

University of Nevada, Reno

Chronic Diseases in Occupied Palestinian Territory

A thesis submitted in partial fulfillment of the
requirements for the degree of
Master of Science in Nursing

by

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May, 2014



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We recommend that the thesis
prepared under our supervision by

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entitled

Chronic Diseases In Occupied Palestinian Territory

be accepted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN NURSING

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Abstract

The study explored the relationship between demographic, socio-economic characteristics and the prevalence of diabetes, hypertension, cardiovascular diseases, and health promoting behaviors within the Palestinian populations' living in Occupied Palestinian Territory (oPT). This analysis study used secondary data from the Palestinian Central Bureau of Statistics. Gender was found to be associated with having hypertension and diabetes mellitus; being a refugee was associated with being a smoker and having insufficient income. Correlation of age with hypertension, diabetes and cardiovascular disease, yielded a positive association. As chronic disease epidemics gather pace in Palestine and threaten harm to individuals, families, and the society at large, a comprehensive strategy for risk factor prevention and control is needed moving the health policy's from contemplation to action.

Acknowledgement

I would like to thank all the committee members that participated in making this thesis possible. It is not possible to not credit my advisor Dr. Glenn Hagerstrom for his continuous guidance, assistance and support during every step of the research. Special thanks go to the Professor Rita Giacaman for her outstanding cooperation.

I am also grateful for my brother Sami Ghanem, who communicated with me throughout the writing process and whose technical support kept me going. Finally, this thesis was completed by the endless love and support of my husband Roger. I will never be able to express adequately the encouragement he provides.

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KEY TO ABBREVIATIONS

ICPH	Institute of Community and Public Health
MoH	Ministry of Health
oPt	Occupied Palestinian Territory
PCBS	Palestinian Central Bureau of Statistics
UNRWA	United Nations Relief and Works Agency
WHO	World Health Organization

Chapter I

Introduction

The Palestinian population, which has reached almost four million, lives in two separated areas: the West Bank (WB) and the Gaza Strip (GS) (Palestinian Health Information Center: Health Annual Report, 2009). It is a young population, with 46% under the age of 15, and 40% of the population being female who are of reproductive age (Economic and Social Commission for Western Asia: 2006–2009). Despite the young age of this population, chronic diseases are a major health concern in the occupied Palestinian Territory (oPT). There has been a drastic increase in chronic diseases such as cardiovascular disease, diabetes mellitus, and cancer, which has alerted the interest of epidemiologists (Husseini, 2009). It is suspected that the chronic war-like conditions generated high levels of poverty, decreased higher education, and has worsened unemployment. These factors could have contributed to decreased emphasis on access to healthcare, as well as health promotions (Giacaman, et al, 2009; World Health Organization- Regional Office for the Eastern Mediterranean: Health System Profile – Palestine; 2006).

Palestinians live in a state of poverty. Their lack of financial resources limits their access to healthcare. In 2010, the per capita health expenditure from all sources was 282 US Dollars, equivalent to 13.7% of Gross Domestic Product (GDP) (Palestinian Central Bureau of Statistics: Primary Results of the National Health Accounts in the Palestinian Territories, 2010). Government medical insurance and households have contributed respectively 36% and 41% of total health expenditure (Palestinian Central

Bureau of Statistics: Primary Results of the National Health Accounts in the Palestinian Territories, 2010). In turn, the instability of the political structure, as well as the combative state of the nation, restricts the ability of the Palestinian local government to fund the healthcare system. This complex socio-political condition created a need for donors like Non-Governmental Organizations (NGO's). Although these organizations are well intended, their assistance alone is not sufficient protection from the expensive out of pocket payments that Palestinians must contend for health care (World Health Organization- Regional Office for the Eastern Mediterranean: Health System Profile – Palestine, 2006, Abu-Zaineh M, et al, 2009).

The elderly make up 4.4 percent (4.8% in the West Bank and 3.7% in Gaza Strip) of the total Palestinian population and are mostly unemployed, specifically having no job or working for an unpaid family business. This population does not have a fully functioning social welfare system, leaving the elderly depending on the immediate family to cover their financial needs. The Palestinian government does not have laws of provisions for older adults in terms of rights, benefits, pensions, subsidies or allowances (Abu Khader, K & Zeidani, M. (2013), and the Palestinian Ministry of Social Affair (MOSA) provides simple humanitarian assistance with commodities and financial support for seriously poor elderly (US \$90, every three months). Only 3% of the elderly have financial support from the local government and the rest are the responsibility of their children. This can be a huge economic burden on the families (United Methodist Women Resources, 2013). Furthermore, this 22% of the elderly are living in poor conditions alone or within the extended family household context. (United Methodist Women Resources, 2013, Abu Khader & Zeidani, 2013).

During the long time of unrest and chronic war, Palestinians in the (oPT) became eligible to receive governmental health insurance (GHI), which also serves as the basis for future social health insurance (SHI). It provides the beneficiaries access to low cost services in governmental health care, and to services provided by selected contracted NGOs. Despite these considerable low cost services, there is still a significant population who cannot afford the co-payments and therefore have no health insurance. Although GHI covers inpatient and outpatient provider fees, it often fails to provide vital basic, hypertension, diabetic or cardiovascular medications. Furthermore, the GHI does not have all the needed healthcare specialties to address chronic diseases and tertiary care, with no substitute access to advance and complex treatments (World Health Organization- Regional Office for the Eastern Mediterranean: Health System Profile – Palestine, 2006, Abu-Zaineh M, et al, 2009). Even Palestinians, who have GHI or access to (NGO's) health benefits, still must make relatively high co-payments relatively to the average monthly income for a Palestinian family, which is \$1,737. For instance, the average co-pay's 5.4 US Dollars at governmental facilities, 32.3 US Dollars at NGOs facilities, and reaching as high as 43.5 US Dollars at private health care facilities (Hamdan M, Defever M, Abdeen Z, 2009).

For the past six decades, the political and socio-economic dilemmas of the Palestinian life made the healthcare system face important challenges in providing adequate services to its population (Abu-Mourad, et al' 2008). The Palestinian Health service provision is inadequate, is subject to sudden discontinuation at any time of extreme political unrest, and it does not have a substitute plan to address the people's needs efficiently in such situation. The political and social instability have caused the

healthcare system to evolve in a very incomplete manner to include four main service providers: the Ministry of Health (MoH), nongovernmental organization (NGOs), the United Nations, Relief and Work Agency for Palestinian Refugees (UNRWA) which is specifically targeting exclusively Palestinian refugees, and private health providers.

Although considering the health insurance coverage indicators are quite good, the serious concern remains on the quality of healthcare service provision in the country (Giacaman, 2009).

In light of this recent interest by the epidemiologists of the healthcare system and how it handle the chronic diseases profile, researchers have started to explore the factors affecting people's health and access to use health services. The country policy makers have not been making changes, and they have not been communicating officially with the epidemiologists to address these health problems (Abu-Mourad, 2008).

One quantitative study in the Gaza Strip (GS) were conducted about chronic diseases (Abu-Mourad, 2008), but no other systematic assessment of people's health seeking behavior has been done in the oPT, and there are no studies that have been conducted in the oPT to explore the barriers to promoting health and healthy behaviors. Several studies have revealed that the complex Palestinian context yields a remarkable effect on overall health (Rahim HFA, 2009). Palestinians are affected by the challenging living conditions, and the socio-cultural norms and attitudes that affect their well being and quality of life (Rahim HFA, 2009, Economic and Social Commission for Western Asia: Social and Economic Conditions of Palestinian Women 2006–2009).

Purpose of the study

The purpose of this study is to explore the relationship between Palestinian demographic and socioeconomic factors and chronic diseases.

The researcher will be using existing data sets to describe the influence of demographic, socio-economic characteristics on health status of the Palestinian people. The six research questions are formed to delineate the presence or absence of hypertension, diabetes mellitus, cardiovascular disease, smoking prevalence, involvement of regular physical activity, and illustration of the dietary habits with multiple independent variables including, age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, tobacco smoking, dietary habits, and physical activity.

Research Questions

Research Question One. Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, tobacco smoking, dietary habits, physical activity; and hypertension within Palestinian Population?

Research Question Two. Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, tobacco smoking, dietary habits, physical activity; and cardiovascular disease within Palestinian population?

Research Question Three. Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, dietary habits, physical activity; and diabetes mellitus within Palestinian population?

Research Question Four. Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage; and smoking habits within Palestinian population?

Research Question Five. Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage; and dietary habits within Palestinian population?

Research Question Six. Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage; and, physical activity within Palestinian population?

There are many different types of Palestinian living experiences, which cannot all be clustered into one narrated chapter. To this end, my research employs an analytical ground on several key factors that facilitate an approach to identify the demographic and sociocultural influences that are fundamentally affected the population health outcomes.

Chapter II

Country Background

The number of Palestinians all over the world has reached 11 million, in which less than half (4.2 million) lives in the occupied Palestinian territory. Palestinians are divided into three separate communities. The first community of the Palestinians lives in West Bank; those living in the Gaza Strip are the second community, where two million live in Gaza as refugees, the majority of them still living in camps. Reports from 2013 of Palestinians refugee status by the United Nations showed that the percentage of Palestinian refugees in Palestine was 42.1% of the total population, 27% of them living in West Bank. The same report continues to present the percentage of poor households in refugee camps, which is more than non-refugees, and unemployment rate of Palestinian refugees of 15 years and over in 2012 was 27.9% compared to 19.8% for non-refugees. Finally the third Palestinian community, lives in Israel state and are under Israeli laws and regulations (Palestinian National Authority - Ministry of Health; 2010).

