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Women's Perspectives about Menopause in the Gaza Strip

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Women's Perspectives about Menopause in the Gaza Strip

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Dedication

To the soul of my dear father

To my beloved mother

To my kind brothers and sisters

To my friends and colleagues

To whom helped me and wished the best for me

I dedicate this research for all of them

Sally Mohammed Salha

Declaration

I certify that this thesis submitted for the degree of master is the result of my own research, except where otherwise acknowledged, and that this thesis or any of its parts has not been submitted for higher degree to any other university or institution.

Signed:

Sally Mohammed Salha

Date: --------/---------/---------

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With my appreciation and respect,

Sally Mohammed Salha

Abstract

Menopause is a transitional stage in women's life. Menopause is viewed as a normal ageing process; however, signs and symptoms associated with this process and their impact on women were not discussed before among menopausal women in Gaza Strip. An analytic cross sectional study was conducted to understand the concerns and challenges of menopausal women in terms of knowledge, Attitude, and Practice (KAP) in addition to the Quality of Life (QoL); and to identify recommendations that can help menopausal women overcome these challenges.

The research study was conducted using a sample size of 400 menopausal women aged 40-60 years old residing in Gaza for at least 2 years. The sample of menopausal women was selected randomly from three main primary health care facilities in Gaza strip. The study used a quantitative method analysis by administering a survey composed of three parts targeting socioeconomic, KAP and QoL situation.

The main results of the study showed that the mean age for the women is 52.47 years with only 17.8% who had bachelor and/or high studies degrees. Around 86% of these women are unemployed and half of the families of these women have a monthly income of less than 1000 NIS. The mean age of menarche was 13.7 years, while the mean age of menopause was 47.12 +/- 3.89 years. 55.2% used birth control methods at one point in their life. The mean of the pregnancy times for the women was 7.73; the mean number of children was 6.29; and 14.7% had more than two abortions. 70% were between 14-21 years at their first pregnancy.
Around 49% of the surveyed women had poor to moderate level of knowledge about menopause with 75.3% had their source of information from family and friends. 66% positively viewed menopause; while 56.8% negatively viewed hormone replacement therapy. The mean for the knowledge, attitude, and practice scores was 59.8%, 60.3%, and 46.8% respectively.

Regarding lifestyle factors, more than half of the surveyed women don't practice exercise (workout) and 82.8% try to follow a special type of diet. Also, 35% indicated the use of food supplements and almost all of them don't smoke. Around 56% of the surveyed women evaluated their health as being between poor and fair. All surveyed women identified at least one stressor in their life with large effect on one third of them; and 41.6% of surveyed women can poorly to moderately handle stress. All surveyed women indicated to have at least one disease with sight problems (31.3%) followed by diabetes, teeth and gum problems and fatigue, around 20% each.

Inferential statistics showed that the menopausal age is affected by the BMI, employment status, pregnancy times, herbal drinking, and menarcheal age; however, no correlation between menarcheal age and menopausal age was found. It was also found that the knowledge score is affected by women's age, marital status, refugee status, educational status, employment status, menopausal status, as well as being the main breadwinner for the family. The attitude score is affected by the refugee status, educational level, practicing exercise; self-evaluation of health and stress management. The practice score was found to be affected by the marital status, educational level, employment status, BMI and being the main breadwinner. The QoL score is affected by the marital status, employment status, being the main breadwinner, longevity of menses, severity of dysmenorrhea, number of meals, drinking herbal and caffeinated drinks, and the varied life stressors. Furthermore, it was found that practice score is positively correlated with the knowledge score; however, the knowledge and the attitude were not correlated. The QoL score was correlated to both the knowledge and the attitude scores.

This research study identifies a set of recommendations to improve KAP and QoL among menopausal women and concluded that additional multidimensional studies need to be conducted locally and regionally to further tests associations and casualties, and urges to inform the development of evidence-based policies and programs to improve women's health throughout their menopausal years.

