate intensity at work on a typical day when you were in Libya?	Numbers of days
6- How much time do you spend doing activities of moderate intensity at work on a typical day when you were in Libya?	Hours Minutes
Part 2: Transportation: Travel to and from destinations. *The next questions exclude the physical activities at work that you have already mentioned. Now I would like to ask you about the usual way you travel to and from places. For example, to work, for shopping, to market, to a place of worship.*	**Response**
1- Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get and from a place when you were in Libya?	Yes No, if no, skip to part 3 Q1.
2- In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get and from places when you were in Libya?	Number of days
3- How much time do you spend walking or bicycling for travel on a typical day when you were in Libya?	Hours Minutes
Part 3: Recreational activities. *The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure),*	**Response**

1- Do you do any sports, fitness or recreational (leisure) activities of vigorous intensity that cause large increases in breathing or heart rate such as running or football, for at least 10 minutes continuously when you were in Libya?	Yes No, if no, skip to Q4
2- In a typical week, how many days do you do sports, fitness, or recreational (leisure) activities of vigorous intensity when you were in Libya?	Number of days
3- How much time do you spend doing sports, fitness, or recreational activities of vigorous intensity on a typical day when you were in Libya?	Hours Minutes
4- Do you do any sports, fitness, or recreational (leisure) activities of moderate-intensity that cause a small increase in breathing or heart rate, such as brisk walking, cycling, swimming, volleyball, for at least 10 minutes continuously when you were in Libya?	Yes No, if No, skip t part 4 Q1.
5- In a typical week, how many days do you do sports, fitness, or recreational activities of intensity when you were in Libya?	Number of days
6- How much time do you spend doing sports, fitness, or recreational activities of moderate intensity on a typical day when you were in Libya?	Hours Minutes
Part 4: Sedentary behavior. *The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in a car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.*	**Response**

1- How much time do you usually spend sitting or reclining on a typical day when you were in Libya?	Hours Minutes

Section 4: Health education	
Have you received health education regarding obesity in Libya?	Yes No
Have you made changes to your lifestyle to prevent obesity in Libya?	Yes, if yes answer next questions No
What caused you to make changes in your lifestyle in Libya?	Health information Friend others
Sources of health education information	Mass media Teacher Doctors Friend

Appendix F: Consent Form for Qualitative Research Questionnaire

Consent Form

Title of Research: The Barriers to Obesity Prevention or Elimination in Libya: A Phenomenological Analysis
Researcher: Abubaker Elrashid

You are being asked to participate in research. For you to be able to decide whether you want to participate in this project, you should understand what the project is about, as well as the possible risks and benefits to make an informed decision. This process is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks. It also explains how your personal information will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to sign it. This signature will allow your participation in this study. You should receive a copy of this document to take with you.

Explanation of the Study

This study is being done to understand better the perceptions of Libyan immigrants in the United States of inadequate health education on obesity prevention in Libya before they moved to the U.S.
If you agree to participate, you will be asked to participate in this preliminary questionnaire. Your participation in the study will be answering this **preliminary questionnaire**.

Risks and Discomforts if you are uncomfortable answering a particular question, you can refuse to answer the question. Additionally, you can withdraw from the study at any time. Only the investigator will have access to the data collected from this preliminary questionnaire. Although a pseudonym will be used to protect your identity, the personal information you provide may reveal your identity to anyone reading this preliminary questionnaire /or this dissertation.

Benefits

This study is essential to science/society because it will show the health education impact of obesity prevention and promotion of health behaviors among Libyans before they moved to the U.S.

Confidentiality and Records

The information you generate in support of this study will be stored electronically in an encrypted format that only the researcher can access. Any printed or handwritten materials will be scanned for inclusion in this encrypted electronic file and then destroyed. Following current research practices, data from this study will be destroyed after this study is completed, and no personally identifying information (such as student names) will be included in any report or presentation of data.

Compensation

No compensation

Contact Information

If you have any questions regarding this study, please contact the researcher, Abubaker Elrashid(ame32@students.uwf.edu)or the chair of this dissertation committee, Dr. Patricia Barrington (pbarrington@uwf.edu)

If you have any questions regarding your rights as a research participant, please contact, the institutional Review Board University of West Florida, (850) 474-2824.