The total area of this historical land is 27, 000 square km. Six per cent of this land controlled by Jewish immigrants prior to the United Nations (UN) resolution on the partition of Palestine in 1947. To this day, the Israeli government controls 85% of the total area of historical Palestine. The Gaza Strip (GS) is considered one of the high-density populated areas in the World, with 4300-individuals/ square km. There are many reasons for this high density of population, such as continued land confiscation by the Israeli government and intensified tightening of the Borders closure system has increased the population density, as well as the unemployment and poverty. This Borders closure led the Palestinian authority to be very dependent on donors to finance the health

care and other services to the population (Palestinian Central Bureau of Statistics, Ramallah, 2011). This situation has been restricting the Palestinians who live in Gaza Strip of their freedom of movement, traveling, trading, employment, and all other social or business relations with outside the Borders and with the neighboring countries. Unhealthy living conditions, and limited access to healthcare, threatens the welfare and public health in Palestine (World Bank Towards a Palestinian State: Reforms for Fiscal Strengthening. World Bank, 2010).

The Palestinian Territories, which includes West Bank and Gaza Strip, is markedly undergoing a transition characterized by rapid urbanization (Palestinian Central Bureau of Statistics; 2011). While Urbanization is changing the Palestinian's lifestyles, they are also undergoing an epidemiologic transition characterized by a persistent burden of infectious diseases, which is typical of the developing countries; and a rise in noncommunicable (chronic) diseases such as cardiovascular disease, hypertension, diabetes mellitus, and cancer. High prevalence of type 2 diabetes and obesity were observed in both urban and rural Palestinian areas beginning in the late 1990s, and the rates are increasing since then (Palestinian Central Bureau of Statistics, 2010).

Religion and Political Ideology

The primary religions in Palestine are Islam (98%) and Christianity (2%) (Looklex Encyclopedia, 2008). Religion and strong beliefs are important when patients approach the healthcare system, as spiritual and religious beliefs can strongly affect health and illness practices. Some patients believe that illnesses, such as cancer, or mental illness may be the result of misfortune or even a punishment from God (Fleming & Towey, 2008). Palestinians regardless of their religion have one cultural practice, their

philosophy of life is shaped by their culture more than their religious background and may believe that an illness is a destiny that cannot be changed. Muslims, in particular, center all aspects of their daily life on praying and reading the Holy Quran, especially for the sick people (Halligan, 2006). They believe reciting the holy Quran often gives comfort and help the gravely ill patients to die peacefully. The Christian community includes different denominations (e.g., Catholic, Orthodox) and is steadfast in faith. Many of the Christian community believe, like Muslims that health is a gift from God.

The Palestinians who lives in Israel are under Israeli government rules. They have an access to healthier and wealthier life style, along with access to health care services (Israeli government's Ministry of Foreign Affairs, 2013). Palestinians living in the West Bank, including East Jerusalem and Gaza Strip, are under Fatah and Hamas rules, respectively, and are considered the two main political ideology leaders in the oPT. Fatah and Hamas have divided the health care systems to provide medical care to their citizens depending on the physical addresses (Human Rights Council Special Session on the Occupied Palestinian Territories Human Rights Watch, 2009). The Ministry of Health of the Palestinian Authority in both WB and GS has a reliable surveillance system for communicable diseases, aiming to prevent any outbreaks. This complex structure of the Palestinian's life has shifted the medical and public health services to focus on coping with the emergency situation in the country (Jean-Paul, 2009).

Despite the Palestinian Authority having a reliable surveillance health system until recent years ago, there was no vital statistic registration or reliable information available on the causes of death. Data on causes of death were registered at the Israeli

civil administration until 1994. After the 1993 Oslo Accords, Palestinians began to collect information on causes of death in 1994 (Giacaman, 2009).

Improvement in surveillance and vital statistic registration systems, brought by emergency conditions in 2000, offered the Palestinian Ministry of Health (MoH) the opportunity to log and describe morbidity and mortality from all different causes in the West Bank. This also allowed Palestinians to document and focus on mortality from chronic diseases in adults, which alerted officials to the problem of chronic diseases, and increased awareness of what has been an unrecognized public health problem (Abu-Rmeileh, Hussein, Abu-Arqoub, Hamad & Giacaman, 2008).

Review of Literature

A review of the literature was conducted in 2013 using the online search engine, CINAHL Plus, PubMed and Google with Full Text from the last 7 years. The original search for the words “Chronic Diseases in Palestine” resulted in 39 listed articles. Another search with the words “Palestinian Health” and “non-communicable diseases” listed 193 and 43 articles respectively, search also includes (prevalence of diabetic, hypertension and CVD in Palestine) listed 39, articles, while a search with the words “vulnerable” and “Palestinian population” only yielded 10 articles.

Commission on Social Determinants of Health by World Health Organization (2008) has brought the attention to the effects of low income on health, inadequate housing, unsafe workplaces, and lack of access to health facilities. Conflict is an additional hazard to health, not only because it causes injury, death, and disability, but also because it increases physical displacement, discrimination and marginalization, and prevents access to health services Constant exposure to life-threatening situations in a

conflict setting is an additional, specific social determinant of health, which can lead to disease (Jong-wook L, 2005, Social Determinants of Health Report, WHO, Regional Office for the Eastern Mediterranean, 2008).

It was noted in the literature that the Palestinian society is similar to other developing countries in the region, they still fighting the traditional communicable diseases and yet experiencing the epidemiologic transition of their health. Palestinians are increasingly suffering from modern diseases, the non-communicable diseases such as diabetes, hypertension, and cardiovascular disease (Husseini, 2009).

The Palestinian Medical Relief Society (PMRS) conducted research over a three-year period in the Ramallah district (mainly in the villages). The PMRS team formed a program for the prevention and management of chronic diseases. The research collected data pertaining to chronic diseases and their risk factors in this central area of the West Bank in Palestine. People over 35 years of age voluntarily enrolled in this study. Candidates were tested for indicators of having abnormal measures of blood glucose, lipid profile, hypertension, weight and height, and other cardiovascular risk signs and symptoms. At the end of the study, results were analyzed and these results were obtained from about 6000 people (69% women and 31% men) data indicating a prevalence of 27% for hypertension, 18% for type 2 diabetes, and 40% for dyslipidemia (Palestinian Medical Relief Society. Chronic Disease Program The mobile clinic services report Palestine, 2003).

The Palestinian Central Bureau of Statistics published that approximately 70.7% of the elderly aged 60 and over in the Palestinian Territory suffered from at least one chronic disease during 2010. This was a tremendous increase from 46.5% in the

Palestinian Territory in the year 2000 (Palestinian Central Bureau of Statistics, 2010). A survey by PCBS in 2010 found 22.3% of persons 18 years and above in the Palestinian Territory is reported as smokers, one of the clinically proven leading causes of cardiovascular diseases. The survey also detected the rate of diabetes mellitus among Palestinian refugees aged over 40 in 2009 was 11.7% in the West Bank and 13.1% in the Gaza Strip. World Health Organization study in 2010 detection rate of hypertension within the same population was 16% and 19.7% respectively (WHO, 2010).

Abu-Rmeileh, (2012) conducted a study Analyzing falls in coronary heart disease mortality in the West Bank between 1998 and 2009; Abu-Rmeileh explored the factors that were involved in raising the incidence of chronic diseases among Palestinians; such as a shift from the healthy traditional Middle Eastern diet to a westernization of diet, particularly junk food and soda which represents real future threat. Furthermore, physical inactivity that's accompanies developing obesity and diabetes mellitus, increased substantially between 1998 and 2009. Obesity prevalence in the year 1998 was 49% for women and 30% for men aged 35–64 years old. The prevalence of obesity has increased mainly among men. The 2010 survey conducted by PCBS shows an increase in diabetes prevalence, which generated approximately 30 additional CHD deaths. Additional studies need to address the increase of diabetes and obesity, especially among men. This increase represents a public health priority for immediate effective evidence-based interventions.

Hussiene (2009) found that cardiovascular diseases, diabetes mellitus, and cancer in the occupied Palestinian territory were consistent with a previous report based on cause-of-death statistics from the Israeli-demarcated Jerusalem district. Hussiene (2009)

also stated that the Palestinian mortality rate, caused by coronary heart diseases, is greater than twice that of the Jewish men and women. Rates of mortality from coronary heart disease decreased during the study, from 1984 to 1997. Hussiene, 2009 also found that in Jerusalem the rates of diabetes mellitus and second hand smoking were higher within Palestinian with coronary heart disease than in Jewish-Israeli with same diagnosis. Palestinian women were found to have more atypical clinical presentations and more advanced coronary artery disease than did Jewish women living in the Jerusalem. Palestinian women were also more likely to be physically inactive, obese, and have diabetes mellitus than were Jewish women.

Another study by Tayem, 2012 shows that BMI, sedentary lifestyle, and consumption of fast food has a 27.1% correlation with Pre-hypertension and a 2.2% correlation with hypertension. Pre-hypertension and hypertension were associated with obesity and smoking. No relationship was detected between students' blood pressure and sedentary behavior, family history of hypertension/coronary artery disease, or consumption of fast food. The prevalence of increased BMI and blood pressure among males was significantly higher than females.

Although there is little data available from standardized population-based epidemiological studies of cardiovascular and cerebrovascular diseases in the occupied Palestinian territory, five epidemiological studies were done in the West Bank and Gaza Strip. These cross-sectional studies were based on a sample from the areas in which they were completed and did not necessarily indicate the national numbers of the general Palestinian population. However, these studies are able to provide an estimation of the situation of the chronic diseases. A structured questionnaire was used to obtain

information from participants regarding their demographics, diet, education level, source of income and physical activity. The rates of diabetes, hypertension, dyslipidemia, metabolic syndrome, obesity, and other risk factors were based on physical measurements and blood samples (Tayem Y, 2012).