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List of Abbreviations

ACG	Angle Closure Glaucoma
ANM	Age at Natural Menopause
ANOVA	One Way Analysis of Variance
AUB	Abnormal Uterine Bleeding
BMD	Bone Mineral Density
BMI	Body Mass Index
CAM	Complementary Alternative Medicine
CHD	Coronary Heart Disease
CIA	Central Intelligence Agency
CKD	Chronic Kidney Disease
CVD	Cerebro-Vascular Disease
DES	Daily Energy Supply
EMR	Eastern Mediterranean Region
EMRO	Eastern Mediterranean Regional Office
FMP	Final Menstrual Period
GBV	Gender Based Violence
GCC	Gulf Cooperation Council
GDM	Gestational Diabetes Mellitus
GP	General Physician
GS	Gaza Strip
HRT	Hormone Replacement Therapy
HRQoL	Health Related Quality of Life
IBS	Irritable Bowel Syndrome
KAP	Knowledge, Attitude, and Practice

MD	Major Depression
MENA	Middle East and North Africa
NGOs	Non-Governmental Organizations
NIH	National Institutes of Health
OA	Osteo-Arthritis
OAG	Open Angle Glaucoma
PCBS	Palestinian Central Bureau of Statistics
PCOS	Poly-Cystic Ovary Syndrome
PHC	Primary Health Care
PTSD	Post-Traumatic Stress Disorder
QoL	Quality of Life
ROS	Reactive Oxygen Species
STIs	Sexually Transmitted Infections
TSH	Thyroid Stimulating Hormone
UNRWA	United Nations Relief and Works Agency for Palestine refugees in the Near East
UTI	Urinary Tract Infection
WHI	Women's Health Initiative
WHO	World Health Organization

Chapter One

1.1 Introduction

All women experience a transitional stage in their life, which indicates the end of their reproductive role that is called “menopause”. Menopause, which is composed of two Greek words, “meno”, (monthly), and “pausis”, (stop or cessation), is defined by the World Health Organization (WHO) as the permanent cessation of menstruation as a result of the loss of ovarian follicular function (WHO, 1981). It is diagnosed after 12 months without a menstrual period, with the absence of any physical disorder, and this event occurs in the 40s or 50s of women’s life. The mean age of natural menopause was found to be 51 years in industrialized nations and 48 years in poor and non-industrialized nations (Sapre & Thakur, 2014). It can occur naturally or surgically as in the case of oophorectomy along with or without hysterectomy (Mustafa and Sabir, 2012), or it can be induced by radiation or drugs.

The age at starting menopause differs according to different factors (Ceylan and Ozerdogan, 2014; Emaus, et al., 2013; Schoenaker, et al., 2014; Rosner and Colditz, 2011). The term menopause can be classified according to the onset age of menopause into pre-menopause, perimenopause, and post-menopause. The premature menopause, which is defined as premature ovarian failure before the age of 40 years can be natural or induced as a result for medical or surgical interventions (Okeke, et al., 2013). Menopausal age may depend on the heritable factors such as the mother’s age at menopause, gynecological and obstetrical history such as the menarche age, gestational age, oral contraceptive use, number of pregnancies, lifestyle factors such as tobacco and alcohol use, BMI and other factors (Ceylan and Ozerdogan, 2014).

Women’s points of view; how menopausal women do look at menopause, and how they describe their life after this stage are claimed in this research in order to understand the complexities of the experience of menopause by Gazan women from different backgrounds to examine and interpret the reality of the menopausal transition and to identify the common elements and themes that occur as a result of the complexities of this experience. Although menopause is a biologic event, social meanings determine how a woman perceives and interprets the nature of this event.

This study includes a KAP survey referring to the knowledge, attitude, and practice of a specific topic which is an educational diagnosis of the community; where knowledge processed by a community refers to their understanding of any given topic, attitude refers to their feelings towards this subject, and practice refers to the ways in which they demonstrate their knowledge and attitude through their actions. Moreover, it includes an evaluation of the women's health related quality of life for the menopause-related symptoms.