By signing below, you are agreeing that:

- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered
- you have been informed of potential risks, and they have been explained to your satisfaction.
- you understand the University of West Florida has no funds set aside for any injuries you might receive as a result of participating in this study
- you are 18 years of age or older
- your participation in this research is completely voluntary
- you may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled.

Signature_____ Date

Printed Name_____

Version Date: [March 2016]

Appendix G: Interview Protocol

Interview Protocol

RQ1: What do select U.S. Libyan immigrants perceive as the barriers to healthy eating to prevent or eliminate obesity in Libya?

1. What do you think about the eating habits of Libyans?
2. What do you think about the portion size of food Libyans consume?
3. What do you think about the quality of food Libyans consume?
4. What do you know about obesity in Libya?
5. How would you change your eating habits if you realized they made you vulnerable to obesity?
6. Would you spend more money on healthy eating to prevent or reduce obesity?
7. What is your level of awareness about healthy eating as a way to prevent or eliminate obesity in Libya?
8. How did you receive education on healthy eating as a way to prevent or eliminate obesity?

RQ2: What do select U.S. Libyan immigrants perceive as the barriers to physical activity to prevent or eliminate obesity in Libya?

9. What do you think about the exercising habits of Libyans?
10. What are some of the factors that make it difficult for Libyans to engage in physical activities?
11. How would you change your lifestyle to include exercising if you realized physical activity reduces your vulnerability to obesity?
12. Would you make time to engage in physical activities to prevent or reduce obesity?

13. What is your level of awareness about physical activities as a way to prevent or eliminate obesity in Libya?
14. How did you receive education on physical activities as a way to prevent or eliminate obesity?

Appendix H: Consent Form for Interviews Questions

Consent Form

Title of Research: The Barriers to Obesity Prevention or Elimination in Libya: A Phenomenological Analysis
Researcher: Abubaker Elrashid

You are being asked to participate in research. For you to be able to decide whether you want to participate in this project, you should understand what the project is about, as well as the possible risks and benefits to make an informed decision. This process is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks. It also explains how your personal information will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to sign it. This signature will allow your participation in this study. You should receive a copy of this document to take with you.

Explanation of the Study

This study is being done to understand better the perceptions of Libyan immigrants in the United States of inadequate health education on obesity prevention in Libya before they moved to the U.S.
If you agree to participate, you will be asked to participate in **the interviews** for one day. Your participation in the study will be one day and will sect follow-up interviews take place in one week.

Risks and Discomforts

if you are uncomfortable answering a particular question, you can refuse to answer the question. Additionally, you can withdraw from the study at any time. Only the investigator will have access to the data collected from the interview(s). Although a pseudonym will be used to protect your identity, the personal information you provide may reveal your identity to anyone reading the transcript and/or this dissertation.

Benefits

This study is essential to science/society because it will show the health education impact of obesity prevention and promotion of health behaviors among Libya before they moved to the U.S.

Confidentiality and Records

The information you generate in support of this study will be stored electronically in an encrypted format that only the researcher can access. Any printed or handwritten materials will be scanned for inclusion in this encrypted electronic file and then destroyed. Following current research practices, data from this study will be destroyed after this study is completed, and no personally

identifying information (such as student names) will be included in any report or presentation of data.

Compensation

No compensation

Contact Information

If you have any questions regarding this study, please contact the researcher, Abubaker Elrashid(ame32@students.uwf.edu)or the chair of this dissertation committee, Dr. Patricia Barrington (pbarrington@uwf.edu)
If you have any questions regarding your rights as a research participant, please contact, the Institutional Review Board University of West Florida, (850) 474-2824.

By signing below, you are agreeing that:

- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered
- you have been informed of potential risks, and they have been explained to your satisfaction.
- you understand the University of West Florida has no funds set aside for any injuries you might receive as a result of participating in this study
- you are 18 years of age or older
- your participation in this research is completely voluntary
- you may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you and you will not lose any benefits to which you are otherwise entitled.

Signature_____ Date

Printed Name_____