In summary, Palestinian society, much like that of many other developing countries in the region, are experiencing an epidemiological transition toward the chronic diseases in the rise while infectious diseases are another concerns in this country (Giacaman, 2009; Hussein, 2009).

Chronic Diseases used in this Study

Chronic diseases are increasing worldwide, such as cardiovascular disease; diabetes mellitus, and hypertension, which are leading causes of death (CDC Health Report, 2014). Chronic diseases are accompanied with disabilities and a poor quality of life, which cost the families and the nation a great deal of money to provide treatment and life accommodations. The importance of creating and investing in health promotion is emerging from these health indicators. Data from the World Health Organization describe that chronic disease is a health problem and is the leading cause of death not only in United States but also around the world, specifically in developing countries where communicable diseases remain within the scope of the health concerns. Moreover, CDC defines “chronic disease as is a long-lasting condition that can be controlled but not cured (WHO Health Report, 2012)”. In this study the person with Chronic Disease were identified as:

Any household member who suffers from at least one medically diagnosed chronic disease and receives continuous treatment for that disease. Around 70.7% of the

Palestinian elderly aged 60 and over in the Palestinian Territory were suffering from at least one chronic disease during 2010, of these, 71.6% were in West Bank and 68.7% in Gaza Strip. It was 46.5% in the Palestinian Territory in the year 2000 (PCBS,2013).

Cardiovascular diseases

Cardiovascular diseases (CVD) are a class of diseases that involve the heart, the blood vessels (arteries, capillaries, and veins), or both (Maton et al, Human Biology and Health, 1993). Cardiovascular disease refers to any disease that affects the cardiovascular system, principally cardiac disease, vascular diseases of the brain and kidney, and peripheral arterial disease (Kelly, Fuster & Valentin;Institute of Medicine;Promoting Cardiovascular Health in the Developing World: A Critical Challenge to Achieve Global Health,2010).

Cardiovascular disease is a serious health problem; examples of CVD are coronary or vascular heart disease, cerebrovascular disease (stroke) and cardiomyopathy. The cardiovascular disease has multiple risk factors, that can occur from a combination between genetic, family history and life style factors. Genetic factors and family history has a great influence on someone health outcome, these factors can be modifiable or non-modifiable. The life style factors are referred to physical inactivity, dietary habits, and smoking.

Being physically active can be determined by the intensity and length of physical activity. It has a direct effect on individual health, and to be considered physically active; respondent has to indicate at least thirty minutes of moderate-intensity physical activity each day for at least five days a week (American Heart Association, 2013). Multiple studies showed that walking at least two hours a week can reduce the incidence of

premature death from cardiovascular disease by about 50%. Moreover, People with diabetes if they maintain daily physical activity recommended by the CDC Guidelines; are thought to improve their blood glucose control, and can reduce the negative impact of diabetes on cardiovascular system (WHO, Global Strategy on Diet, Physical Activity, and Health, 2014).

Hypertension

Hypertension or high blood pressure is one of the cardiovascular disease risk factors, sometimes called arterial hypertension, a chronic medical condition in which the blood pressure in the arteries is elevated. Blood pressure is summarized by two measurements, systolic and diastolic, which depend on whether the heart muscle is contracting (systole) or relaxed between beats (diastole) and equate to a maximum and minimum pressure, respectively. Normal blood pressure at rest is within the range of 100-140mmHg systolic (top reading) and 60-90mmHg diastolic (bottom reading). High blood pressure is said to be present if it is persistently at or above 140/90 mmHg (Chobanian et al, "Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure"; December 2003).

The survey-designed questions about elderly members at the household, who has been diagnosed or getting treatment for hypertension, the survey has no ability to detect members of the household who might have hypertension but have no access to health services to get diagnoses and treatment.

Diabetes Mellitus

Diabetic mellitus is another risk factors of developing cardiovascular disease, it is a group of metabolic diseases in which a person has high blood sugar, either because the

pancreas does not produce enough insulin, or because cells do not respond to the insulin that is produced (Definition and diagnosis of diabetes mellitus and intermediate hyperglycemia: report of a WHO/IDF, 2006).

Studies over the decades showed that diabetes of all forms, increase the risk of long-term complications, which usually appear between 10-20 years of the onset of diabetic, but may be the first symptom in those who have not been received a diagnosis before that time. The major threat is the damage to blood vessels on the long term complications. Once the patient is diagnosed with diabetes, it will increase the risk of developing cardiovascular disease to be doubled. The major complications are the "macrovascular" diseases (related to atherosclerosis of larger arteries) like ischemic heart disease (angina and myocardial infarction), stroke, and peripheral vascular disease (PVD) (The emerging Risk Factors Collaboration, The Lancet, 2010). The prevalence reported in the Palestinian Family Health Survey was 10.6% (8.7—12.5) (PCBS, 2013).

This chapter considers the significance of both the experience and persistence living conditions of the Palestinians. In particular, the researcher explored how the Nation of Palestine health history has been formed. The researcher presented some of the key factors and highlights their significance on an often-neglected dimension and their influence on health.

CHAPTER III

METHODOLOGY

This chapter describes the methodology involved in the completion of this study. The following sections are included: study design, study instrument, sampling frame, and size, protection of human subjects, instrument, independent variables, and data analysis.

Study Design

The research will use data from the Palestinian Family Health Survey, which is a national survey conducted by the Palestinian Central Bureau of Statistics in 2010 of 11,661 households with a response rate of 88%. The survey compiled health and demographic information about household members in the selected sample, such as age, sex, education, participation in labor force, diseases, smoking, and disability; information about family planning, antenatal care, postnatal care, and fertility from women of reproductive age; and assessed vaccination coverage and nutritional status of children younger than 5 years. The information is self-reported and proxy-reported in response to standard questionnaires.

The target population of the Palestinian Central Bureau of Statistics survey was all Palestinian households within the West Bank. Descriptive statistics will be run on each of the study-selected variables, along with bivariate analyses. Relationship will be further explored between each of the independent the dependent variables. The results will be used to guide the selection of independent variables that will be included in the regression models, which will be constructed to determine the effects of each of the independent variables on the

prevalence of diabetes, hypertension, and CVD. The analyses will be conducted using IBM SPSS software, version 20.

Study Instrument

The Palestinian Family Survey 2010 is the fifth in a series of surveys completed by Palestinian Central Bureau of Statistics (PCBS) over ten years. The first survey conducted in 1996, the second survey in 2000, the third in 2004, the fourth in 2006, and the fifth, which is used in this study, was completed in 2010. The survey data of 2010 was used to examine the health status directions of change, compared with previous surveys in related to demography, elderly, and the transition of population socio-economic and political context.

The 2010 survey enabled the researcher to analyze demographic and health data that is attributed to the Palestinian population who lives in the occupied Palestinian Territory (oPT), which has been defined in the introduction, with a focus on demography, unmet health needs, education attainment, social support sources, and perceived health status by elderly.

The 2010 survey includes sections and elements, such as basic health and socio-economic information of the elderly people 60 years and over. The PCBS hoped that the research will enable the oPT decision makers and donor countries to perform their duties of caring for and promoting health in the Palestinian Territory, as well as informing planners and policy makers to engage in comprehensive national development(PCBS, 2010 Survey).

Sampling Frame

The sampling relied on frames established by PCBS and basically includes the list of clustered areas, which are a geographical areas containing a number of buildings and housing units of about 120 housing units on average. West Bank: each enumeration area consists of a list of households with identification data to ascertain the address of individual households, plus identification data of the housing units (PCBS, Family Survey, 2010)

Sample Size

The data from an extremely large sample of over 15,355 participants in this study was reduced to a final sample size of 3,635, which only included those participants who are 60 years and older, and the period of data collection in West Bank was between March 2010, to December 2010.

Protection of Human Subjects

Approval of the PCBS study procedures and the Social Behavioral IRB for social, behavioral, and educational research performed the verification of the protection of human subjects for the participants of the study. Selected household who agreed to participate in the cross-sectional survey were asked to sign an

Interview Consent Form before beginning the questionnaire. Participants were then asked to sign a second informed consent form before submitting to the Census and Survey Processing System program (CSPRO). Approval of the use of the PCBS existing data for this study was obtained from Professor Rita Giacaman, Research, and Program Development Coordinator at Institute of Community and Public Health (Birzeit University), as noted in Appendices.

Survey Questionnaire

Household questionnaire: Covers demographic and educational characteristics, chronic diseases, smoking habits, employment status, and marital status. Elderly questionnaire (60 years and over): Covers general characteristics, social relations, activities, time-use, perceived health status, type of health insurance and use of mass media.

Independent variables

The following variables were used in the analysis for this study. They were obtained from the PCBS data set utilizing the following procedures.

Gender

The survey asked direct question by the interviewer about how many women in the house to determine the gender of the household residence. The researcher chose this variable as women usually develop CVD later than men due to nature of female hormone presence like estrogen.

Age

The participants in the survey divided into the targeted individuals from three age groups, and this study focused on elderly aged 60 and older. Chronic diseases prevalence increase with age, by new reports from CDC and WHO concerning chronic disease.

Perceived Health Status

This variable was evaluated by asking the participants to rate their general health condition using a 5-point likert scale indicating excellent, very good, average, less than good and bad. These values were reversed scored by the researcher and used to represent the variable perceived health status in the study where a value of 1 indicating bad and a

value of 5 indicated excellent. The reported health status values ranged from 1 through 5 among the 3635 participants. The variable "perceived health status" was used as a personal factor in the study design.

Social Support

To assess the availability of social support sources for each participant, they were asked about the individuals that provided them with assistance needed to perform daily activities.