Although menopause is considered as a normal stage in women's lives, there can be numerous symptoms and changes that may significantly and often negatively impact health and feelings of well-being during this time. These symptoms can lead to feelings of frustration, embarrassment, and depression for many women, impacting their relationships and quality of life.

The resultant deficiency of estrogen and progesterone related to the loss of the ovarian activity after menopause, can initiate some biological dysfunctions, such as skeletomuscular, vasomotor, genitourinary, and psychological symptoms, like emotional slow down, and loss of self-confidence. Other secondary complications could arise, such as osteoporosis, cardiovascular diseases, and strokes (Hu, et al., 2017; Lisabeth and Bushnell, 2012). However, the menopausal associated symptoms as hot flushes, irritability, mood swings, and insomnia differ from one female to another.

Menopause-related emotions can range from mild mood swings to severe depression. Many mild symptoms can be managed through lifestyle changes as exercise, healthy diet, yoga, dietary supplements, medication, or a combination of these options.

Many women after menopause have a negative impact on their lives as the physical, psychological, psychosocial and environmental influences have an important bearing on the way in which a woman approaches and responds to menopause (Bhutani, et al., 2013).

Psychological factors such as personal or inter-psychic (personality, self-esteem, and coping skills) and intra-psychic (relationship issues and social support) may contribute to the onset, course, and response to perimenopausal period (Afridi, 2017).

The fluctuation in the levels of hormones which lead to various symptoms such as hot flashes, night sweats, itchy skin, migraine headaches, breast fullness or tenderness, vaginal

dryness and irregular periods, and midlife weight gain as well may make women feel unattractive, exhausted, depressed, and moody. These symptoms may make them feel isolated and confused. Moreover, menopause could be a stressful transition due to various beliefs related to fertility and a gradual diminishing role in society.

During menopause, women have to change their lifestyles, and habits to adopt more healthy lifestyle, where primary health care centers may have an important role in their health promotion to manage or receive complaints such as vasomotor sleep disorders, weight gain, and other psychological symptoms, where the GP has to recognize these symptoms and their impact on the women's quality of life (Cavadas, et al,. 2010).

As the life expectancy of women has increased and continues to increase, many years lie ahead after menopause; and yet, sometimes medicines or other treatments are needed, around the menopause, where total the cholesterol, LDL may increase, and HDL decrease, leading to a high risk of blocked arteries, and other problems may develop that require primary health care services.

Identifying the quality of women's perception of menopause and the menopausal symptoms could facilitate convenient programs development for the aim of promoting women's health and improving their quality of life during menopausal years for the coming generations of menopausal women, where the biological, psychological, social, and cultural factors are associated with both positive or negative attitudes and practices. Discussion about menopause, stress management, health behaviors, and treatment choices for mid-aged women in primary health care centers may enhance women's knowledge and help them deal with menopausal emotional and practical aspects.

1.2 Problem Statement

While menopause is a natural and physical condition affecting all women, this phenomenon is of high importance in Gaza, where the life expectancy at birth for females in Gaza Strip is around 74.6 according to the Palestinian Central Bureau of Statistics (PCBS, 2016); meaning that a high proportion of menopausal women live in Gaza. The women populations who are above 40 years conform about 20% of the female population, counting for around 190 thousand women, according to the PCBS (2017). As women

spend a significant period of their life after menopause, they may suffer from different menopausal consequences with different prevalence rates affecting their quality of life.

As women age, they may face different social, economic, and cultural difficulties, and these are obvious after menopause (Afridi, 2017; Geukes, et al., 2016). Generally, women are the caregivers of their families, and are considered as the backbone for the social relationships, and after menopause, these relationships could be affected where culture, health, previous experience of mood problems, and life style will all impact the menopausal symptoms and as a result will lead to social isolation due to the hormonal changes, and the cultural perceptions.

After menopause, the ovaries make very little estrogen. Low levels of estrogen and progesterone raise the risk for certain health problems, such as heart diseases, osteoporosis, and urinary problems. Although the physical symptoms are associated with menopause, the emotional effects can be equally pronounced and troublesome. Common emotional side effects include irritability, anxiety, and lack of motivation, worsening of pre-existing depression, forgetfulness, and sleep difficulties. Increased stress, anxiety, and fear can partially be attributed to physical changes, such as decreasing levels of estrogen and progesterone. However, menopause happen to coincide with what can be the most stressful time in a person's life; such as worries about getting older, kids moving out of the home, job stressors, planning for retirement, and financial worries. All these events happen in high frequency in the age between 40s and 50s. The stress alone may be an adequate explanation for many of the mood and mental symptoms women suffer during menopause. In some cases, some women may experience menopause as the time of isolation or frustration.

The gonadal hormones are known to influence the regulation of emotional responses and affective states (Van Wingen, et al., 2011); it was proposed that the female's response to the stress situation is characterized by the tend-and-befriend more than the fight-or-flight pattern; this can translate the mechanism of the female's caregiving system (Taylor, et al., 2000) which can enhance communication circuits, emotion circuits, the drive to tend and care, and the urge to avoid conflicts. These make a woman loving and caring. While fluctuations in progesterone and estradiol are associated with increased vulnerability for mood disorders, testosterone is mainly associated with social dominance, aggressive, and antisocial behavior (Van Wingen, et al., 2011). The fluctuating or declining levels of

hormones during menopause means the end of all these attributes and also loss of interest in communication.

The physical and financial burden imposed by menopause associated symptoms is immense; a pervasive burden of menopausal symptoms across a wide array of health outcomes can impact the women's QoL, their ability to work, and on resources use and societal costs; menopausal symptoms could be associated with significant direct and indirect costs. The costs of symptoms treatment include pharmacological drugs, complementary and alternative medicine, physician visits, or telephone calls. Other costs such as reduction of work productivity, laboratory testing, management of adverse events, or even mobilization and practicing exercise at the gymnasium could be required for managing the menopausal symptoms (Utian, 2005).

In general, the females have different complexities during their lives beginning from the age of menarche to the age of menopause; this reproductive period has different difficulties and a psychological impact on their whole life. The researcher noticed that mid-aged women suffer from many stressors; where they always take care of their families, a little concern is oriented toward them; from this point, the researcher found that this category of people needs to be looked after by society, and thought of the importance of such a study to assess perceptions held by post-menopausal women in Gaza aged 40-60 years regarding their menopausal transition, to analyze the different relationships between menopause and the different educational, psychosocial, and economic factors, and to describe expectations, knowledge about the menopausal period of these women; women were asked about their personal experiences with menopause, their health related lifestyle changes since menopause, their frequency of discussing menopause, and their rating of preparedness for menopause, to discover and describe the meaning of the knowledge, attitude, and practices toward menopause, and how these women learnt about menopause to evaluate the HRQoL for these menopausal women for developing rich, full and insightful descriptions of the menopausal experience among Gazan women.

Knowledge gaps about this field and lack of awareness can negatively affect the attitudes, and accordingly, the practices toward menopause. In addition, little is known about the personal meaning or view of the menopausal transition as experienced by the Gazan women. For the mentioned reasons, the researcher aimed to study the menopausal perceptions in Gaza to highlight the importance of this phenomenon and its effects on

women, and the whole society in Gaza, where women are viewed as a very important part of this society, where they are the main caregivers of their families. It is obvious, that there is inadequate accessibility to information about menopause and insufficient facilities for routinely recommended physical testing of menopausal women, such as mammograms and bone mineral density examinations.