The answers were listed in a form of 10 choices, indicating husband/wife, son, daughter, son's wife, daughter's husband, grandson/granddaughter, and husband of granddaughter/wife of grandson, brother/sister, other relatives, no specific person/whoever available in the house. The number of sources ranged from zero to ten social support sources. The researcher calculated the variable "social support" by computing the responses of these ten items to create a possible score ranging from 0 through 10, where a value of zero indicates no social support available and a value of 10 indicates maximal support. The variable "social support" was used as an interpersonal influence in the study design.

Smoking Habit

Study participants were asked about the number of cigarettes they smoked daily. They were also asked how long they have been smoking. The participant's answers ranged from smoking 10 cigarettes or less per day, 11-20 cigarettes per day, 21-40 cigarettes per day, and more than 40 cigarettes per day. The answers to how long the participant has been smoking ranged from 1 year to 58 years. The researcher created a new variable called "Number of packs of cigarettes per day". When participants smoke

10 cigarettes or less per day, the number was recoded to 0.5 pack of cigarettes; when participants smoke 11-20 cigarettes per day, the number was recoded to 1 pack of cigarettes; when participants smoke 21-40 cigarettes per day, the number was recoded to 2 packs of cigarettes; when participants smoke more than 40 cigarettes per day, the number was recoded to more than 2.5 packs of cigarettes. The “Smoking Habit” variable was created by multiplying the number of packs of cigarettes per day with the length of years of being a smoker. The variable "Smoking Habits" was used both as an independent variable, and as a health-promoting behavior in the study design.

Education Attainment

The survey asked participants about school attendance, and educational status, where the options ranged from being Illiterate to PhD degree. Educational attainment explained some of the perceived barriers to action in Pender’s Health Promotion Model.

Labor Force Status (Employment status)

The questionnaire asked the participants how many hours they had of labor force during the last week, what kind of work they are doing in details, employment status: employer, self employed, waged employer and unpaid family member. Employment status explained some of the situational influences in Pender’s Health Promotion Theory.

Income

The survey asked about the source of income and if the income was sufficient or not, who supported the household, does the person responding to the questionnaire supports their self and others. The income variable explained some of the Perceived Barrier To Actions in Pender’s Health Promotion Theory.

Refugee Status

In the survey, two variables were chosen to divide the population into strata, depending on the homogeneity of parts of the population. Palestinian populations have shown that households divided as a refugees or non-refugees. The non-refugee participants are the individuals who lived in West bank and Gaza Strip before 1948 war.

While hundreds of thousands of Palestinians were displaced in refugee camps after 1948 war, the refugee camps are dispelled in west bank and Gaza Strip. The refugee status explained some of the situational influences in Pender's Health Promotion Theory, where refugees have poor housing conditions; homes are overcrowded, close to other buildings, and insufficient ventilation and sunlight.

Marital Status

The survey asked participants about their current marital status. Participants chose from: single, engaged, married, divorced, widow/widower and separated. The researcher recoded the marital status variable by combining the married and separated participants into current married category, while the singles, engaged, divorced and widowed were recoded into current single category. The marital status explained some of the situational influences in Pender's Health Promotion Theory.

Dietary Habits

One of the research questions was formed to investigate the Dietary Habits of the participants in the study. The participants were asked, how many days a week they ate different types of foods. The researcher classified eating of the following: Vegetables, Fruits, protein (meat, chicken, fish, and legumes) and

carbohydrates (pasta, rice, bread) as healthy selections. The participants reported the number of times they ate these choices per week. The researcher classified eating of the following: Dairy products, fat and oil, and sugars as unhealthy selections. The participants reported the number of times they ate these choices per week. The researcher added the categories of the unhealthy dietary habits per week together (scores) and subtracted from them the healthy dietary habits (scores). This computation provided the dietary habits score. The variable "dietary habits" was used both as an independent variable and as a health-promoting behavior in the study design.

Physical Activity

Study participants were asked about engaging in physical activity. One question focused on whether they walked regularly or not. For those participants who answered yes, they were asked how many hours they walked in a week? The number of hours walked per week ranged from 0 to 98 hours in the sample. The number of hours walked per week indicated the "Physical activity" variable, which used both as an independent variable and as a health-promoting behavior in the study design.

Type of Health Insurance

The questionnaire asked about medical insurance and the respondent chose either available, not available, governmental and non-governmental. The health care system in oPT is complex and weak, and does not cover all the population health needs.

The new variable calculation, conversion, and recoding were all performed with SPSS. Descriptive statistics were run on demographic and other variables used for

analysis. Bivariate correlations analyses were run on the dependent and independent variables to identify possible relationships. Regression analyses were performed using six different models to test each of the three health-promoting behavior variables of physical activity, dietary habits, and smoking habits and the three health outcome variables of hypertension, diabetes mellitus, and cardiovascular disease. Pender's Health Promotion Model was used as the framework for the six research questions.

Data Analysis

A total of 2 data files were merged into a single data file using the common participant identification number as the linking variable. The merged data file from household/elderly over 60 years old questionnaires in SPSS format was analyzed with SPSS release 20.0 software. Variable calculation, conversion, and recoding were all performed as previously discussed in the independent variables section of this chapter. Frequencies and descriptive statistics were run on demographic and other socio-economic variables used for analysis. Linear multiple regression analyses were then performed using six different models to test each of the three health-promoting behavior variables of smoking habits, dietary habits, and physical activity and the three health outcome variables hypertension, diabetes mellitus and cardiovascular disease.

Summary

This chapter described the methodology involved in the completion of this study utilizing secondary data from the PCBS study. The following sections were included: study design, study instrument, sampling frame, and size, protection of human subjects, instrument, independent variables, and data analysis.

Chapter IV

Research Results

Socio-demographic characteristics of the studied population

The data used in this study is from the Palestinian Bureau of Statistics. Elderly and household surveys were used to analyze and describe the possible correlation between dependent variables (hypertension, diabetes mellitus and cardiovascular diseases) and independent variables (age, gender, income, perceived health status, social support, dietary habits, physical activity, type of medical insurance, refugee status, employment status, smoking habits, marital status and education attainment). Descriptive statistics were run on the data. Bivariate correlations were also used to explore possible relationships between dependent and independent variable; SPSS (Statistical Package for the Social Sciences) version 21 software was used.

Using Pender's Health Promotion Model to examine the Individual Characteristics and experiences of the participants in the study, another analysis was completed to describe and correlate possible relationships between dependent variables (dietary habits, physical activity, smoking habits) with independent personal and socio-demographic characteristics (age, gender, income, perceived health status, social support, type of medical insurance, refugee status, employment status, marital status and education attainment). The total number of the sample is 3635 participants, almost half of the sample (45%) are male, the mean age of the sample was 69.7 ($SD=7.908$) and the age of participants ranged from 60 to 95 years. More than one third of the sample reported their income as not sufficient (35.1%). Non-refugees represented more than half

of the sample (55.2%), and the employment status of the sample was reported as unemployed (89.2%), self-employed (4.5%), while (3.7%) were waged employees. The participants were found to be mostly illiterate, almost half of the sample had no means to read or write (48.3%). More than one third of the sample perceived their health status as average (43.4%), also 7% of the sample reported that they have no social support from family, friends or neighbors while the rest of the sample had available social support ranging from one to ten sources, mean 2.6045 ($SD=1.34199$). More than half of the participants were married (65.2%), widowed participants composed the second large group (30.8%).

Table 4.1. Frequencies of socio-demographic characteristics. (N= 3635)

Variable	<i>N</i>	<i>Percent%</i>
Gender		
Male	1637	(45)
Female	1998	(55)
Age group		
60-69	2034	(56)
70-79	1093	(30)
80-85	353	(9.7)
>85	155	(4.3)

Income

Sufficient	2358 (64.9)
Non-sufficient	1275 (35.1)

Refugee status

Refugees	1629 (44.8)
Non-refugees	2006 (55.2)

Employment status

Unemployed	3243 (89.2)
Self employed	163 (4.5)
Waged employee	135 (3.7)
Employer	55 (1.5)
Unpaid family work	39 (1.1)

Education

Illiterate	1757 (48.3)
Semi-illiterate	545 (15)
Less than high school	777 (21.4)
High school graduate	254 (7.0)
Associate diploma	122 (3.4)

Bachelor degree	145 (4.0)
Post bachelor	7 (0.2)
Master degree	11 (0.3)
PhD	9 (0.2)

Perceived health status

Bad	785 (21.6)
Less than good	628 (17.3)
Average	1577 (43.4)
Very good	499 (13.7)
Excellent	144 (4.0)

Social support

1-3 sources	1828 (50.3)
4-6 sources	547 (15.1)
7-10 sources	4 (0.1)
0 source	7 (0.2)

Marital status

Single	109 (3.0)
Divorced	36 (1.0)
Widowed	1119 (30.8)
Married	2371 (65.2)

The Health Promotion Model was used to explore the demographic, socioeconomic, and interpersonal influences like social support sources as interpersonal factors and how it can affect participants' health promotion behaviors outcomes. Health Promotion Behaviors like dietary habits, engaging in physical activity, and smoking habits, may have an effect on health outcomes (Table 4.2, 4.3).

Vegetables and carbohydrates were the most consumed type of food by the participants, mean values of 4.74, and 4.87 days per week and ($SD=2.045$, 2.226) respectively. Dairy products mean value, 3.87 days per week, ($SD=2.287$), fruits mean value, 3.26 days per week, ($SD=2.193$), protein consumption mean value, 2.74 days per week, ($SD=1.778$), fat and oil mean value, 2.60 days per week, ($SD=2.337$), and sugar mean value, 1.89 days per week, ($SD=1.991$).