It is known that menopausal symptoms may have a great impact on quality of life; they may affect physical, emotional, and social aspects of a woman's life (Geukes, et al., 2016). As a result, the influence of psychological factors, lifestyle, body image, interpersonal relationships, and sociocultural factors in predicting levels of depression and anxiety in the menopausal transition cannot be ignored. Attention to women's health is important in all stages in life. However, health among middle-aged and elderly women has not received sufficient attention by scientists and policy makers (Jaspers, et al., 2015).

The health concerns of women in midlife have been neglected in low and middle income countries. There are currently no research studies to support the application of practices in the implementation of intervention and outcome strategies when addressing the psychosocial stressors associated with menopause. This lack of available information results in women struggling with the life changes associated with menopause. Health services tend to focus mostly on reproductive needs, and as women age their needs are neglected. In resource-poor settings many women may not seek healthcare because of a presumption that age-related needs are normal or natural and do not presume any additional care. Higher costs of healthcare delivery are required when a serious health condition developed because the women are not informed about it. Ultimately, more information and preventative approaches would reduce long-term costs for healthcare delivery. Also, information provided on healthy lifestyles and improved self-management should ultimately reduce health care expenditures.

This study aimed to understand the menopausal experience by the Gazan women to focus on improving women's well-being through developing community-based programming that seeks equipping them with evidence-based information and knowledgeable about healthcare delivery. This will provide women with an occupation and evidence-based preventative programs focused on educating them about menopause, gathering additional information, so community-based outreach support programs can be developed in the future for women experiencing menopause.

1.3 Problem Justification

The frequently increasing population in our country, especially in Gaza Strip, where the fertility rate was 4.5 births per woman compared to 3.7 births per woman in the West Bank during 2011-2013 (PCBS, 2016); the large female population which forms around 49.4%, or nearly half of the total population enhanced the researcher thinking of the need for conducting a study in the Gaza Strip, focusing on the general concept and perceptions towards menopause, and measuring the awareness regarding menopause for the first time.

Females live more than men with higher life expectancy. In the mid of 2017, the percentage of males aged 60 and over in Palestine reached 4.2% against 5.1% for females with a sex ratio of 86.0 males against 100 females (PCBS, 2017). Life expectancy at the age of 20 increased from 52.8 years in 2006 to 53.3 years in 2010 for men and from 55.1 years to 55.7 years for women for the same years (Qlalweh, et al., 2012). Most women live more than one third or may be half of their lives after menopause, along with being the base for families and for the coming generations, meaning that medical care oriented toward them became an important aspect of the modern medicine.

This research was conducted for the aim of obtaining new information to shed light on issues, often not regarded of importance in Gaza, and thus raise questions and hopefully, solutions for management of un-predicted issues. By doing so, this research hopes to gather more advanced knowledge of medical conditions and create treatments to provide solutions in Gaza, for the purpose of helping the promotion of societies by filling the information gaps through management and planning for future programs and studies regarding the menopausal topic.

Studies considering the reproductive health of population are limited in the Occupied Palestinian Territory, especially in the Gaza Strip, where the majority of the conducted studies include the reproductive issues which consider the antenatal and postnatal care, regardless of the quality of services, or mothers' needs before bearing, or after stop bearing children and enter the menopausal status (Shalash, et al., 2019). This research refers to various medical approaches to menopause in an examination of the incorporation of prevention and risk into an example of general medical practice.

This study is a representative study of such specific menopausal population, namely in the Gaza Strip. This study would be the first multi-objective study to be conducted in the Gaza Strip, where menopausal symptoms and their severity, quality of life for these women were studied in an analytical way in order to gain all possible information about this phenomenon, and accordingly assessing its effect on the different aspects of women's life. This study explores the importance of this phase in relation to the women and their siblings, highlighting the significance of this phase and its health-related consequences. This can help in planning and implementing effective program priorities to promote women's health during menopause, by addressing the most common problems or by identifying specific subgroups, whose needs may differ from other groups. The researcher expects that the results of this study add to women's knowledge, to society, and to research library in Gaza, Palestine.