Table 4.2: Mean and Mode values + (SD) for dietary habits per week. (N= 3635)

Variable	Mean	Mode	(SD)
Vegetables	4.74	7	2.045
Fruits	3.26	2	2.193
Protein	2.74	2	1.778
Carbohydrate	4.87	7	2.226
Dairy products	3.87	7	2.287
Fat and oil	2.60	0	2.337
Sugar	1.89	1	1.991

The majority of the participants reported to have 1-9 hours of walking per week, (16.7%), mean 17.01 ($SD=27.907$), Physical activity represented by walking regularly every week, number of hours of walking weekly, varying from one hour to 70 hours, (25.0%) reported to practice walking regularly, while (74.9%) reported not practicing walking activity. In table 4.2, frequencies of physical activity with number of hours of walking per week are displayed.

Almost 89% (86.6%), of this age group reported to smoke more than two and a half packs of cigarettes a day, mean 2.23 ($SD=0.681$). The majority of the populations have governmental health insurance, (75.3%).

Table 4.3: Frequency values and percentage of exogenous variables. (N= 3635)

Variable	N	Percent%
Physical activity		
Practicing walking activity regularly		
Yes	909	(25)
No	2724	(74.9)
Number of hours of walking per week		
Zero hours	2726	(75)
1-9	606	(16.7)
10-19	129	(3.5)
20-29	58	(1.6)
30-39	15	(0.4)
40-49	6	(0.2)
>50	95	(2.6)

Smoking habits	
Half pack of cigarettes/day	486 (13.4)
More than 2.5 packs of cigarettes/day	3149 (86.6)
Type of health insurance	
Governmental health insurance	2738 (75.3)
Non-Governmental health insurance	895 (24.6)

Investigation of healthy behaviors continued by examining the health outcomes, and exploring frequencies of hypertension, diabetes mellitus, and cardiovascular disease.

Table 4.4 illustrates these

frequencies. Approximately half of the participants reported having a diagnosis of hypertension, (42.8%), almost one third of the participants reported being diabetic (29.6%), while 15% reported to having cardiovascular disease.

Table 4.4: Frequency and parentages of hypertension, diabetes mellitus, and cardiovascular diseases.

(N= 3635)

Variable	N	Percent%
Hypertension	1556	(42.8)
Diabetes mellitus	1077	(29.6)
Cardiovascular disease	547	(15.0)

Pender's Health Promotion Model remains the guide to investigate the surveyed population behavior outcome. To identify significant relationship between dependent and independent variables, six regressions models were used to predict these relationships.

Table 4.5: displays the value of dietary habits, and the predicting value of the independent variables. The model explained 9.6% of the total variance (dietary habits). The table illustrate that individuals who have insufficient income scored less on the dietary habits scale by 1.7 points, with each additional year of education an individual has they scored higher on the dietary habits scale by 44 point. Individuals who are unemployed have 1.480 less scores on the dietary habits scale. Individuals, who have governmental medical insurance, have an additional .761 points on the dietary habits scale. Individuals, who have higher scores on their perceived health status, have an additional 1.324 points on the dietary habits scale. For every additional source of social support an individual has, they score .955 extra points on the dietary habits scale.

Table 4.5: linear regression analysis of dietary habits as a dependent variable. (N= 3635)

Independent variable	Unstandardized coefficient B	β	<i>P-value</i>
Income	-1.692	-.116	.000**
Education status	.440	.091	.000**
Employment status	-1.480	-.043	.035*
Marital status	2.566	.035	.076
Governmental medical Insurance	.761	.047	.024*
Perceived health status	1.324	.202	.000**
Social support	.955	.060	.003**
<hr/>			
R ²	.096		
Adjusted R ²	.092		
F(<i>p</i> -value for model)	24.226		

* $p < .05$ ** $p < .01$

Tobacco use varies from using cigarettes, pipes, water pipes (Hookah) or combination of cigarettes and pipes, or cigarettes and water pipe. The study found (14%) of the participants smoking mainly cigarettes and pipe, while 4 (1.1%) smokes water pipe only. Continuing to analyze the smoking habits, (7.2%) reported being a former smoker

and (77.6%) reported as never smoked. Table 4.6: shows frequencies of smoking habits with amount of consuming tobacco in form of cigarettes. The majority of the smokers reported to smoke more than two and a half packs of cigarettes a day (86.6%), and (13.4%) reported to smoke up to half pack of cigarettes daily.

Table 4.6 Frequencies of tobacco use, and amount of consuming of cigarettes per day.

(N= 3635)

Variable	N	Percent (%)
None-smoker	2821	(77.6)
Cigarettes and pipe	510	(14.0)
Water pipe	40	(1.1)
Cigarettes and water pipe	4	(0.1)
Former smokers	260	(7.2)
Pack of cigarettes per day		
Half pack of cigarettes	486	(13.4)
Two packs of cigarettes and more	3149	(86.6)

Regression was used with smoking habits to evaluate the relationship with the independent variables; the model was able to predict 16.3 % of the total variance, as shown in table 4.7.

Table 4.7: linear regression analysis of smoking habits as a dependent variable.

(N= 3635)

Independent variable	Unstandardized coefficient B	β	P-value
Male Gender	-17.580	-.181	.001**
Age	9.588	.292	.000**
Income	-2.190	-.042	.416
Governmental medical insurance	-2.824	-.050	.327
Marital status	-32.724	-.097	.065
Refugee status	7.404	.143	.005**
Social support	-1.956	-.035	.495
Perceived health status	.413	.018	.744
<hr/>			
R ²	.163		
Adjusted R ²	.138		
F(<i>p</i> -value for model)	6.526		

* $p < .05$ ** $p < .01$

Table 4.7 shows that males will smoke 17.6 less packs of cigarettes per year, and for every year an individual gets older, he smoke an additional 9.6 pack of cigarettes per year. Refugee individuals will smoke an additional 7.404 packs of cigarettes per year.

A regression was used to identify the predictors of physical activity with multiple independent variables. The model was significant, 6.6% of the total variance was explained by listed independent variables in table 4.8.

Table 4.8: linear regression analysis of physical activity habit as a dependent variable.

(N= 3635)

Independent variable	Unstandardized coefficient B	β	P-value
Age	-.546	.095	.000**
Age	-.546	.095	.000**
Male Gender	1.317	.131	.000**
Income	.184	.018	.0395
Refugee status	.528	.052	.009*
Education status	-.098	-.028	.253
Employment status	-.992	-.041	.049*
Marital status	.371	.007	.723
Perceived health status	.692	.148	.000**
Social support	-.299	-.027	.181

R ²	.066
Adjusted R ²	.062
F(<i>p</i> -value for model)	16.744

*** p < .05 ** p < .01**

Males have an additional 1.317 hours of physical activity per week; with every additional year of age the individuals gain, they have .546 less hours of physical activity per week. Refugee individuals have an additional .528 hour of physical activity per week. Unemployed individuals have .992 less hours of physical activity per week, while individuals with higher score of perceived health status have an additional .692 hour of physical activity per week.

Hypertension, diabetes mellitus and cardiovascular diseases are the second set of regression models, as Pender's Health Promotion Model is exploring health both promotion behaviors and health outcomes. In the previous models, the study investigated the prior behaviors of the individuals and focused on dietary habits, smoking habits and physical activity.

In table 4.9, the model of linear regression used to predict the relationship between hypertension and the independent variables, the model was significant, 8.2% of the total variance was explained by the independent variables used in the model.

Table 4.9: linear regression analysis of hypertension as a dependent variable. (N= 3635)

Independent variable	Unstandardized coefficient B	β	P-value
Male Gender	-.143	-.143	.000**
Income	-.010	-.009	.651
Refugee status	-.091	-.091	.000**
Education status	.026	.075	.001**
Employment status	.006	.003	.898
Marital status	.035	.007	.737
Governmental medical insurance carrier	.056	.048	.019*
Smoking habits	.043	.088	.000**
Dietary habits	-.003	-.044	.037*
Physical activity	-.003	-.028	.177
Perceived health status	-.073	-.158	.000**
R^2	.082		
Adjusted R^2	.077		
$F(p\text{-value for model})$	17.009		

* $p < .05$ ** $p < .01$

Males are less likely to have a diagnosis of hypertension by 0.143, (14.3%); refugee individuals are less likely to have a diagnosis of hypertension by -0.091, (9.1%). For every additional year of education the individuals have, they are more likely to have diagnoses of hypertension by 0.026, (2.6%), individuals who have a governmental health insurance are more likely to be diagnosed with hypertension by 0.056 (5.6%). Smoking individuals are more likely to be diagnosed with hypertension by 0.043 (4.3%), individuals with higher scores on the dietary habits scale are less likely to be diagnosed with hypertension by 0.003, (0.3%), and individuals with higher perceived health status scores are less likely to be diagnosed with hypertension by 0.073 (7.3%). Linear regression was used to predict associations between independent variables and diabetes mellitus, the model was significant, and 4.6% of the total variance was explained by independent variables listed in table 4.10 below.

Table 4.10: linear regression analysis of diabetes mellitus as a dependent variable.

(N= 3635)

Independent variable	Unstandardized coefficient B	β	P-value
Gender	-.053	-.056	.015*
Income	-.047	-.048	.023*
Refugee status	-.036	-.038	.067
Education status	.036	.110	.000**
Employment status	-.005	-.002	.919
Marital status	.084	.017	.395
Governmental medical insurance carrier	.054	.049	.019*
Dietary habits	-.004	-.065	.003*
Physical activity	-.003	-.037	.084
Perceived health status	-.070	-.161	.000**
Social support	.016	.045	.029*
R ²	.046		
Adjusted R ²	.042		
F(p-value for model)	10.069		

* $p < .05$ ** $p < .01$

In this table, males found to be less likely to have a diagnosis of diabetes mellitus by 0.053 (5.3%), individuals with insufficient income are less likely to have a diagnosis of diabetes mellitus by 0.047 (4.7%), for every additional year of education an individual

have, they are more likely to be diagnosed with diabetes mellitus by 0.036 (3.6%) of. The table above also shows that individuals who have governmental medical insurance have an additional 0.054 (5.4%) of being diagnosed with diabetes mellitus, individuals with higher score on the dietary habit scale, are less likely to be diagnosed with diabetes mellitus by 0.004 (0.4%), also individuals with higher score of perceived health status are less likely to be diagnosed with diabetes mellitus by 0.070 (7%), and the greater an individuals having social support sources are having an additional 0.016 (1.6%) of being diagnosed with diabetes mellitus.

In this final part of the analysis of the dependent variables, cardiovascular disease was investigated by using also regressions, to predict the association with other independent variables, the model was significant, and 3.2% of the total variance was explained by independent variables. Table 4.11; illustrates the results of the predicting outcome of the model.

Table 4.11: linear regression analysis of cardiac disease as a dependent variable.(N=3635)

Independent variable	Unstandardized coefficient B	β	P-value
Male Gender	.038	.052	.038*
Income	.018	.023	.287
Refugee status	-.024	-.032	.121
Education status	.006	.025	.299
Employment status	.045	.026	.228
Marital status	-.108	-.028	.174
Governmental medical insurance	.023	.026	.212
Smoking habits	.023	.061	.006**
Dietary habits	-.001	-.012	.569
Physical activity	-.003	-.035	.102
Perceived health status	-.048	-.139	.000**
Social support	-.001	-.003	.900
R^2	.032		
Adjusted R^2	.027		
$F(p\text{-value for model})$	6.357		

* $p < .05$ ** $p < .01$

The table above shows that male individuals are more likely to be diagnosed with cardiovascular disease. Individuals with smoking habit have an additional 2.3% (.023)

chances of being diagnosed with cardiovascular disease and the higher the individuals have rated their perceived health status scale, the less likely to be diagnosed with cardiovascular disease 0.048 (4.8%).

Summary of the Results

This chapter presented the findings of the data analysis of the household and elderly surveys among Palestinians. The results found that most of the relationships between the dependent and independent variables were significant, through bivariate correlation model and most importantly by using linear regressions.

The goal of creating the linear regression models, were to minimize the sum of the errors succeeded. Males respondents were found to have strong correlation with having hypertension and diabetes mellitus ($p = .000$ and $.015$) respectively, and being a refugee has a strong correlation with being a smoker and having insufficient income ($p = .005$, $.000$) respectively. Perceived health status was significant with all five models ($p=.000$), excluding the smoking habits. Carrying a governmental medical insurance was significant with three of the research models: hypertension ($p=.019$), diabetes ($p=.019$), and dietary habit scale ($p=.024$). The variable social support was significant in two models, diabetes ($p=.029$), and dietary habits scale ($p= .003$).

Dietary habits scale was significant in two of the linear regressions hypertension ($.037$), and diabetes ($p=.003$). Smoking habits was significant with hypertension ($p=.000$), and cardiovascular disease model ($p= .006$).

This chapter presented the findings of the frequency, descriptive and linear regressions tables. This result of the statistical analysis will guide the discussion in chapter V, with the focus on health promotion behaviors and behavioral outcomes.

CHAPTER V

DISCUSSION

Description of the studied population

This descriptive, correlational study explored the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status), and participant's adherence to health-promoting behaviors (physical activity, dietary habits, smoking habits), and the overall health outcomes (hypertension, diabetes mellitus and cardiovascular disease).

Research Question One

Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, perceived health status, social support, smoking habits, dietary habits, physical activity; and hypertension within Palestinian Population?

The results of the regression analysis demonstrate that the model exploring the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status), participants adherence to health-promoting behaviors (physical activity, dietary habits, smoking habits); and hypertension. Seven predictor variables, gender, refugee and education status, governmental medical insurance, smoking, and dietary habits, and perceived health status, significantly contributed to the

model. Males who are refugees, with poor dietary habits and low perceived health status were negatively correlated with developing hypertension. Although these findings differ from other studies, where refugees found to live in deep poverty, and unemployment rate reached almost 33% leaves them with food insecurity, mixed feelings of distress, incapacitation, and sorrow, that leads to smoking habits in order to cope with their stress, and to consume high amount of salt and sodium through the canned food dispensed to refugees by UNRWA (Giacaman, R, et al, 2009). Additionally, the greater the individual's achieved years of education, and the greater the individual smoked was associated with higher frequencies of hypertension. Moreover, the individuals who carry governmental medical insurance were associated with higher frequency of hypertension. This suggests that individuals that are more educated have an access to health care services through their job insurance and then have a better chance of being diagnosed with hypertension.

Although, age, gender, and ethnic backgrounds are the “unmodifiable factors” among hypertension risk factors, smoking habits, unhealthy dietary habits, physical inactivity that leads to obesity and high blood pressure are in the “modifiable health behaviors” group. The findings from this study are similar to a previous research done in oPt about Prevalence, awareness, treatment and control of hypertension in the Palestinian population. Khdour & Al-Shahed (2013) showed the prevalence of hypertension was 27.6% with a higher percentage among men (29.2 vs 26.4%). This study o population, 25 years and over, this indicates a lower frequency of hypertension than this current study, which might be related to using a younger age group for the study (Khdour, Hallak, Shaeen, Jarab & Al-Shahed, 2013).

A study done by Abu-Rmeileh, (2013) about the prevalence of obesity in the Occupied Palestinian Territory, resulted in a higher incidence among women compared with men in the year 2000. The age groups 45–54 years and 55–64 years had the highest prevalence of obesity; the prevalence of obesity reached it's highest level at the age of 55–64 years and 65–74 years for women and 65–74 years for men (Abu-Rmeileh, et al, 2013).

The Center for Disease Control and Prevention (CDC) states in a report of May 2013 that the prevalence of hypertension in United States is (31%) which equals to 67 million American adults have high blood pressure, that is 1 in every 3 adults. Men age 55 and older were the majority (54.0%) of the hypertension patients. In this current study the prevalence of hypertension was 42.8% for males 60 years and older. Hypertension is one of the most important contributors to heart disease, kidney failure, and stroke, and when they are combined, they formulate the world's number one cause of early disability and mortality. Annual complications of hypertension account for 9.4 million deaths worldwide (Lim SS, et al, 2012).

This study concludes that hypertension prevalence was negatively associated with older males, being a refugee, dietary habits, and perceived health status, and positively associated with education attainment, governmental medical insurance, and smoking habits. Palestinian knowledge of and level of awareness toward hypertension needs a comprehensive strategy for controlling and preventing the high percentages of obesity, and changing the patterns of living in ways that increase behavioral and biological risk factor levels in the Arabic culture, when being overweight is misinterpreted in favor of a

sign of wealth in some Arab societies (Khdour, Hallak, Shaeen, Jarab & Al-Shahed, 2013).

Research Question Two

Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, perceived health status, social support, dietary habits, physical activity; and diabetes mellitus within Palestinian population?

The results of the regression analysis demonstrate that the model exploring the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status); and participants adherence to health-promoting behaviors (physical activity, dietary habits), and diabetes mellitus. Four predictor variables, gender, income, dietary habits, and perceived health status, significantly negatively contributed to the model. These findings, however, may not reflect the actual association. There might be variables that needed to be included or excluded in the model to obtain a positive significant association. Furthermore, education attainment, governmental medical insurance, and social support were significantly positive contribution to the model. This suggests that the males with insufficient income, poor dietary habits, and low perceived health status were not associated with diabetes mellitus. The model predicted that the greater the individual's years of education, additional sources of social support, and having governmental medical insurance were associated with higher frequencies of

diabetes mellitus. These suggest that low levels of education and having to depend on the immediate family to cover their daily living activities predict higher levels of diabetes.

In this study, Illiteracy was found to be dominant of this age group. Forty eight percent were illiterate and 15.0% were semi-illiterate. These significant percentages affect the implications of education materials about health promotion and chronic disease risk factors. Illiterate people are limited with the information they can obtain about health topics, they might lack the basic skills to understand a health story in the news or instructional manuals. "When literacy collides with health care, the issue of health literacy; defined as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions begins to cast a long patient safety shadow (The Joint Commission report, 2007)".

The findings from this study were similar with previous ones. Almost thirty percent of the elderly males are found to have diabetes mellitus, leaving them vulnerable to disabilities, poor quality of life and high cost of long term treatments. According to the household survey of 2010, 70.7% of elderly aged 60 years and older had at least one chronic disease (71.6% in the West Bank and 68.7% in Gaza), (PCBS, 2013). Shaw JE, et al, (2010) shows the estimated increase of diabetes mellitus prevalence is expected to increase from 2010 through 2030, there will be a 69% increase in numbers of adults with diabetes in developing countries and a 20% increase in developed countries. The elderly population in this study mainly retired or jobless 35.1%, reported not having sufficient income. This might lead to inadequate access to healthcare services, poor adherence to

the diabetes mellitus treatments and increases the risk of early death in such disadvantaged groups. Abu-Rmeileh (2013) had similar findings with this study; diabetes mellitus increases the presence of other co-morbid conditions and serious diabetes mellitus complications (Abu-Rmeileh, et al, 2013).

The International Diabetes Federation (IDF) estimates the Global Burden of the Disease, especially in the MENA (Middle East and North Africa). Their reports are broad and do not apply to the unique living conditions of the Palestinians. Many researchers have studied diabetes mellitus in multiple contexts, and a study indicated that obesity is among the risk factors of developing diabetes (Abu-Rmeileh, Husseini¹, Capewell & O'Flaherty, 2013). Engagement of the health system at the Palestinian Ministry of Health is crucial, to initiate multi-sectorial policy interventions addressing the increase prevalence of obesity and diabetes mellitus. WHO recommended 35% reduction of body weight to achieve highest prevention of diabetes. This goal is not easy to achieve, but such decrease in body weight is a necessity to slow down the prevalence of diabetes in Palestine. This forms an economic burden on the family and local authority to provide medications, and to treat complications (WHO, 2013).