1.4 Overall Aim

This study aims to evaluate the general perspectives of menopausal women in Gaza Strip who are between 40-60 years old. It focuses on assessing their perceptions and attitudes, analyzing their quality of life, and their menopause related symptoms. This study hopes to address those needs and develop specialized programs as well as other recommendations that may contribute to improve their lives.

1.5 Objectives

1. To assess the women's knowledge, attitudes, and practices towards menopause; to study the result of women's knowledge towards menopause on their attitudes and practices;
2. To define the various factors and aspects affecting menopausal age, knowledge, attitude, and practice towards menopause;
3. To analyze the quality of life for women after menopause; and
4. To analyze factors affecting the emergence of symptoms associated with menopause, and their severity; and to develop recommendations to improve the quality of life for women during that period of transition.

1.6 Research Questions

- Do women's occupation affect their knowledge toward menopause?

- Do highly educated women have a better attitude toward menopause?
- What is women's perception and self-image toward their body after menopause?
- How does society look at women after menopause through women's point of view?
- How do lifestyle factors for women after menopause look like?
- Does smoking affect menopausal onset and/or symptoms associated with menopause?
- Does menarche age impact menopausal age?
- Does familial history play a role in menopausal age?
- Does menopausal age affect the type of associated symptoms?
- Is osteoporosis or bone pain highly prevalent among women after menopause in Gaza?
- Is obesity or overweight highly prevalent among women after menopause?
- Do women who are physically active feel of less menopausal symptoms than those who are less active?
- Does the woman's family attitude toward her menopausal transition affect the appearance and the severity of associated symptoms?
- Does woman's degree of awareness toward menopause affect their attitude toward this phenomenon?

1.7 Context of the study

1.7.1 Demographic context

Palestine is a region located between the Jordan River, and the Mediterranean Sea, where the West Bank and Gaza Strip, are the two territories that are claimed for what is called the state of Palestine. The Palestinian population in those both areas is estimated at 4,780,978 million where the growth rate accounts for 2.68% per year, with a birth rate of over 4 children to every woman; a density of about 5,324 persons/km^2. Most of the population in Gaza is of children between 0-14 years. Percentage of population below 15 years at the end of 2016 was 42.7% in Gaza (World Bank, 2016). The population of people under 17 years old reached 900,023 by the end of 2017 in GS (PCBS, 2018). Refugees make up around 42% of population, where 66.7% of them live in Gaza, and 26% live in the West Bank (PCBS, 2016).

Gaza Strip is located between Egypt and Israel with an area of 365 square kilometers. Its climate is temperate with mild winters; dry and warm to hot summers. It has been inhabited since the 15 century B.C., and it has been dominated by different empires. After the British Mandate of Palestine, and the 1948 Arab Israeli war, Egypt administered the

newly formed Gaza Strip; which after that, was captured by Israel in the Six-Day war in 1967. After the agreements on Oslo Accords, Israel transferred the responsibility of Gaza to the Palestinian Authority till the 2001 uprising (Intifada) evolved, which was terminated by a peace agreement with Israel followed by the evacuation of the Israeli settlements in 2005. Since Hamas's takeover in 2006, tight restrictions have been enforced on goods and on individuals' movement (Rought-Brooks, 2015).

Gaza Strip with a 1,899,291 million, and a population growth rate of 3.3% in 2016, 4.13 children born per woman, is considered as one of the most densely populated areas with around 5239 capita per squared kilometer (PCBS, 2018). According to a UN report in 2012; by 2020, Gaza's population will reach 2.1 million and the basic infrastructure cannot keep up with the needs of the growing population (UN, 2012).