Policy and decision makers need to consider the major determinants of the rise in diabetes mellitus, consider management and prevention for obesity, and promote awareness of daily calorie intake, along with increasing physical activity. To minimize the prevalence of obesity that leads to diabetes, which is highly alarming in OPT and other developing countries, a serious consideration regarding obesity reduction, and regular physical activity, increasing level of higher education and resources of income, as well as changing diet to healthy habits will enhance population health and add quality to

their life. These changes need to occur in order to be in compliance with The American Heart Association Council on Epidemiology and Prevention (2008), which “provides an ecological framework for obesity prevention that emphasized the importance of the social, environmental, and political context and their powerful influence on the behavior of families and individuals.”

Finally, in this Study, it was not possible to calculate reliable physical activity level measurements other than walking activity. The survey did not specify other forms of physical activity the elderly might regularly engage in. Generally, it is difficult to obtain a reliable physical activity in most low-income and middle-income countries, for the reason of absent policies to define and address physical inactivity (WHO burden of noncommunicable diseases, 2013).

Research Question Three

Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, perceived health status, social support, smoking habits, dietary habits, physical activity; and cardiovascular disease within Palestinian population?

The results of the regression analysis demonstrate that the model exploring the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status); and participants adherence to health-promoting behaviors (physical activity, dietary habits, smoking habits), and cardiovascular disease. Three predictor variables, gender, smoking habits and perceived health status, significantly

contributed to the model. Males with smoking habits are more likely to have a cardiovascular disease, and individuals with low perception of health status are negatively associated with cardiovascular disease. This suggests that gender and smoking together with the conventional risk factors of cardiovascular disease, the poor, elderly, and higher levels of tobacco consumption, increased risk of cardiovascular disease. Cigarette smoking is prevalent in West Bank, and is one of the risk factors associated with CVD (Lopez, E. 2003)

In this study, the prevalence of CVD was 15.0%, which is similar in findings to a study conducted in Gaza Strip about gender and cardiovascular disease. Jamee, Abed & Jalambo (2013) found the cardiovascular patients to be smokers, with diabetes mellitus, hypertension, dyslipidemia, and having a family history of cardiovascular disease. The study also found cases of myocardial infarction was twice in males than females (53.5% in male, 25.7% in female), and 77.4% of diagnosed coronary artery disease are male, 37.4% were 60 years and older (Jamee, Abed & Jalambo, 2013). This suggests that the high risk of cardiovascular disease in males might be caused by the social and cultural norms accepting males to be smokers, while it is not popular to have young females as smokers, especially in public. In addition, aging is a risk factor for cardiovascular disease, along with the higher number of years of being smoker and higher number of cigarettes the individuals' smokes per day.

The Palestinians and the Israelis both experiences the stressors of the long-term conflict on daily basis, however the life style for both are widely different (WHO-MONICA World Health Organization Monitoring Trends and Determinants in Cardiovascular Disease), The deprivation of power and lack of authority of the

Palestinians supposedly causes chronic stress, which may contribute to an excess consumption of cigarettes and risk of developing CVDs. Furthermore Israeli checkpoints create a permanent obstacle, and a physical wall was built surrounding the Palestinians living areas to prevent free movements through or between communities. Walking is prohibited through these communities, unless going through those checkpoints, which form struggle on a daily basis. Nevertheless, the lower socioeconomic status and low educational level of the Palestinians also plays an important role in the prevalence of hypertension, diabetes and cardiovascular diseases (WHO Monica Project, 2005).

Although cardiovascular disease CVD is the leading cause of morbidity and mortality around the world, diabetes and hypertension are among the risk factors for a person to have CVDs. Approximately 65% of people with diabetes die from some form of heart disease (micro and micro-vascular complications) or stroke. It is found that individuals with diabetes have great risk of developing cardiovascular disease CVD than people without this metabolic disorder (American Heart Association, 2013). In United States, a study conducted by Indiana University-Purdue University Indianapolis and the Marion County Public Health Department (2013) found that a low-income urban neighborhood on the east side of Indianapolis, had higher prevalence of diabetes, hypertension, heart disease and stroke than in other areas of Marion County. These findings are explain the ironic Palestinian socio-economic situation in which, chronic diseases are highly connected to dietary habits, physical activity, smoking, low income, and low education level that contribute to these diagnoses. The USDA's Economic Research Service, 2013 estimates that 23.5 million people in the U.S lack access to fresh

fruits, and vegetables, and relying on pre-prepared meals, which causes obesity, diabetes, and cardiovascular disease.

Although people have no control over unmodifiable risk factors like age, gender, ethnicity, and family history, following a healthy diet and engaging in regular physical activity can prevent obesity, diabetes mellitus and hypertension, which are known to cause heart disease. A high fat saturated diet contributes to increases in the risk of heart disease and stroke, and is estimated to cause about 31% of coronary heart disease and 11% of stroke worldwide (World Heart Federation, 2013).

Finally, being a refugee applies to situational influences in Pender's Health Promotion Model, and has presumed negative physical, psychological, and financial angles that will direct certain health behaviors. Unfortunately, it is not feasible to change the individual refugee status. It is imperative to this vulnerable underserved population to get benefit from empowerments, and enabling them to be responsible about their own health. A public health advocacy could be used to help people change unhealthy behaviors to a healthy one, encourage them to abstain from smoking, be physically active, build a community with focus groups on refugees, provide them with intensive education about chronic diseases risk factors, provide picture brochures to include illiterate people with this education, and media influence can all be a tremendous value in changing unhealthy behaviors.

Research Question Four

Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, perceived health status, social support; and smoking habits within Palestinian population?

The results of the regression analysis demonstrate that the model exploring the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status); and participants adherence to health-promoting behaviors the smoking habits. Three predictor variables age, gender, and refugee status, significantly contributed to the model. Males were negatively associated with smoking habits, while age and refugee status were positively associated with smoking habits. This suggests that males were engaging less in the smoking habits, while refugees were engaging more in smoking habits along with older participants. Refugees live in poor conditions that increase the factors associated with smoking in the occupied Palestinian territory (oPt). Palestinian refugees smoke to relax, and to forget life stressors, (ICPH, Birzeit University, 2010). There is no difficulty in buying cigarettes, which can contribute to a higher probability of being a smoker. Although societal perceptions and attitudes are accepting of smoking for adult males, substantial variation exists between the findings of this model and mentioned earlier findings of this study. The study hoped to provide evidence for the link between smoking and its associated factors was achieved.

In this study 2.4% of the participants found to be smokers, which differs from previous research where smoking prevalence was very high among men 53.7%, but very low among women 5.2% for the age group 25 and older (Abu-Rmeileh, Hussein, Capewell & O'Flaherty, 2013). This difference in the percentages of smokes

is related to including youth and both genders in their study. Moreover, the cigarette and water pipe smoking are the most popular in oPT, yet smoking water pipe is less practiced in the community. Anti tobacco consumption laws, have been passed in the occupied Palestinian territory, banning smoking in public and prohibiting advertisements for cigarettes through newspapers, magazines, TV, billboards, and in social events. This law, prohibiting not only smoking in public, but also the sale of tobacco products to minors; unfortunately it has not yet been implemented (ICPH, Birzeit University, 2010). . There is an urgent need at the health education level to focus on parents, family, and the community at large to enforce positive coping mechanisms with socio-economic- political conditions, instead of addressing challenging life events through a harmful behavior toward health by smoking. In addition, health education should replace the perceptions and attitudes of accepting smoking with the dangers to health by smoking, and to increase attention toward the increasing levels of water pipe use (ICPH, Birzeit University, 2010).

Research Question Five

Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, perceived health status, social support; and dietary habits within Palestinian Population?

The results of the regression analysis demonstrate that the model exploring the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status); and participants adherence to health-promoting behaviors the

dietary habits. Six predictor variables, income, education attainment, employment status, governmental medical insurance, perceived health status, and social support significantly contributed to the model. Insufficient income and employment status were significantly negative associated within the model, the greater the individual's years of education, with additional sources of social support, with higher perception of health status, and having a governmental medical insurance, were all associated with higher scores on the dietary habits scale. This suggests that Palestinians are culturally consuming Mediterranean diet, which includes olive oil on daily basis. Palestinian food contains olives, pita bread, short grain rice, red or white meat, local fish, and lentils. Dairy products such as white cheeses and plain yogurt are made of whole milk. Dates, dried figs, raisins, and various nuts such as almonds and walnuts are used to prepare multiple meals and making desserts (ABC of Arabic Cuisine, 2007). Traditionally, meals are prepared and then eaten in the household.

It is reported that the availability of food varieties can be strongly connected to the family income, and individuals eating habits (The Conference Board of Canada, 2012). In 1993, the Mediterranean diet was noted to be low in saturated fat content, and high in beneficial fats. Monounsaturated fats can be found in olive oils, and polyunsaturated in fish, legumes and nuts, which are ironically a major ingredients and key reasons for the beneficial health effects of this diet on the cardiovascular system (Dixon LB, 2007).

In this study negatively significant associations found between dietary habits scores with income, and employment status respectively, it suggested that the individuals who are jobless and their income is insufficient have no choice but to eat the affordable

food like olive oil, legumes and consume the soy milk provided by UNRWA, this may explain the protective effects of being unemployed with not sufficient income on the dietary habits. The study provided evidence for the link between insufficient income and being unemployed with poor dietary habits, which was achieved with the model at this time.

The findings from this study is similar to previous researches, when recently in United States, data were obtained from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance Survey showed less than 25% of the Americans are physically active and taking the daily recommended amount of vegetables and fruits (CDC, 2012). In this study 2.8% reported to eat vegetables weekly, of those 17.6% eats vegetables up to three times a week, while 24.7% reported eating fruits weekly, of those 17.7% eats fruits three times per week. Palestinians rely on legumes as their main source of protein, 21.7% reported eating meat, chicken, fish and legumes four times a week. The transition in Palestinians life style increased the consumption of typical sugar rich foods; soft drinks, artificial juices from concentrate, in addition, the market is full of local and imported sort of candy and biscuits, many of these products are lacking the nutrition value labels for the consumers (e.g.: calories count and grams of sugar) per serving and proper packaging safety. In this study 28% reported consuming sugar rich food weekly, of those 19.7% using sugar more than twice a week, that is similar to other developing and developed countries (Turkey, Saudi Arabia, Tunis and USA). Similarities include sedentary lifestyle, physical inactivity, and increased consumption of processed food with high fat and salt content. The lack of public awareness of the healthy diet, and the health condition of the Palestinian elderly urge the local government to encourage maintaining

healthy traditional Mediterranean diet, which is known to be heart healthy diet (Abu-Rmeileh, et al, 2013).

Research Question Six

Is there a relationship between age, gender, income, refugee status, educational attainment, labor force status, marital status, health insurance coverage, perceived health status, social support; and physical activity within Palestinian Population?

The results of the regression analysis demonstrate that the model exploring the relationship between personal factors (age, gender, perceived health status), perceived barriers to action (insufficient income, education attainment, type of health insurance), interpersonal influences (social support), situational influences (refugee status, marital status, employment status); and participants adherence to physical activity. Five predictor variables age, gender, refugee status, employment status and perceived health status, significantly contributed to the model. The greater the refugee males perceived their health status, the more association with higher frequency of regular physical activity. This suggests that several socio-cultural factors could be affecting the health-promotion behaviors of the Palestinian communities, their regular participation in physical activities can be explained by their work outside the home and exposure to urban lifestyles, where they lack the automobile vehicles in household to go from place to another. The dissemination of information about the effects of regular physical activity should be integral to health outcomes; Regular physical activity plays a great role in the prevention of obesity, hypertension, diabetes mellitus, and cardiovascular disease (Guariguata L, et al, 2011). Physical activity which was resembled by regular walking, is not considered as a leisure time within the Palestinian culture, rather the men are

involved in occupations connected with heavy physical activity is more likely to explain this variable within the refugee males context . Among unemployed older men, the significant negative association with physical activity identifies a modifiable factor that can be targeted for promoting health behaviors. Finally, Palestinians physical activity patterns and prevalent smoking as lifestyles associated with noncommunicable diseases, such as hypertension, diabetes, and cardiovascular disease. Palestinians can benefit from physical education program to spread abroad regular physical activity as a health promotion behavior instead of practicing physical activity in corresponding to socio-cultural factors.

Summary of Findings

Here, the researcher described the demographic characteristics and the health status of the Palestinian population living in the occupied Palestinian territory. The researcher have used not only standard indicators like morbidity, and mortality rates, but rather used a subjective indicator like elderly's perception of health their and the availability of social support system around them. Pender's Health Promotion Model used to analyze and understand the behavior-specific cognitions and effect on health and well being of the socio-economic and cultural conditions in the occupied Palestinian territory. The study indicated the impact of the noncommunicable diseases on the health system, and concluded that noncommunicable diseases risk factors are influenced by economic, social, and political environment, along with gender and personal behaviors.

The elderly in oPT, lacks the access to quality health care services, physically inactive, have insufficient income, and chronic smokers with no job security or welfare system. Considering the implications of the research findings for protection and

promotion of health of the Palestinian elderly population, and the relevance of these indicators and analytical framework. Pender's Health Promotion Model was adopted to emphasize the capability of people to change unhealthy behaviors and adhere to healthy ones within the context of the daily life obstacles caused by the chronic war condition. Moreover, it can be easy to propose recommendations, but commitments to a plan of action to enhance the life style are not easy. Healthy diet, regular physical activity, and quitting tobacco consumption are among the behaviors that are challenging to change.

The research has the evidence assembled on the factors that affects health outcomes, and identifying the needs of elderly. National prevention and control Programs for healthy nutrition, physical activity, smoking cessation, hypertension, diabetes mellitus, and cardiovascular diseases, are imperative to improve the health and quality of life of elderly. In addition, the Palestinian should recognize that the structural, cultural and political conditions that they sustains, is in consequence with chronic diseases risk factors, but it is possible to minimize the occurrence of chronic diseases through controlling obesity, blood pressure, diabetes, and smoking.

Recommendations

The Ministry of Health in oPT is supplied by data from PCBS national surveys, along with the UNRWA and WHO annual reports, that enrich and strengthen the health system services. Unfortunately, the condition is unlike the developed neighboring countries in which, the local government of the Palestinian's lacks the knowledge at large of elderly health needs leaves them vulnerable to poverty and disabilities caused by chronic diseases. According to the Palestinian Central Bureau of Statistics in 2010, Life expectancy has increased from 67 years in 1992 to 71.3 years in 2012 for males, and from

67 years to 74.1 years for females, this increase in Palestinians' life expectancy, stresses out the need for long-term programs directed toward geriatric health.

In the scope of National Burden of noncommunicable diseases, emerges the need to develop Health Promotion environment for the society, especially for the poor and disadvantaged communities, includes refugees and elderly.

The Ministry of Health needs to re-orient the healthcare professionals. The Palestinian Ministry of Health, the UN Relief and Work Agency, non-governmental organizations, and the private medical sector, needs updated education about the complex health needs of the elderly. A comprehensive national policy based on medical-social programs for ageing people would be valuable. These national policies maintaining a safe access to high quality health services, and initiating routine screening for early detection of hypertension, diabetes mellitus, and cardiovascular disease, especially for individuals who are obese, smokers, and physically inactive. Elderly with poor economic status could benefit from initiating income security programs to respond to the financial needs of the elderly.

Limitations of the Study

- Since the data used in this study was from a survey previously collected by the researchers, it was not feasible to clarify specific meaning and the method of entering certain data on the merged household-elderly SPSS file.
- The study was limited to the elderly who were asked health promotion behavior questions of the entire surveyed sample.

- Accuracy of data comprises different aspects of the survey, mainly statistical errors due to the use of a statistical sample, as well as non-statistical errors due to staff and survey tools, in addition to response rates in the survey and its effect on estimates.
- Proxy collected data used in this study, which create a potential for recall bias, mainly about their dietary habits and walking activity.
- Since the data reported in this survey are based on a sample survey and not on a complete enumeration, there may be sampling errors as well as non-sampling errors.
- Possible errors resulting from the way the fieldworker presented a question during the interview, and errors resulting from the way the respondent understood and answered the questions of the survey.

Conclusions

The understanding of the risk factors of noncommunicable diseases is valuable in planning for preventions. WHO reported that these diseases are “preventable” by educating the society. Starting with the healthcare providers, increasing public health literacy, and health promotion behaviors are the activities that should be emphasized. Public health awareness may reduce most of the noncommunicable disease risks through regular physical activity, avoiding tobacco consumption and passive smoking, adopting a healthier dietary habit with increase consumptions of vegetable and fruit, not using food containing fat, salt, sugar, and maintaining a healthy body weight (WHO, International plan of action on aging: report on implementation, 2014).

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DATE: February 18, 2014

TO: Nawal Qneibi
CC: Glenn Hagerstrom, PhD
FROM: Social Behavioral IRB

PROJECT TITLE: Chronic Diseases in Occupied Palestinian Territory
REFERENCE #: NHS Hagerstrom and Qneibi 022014
SUBMISSION TYPE: Request for Human Research Determination

ACTION: DETERMINATION OF NOT HUMAN SUBJECT RESEARCH
DECISION DATE: 02/18/14

Thank you for your submission of the human research determination request form and permission letter for the above-referenced project.

The Research Integrity Office reviewed the information provided and determined that the proposed activity does not meet the federal definitions for human subject research (see below) and consequently, does not require oversight by an Institutional Review Board.

Definitions

The regulations at 45 CFR 46.102(d) state: "Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."

The regulations at 45 CFR 46.102(f) state: "Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains (1) Data through intervention or interaction with the individual, or (2) Identifiable private information."

Project Summary

The investigators propose to use deidentified data from the Palestinian Family Health Survey (2006-2007) to explore the relationships among Palestinian demographic and socioeconomic factors, and chronic disease. The original survey targeted all Palestinian households normally residing in the Palestinian Territory. Variables of interest to this research include demographics, refugee and labor force status, health insurance coverage, smoking, physical activity, diet, and chronic diseases. The data were provided to the investigator without any information that could be linked to an individual participant in the original survey.

If you have any questions, please contact Gwenn Snow, MS, RD at 774.784.3506 or gwenns@unr.edu. Please include your project title and reference number in all correspondence with this committee.

MEMORANDUM

October 3 2013

TO: Glenn Hagerstrom, Committee Chairperson

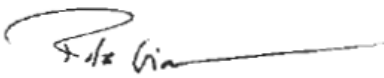
FROM: Professor Rita Giacaman, rita@birzeit.edu

RE: Permission for Use of Data.

As the data was given to the Institute of Community and Public Health by the Palestinian Central Bureau of Statistics (the owner of the data) for any use it wishes, including use by students, I indicate:

- That I give the graduate student at UNR, Nawal Qneibi, permission to use the data collected during the Palestinian Family Survey 2010 for her thesis project.
- That there are no identifying variables in the parent data set; the student will be given no access to identifiers.
- That the original data was collected in line with country's ethical standards; and that the design of the survey complied with the standard specifications of health surveys previously implemented by PCBS.

This document was given upon the student Nawal Qneibi's request.



Rita Giacaman

Research and Program Development Coordinator