1.7.2 Socio-economic context

The urban population in Palestine forms around 77%, while the rural population forms 15%, and 8% of the population reside in refugee camps according to the PCBS (2018). The speed in population growth and the demand on new houses in Gaza Strip, made the built-up lands expansion reach to a critical level. By 2023, the projected urban area will have increased to 206.24 km^2 or 57.13% of the Gaza Strip (Abuelaish, 2018). Moreover, it is supposed that the built-up lands would cover 45.3% of the total area in Gaza Strip by 2036 (Attaallah, 2018); this suggests that urban planning is essential to control the expansion of built-up lands and to minimize the negative impacts of urbanization in Gaza Strip.

Before the second intifada in 2000, many jobs have been provided for Palestinians. However, after the intifada many workers from Gaza lost their jobs, which caused a steep decline in the economy (World Bank, 2003) while in 2005, some employment was provided till 2006. Currently, the economic situation is in continuous degradation, since the blockade has been imposed on the Gaza Strip in 2007 since Hamas' takeover. The unemployment rate for 15 years and above in Gaza for the year 2016 was 41.7%, where the gross domestic product per capita in 2015 was 996.3 (USD), in 2016 (PCBS, 2016). And for the year of 2017, the unemployed individuals from 15 years and above reached to 232,480 (PCBS, 2018).

The high population density, limited land access, restrictions on labor, and trade access across the borders, the electrical current shortage, cessation of imports have resulted in a high unemployment rate reaching to a poverty rate of 38.8% in Gaza Strip (PCBS, 2016),

and a hight poverty rate among individuals according to monthly consumption patterns of about 21.1% since 2011 (PCBS, 2016).

1.7.3 Healthcare context

After the signing of the Oslo Peace Accords in 1993, the newly established Palestinian Authority established the ministry of health in the West Bank and Gaza. Reform activities have been taking place in the health sector in Palestine with the involvement of several international aid and United Nations agencies, as well as the local and international non-governmental organizations (Giacaman, et al., 2003).

The Ministry of Health (MOH) is the primary provider of health services to the population, which pools and manages about 35% of all resources mobilized for the health sector followed by NGOs and UNRWA (The World Bank, 2008). It provides primary, secondary, and tertiary services for the Palestinians. In coordination with the existing sector stakeholders, the United Nations Relief and Works Agency for the Refugees of Palestine in the Near East (UNRWA), is responsible for the displaced refugee population, where it provides PHC services and purchases secondary, and tertiary care services when needed for the refugee population (Anan, 2010).

It was found by the World Bank that 8.1% of households in Gaza use Non-governmental organizations (NGOs) most frequently for their health needs (different needs as physical therapy, rehabilitation, medical training, and routine checkups).

The health status for people in Gaza is affected by internal political fragmentation, socio-economic decline, military actions, the physical, psychological, and economic isolation. Nowadays, the health sector is fragmented into two authorizing institutions in the west bank and the Gaza Strip. The division between the West Bank and Gaza has created two ministries of health and fragmented the decision making related to operational issues, investment planning and government initiated reforms in the health sector (World Bank, 2008). Health sectors are greatly influenced by the underlying macroeconomic context and demographic trends in a country. The lack of medicines, efficient logistics, and infrastructural challenges can impede health care providers to provide the necessary health care. Poverty and food insecurity is constantly increasing in Gaza. Nearly 47% of Gazan households struggle with food insecurity according to the PCBS Census (2017). Women in Gaza face many problems in times during and after military operations by Israel on GS, along with the political and economic challenges, leading to a huge psychological impact

on their lives, and on their relationships with their families, as they are the ones who take care of the young children and the elderly, facing many difficulties including shelter, water, sanitation, and hygiene (Rought-Brooks, 2015).
Donor-funded programs implementation is slow, funding shortages and political divisions resulted in serious neglect of key projects, such as those of the infrastructure, not to mention psychological therapy programs. In addition, the private sector suffers from huge losses leading to extensive damage of productive assets.

There is a narrow biomedical focus on menopause physical, social, cultural, and political dimensions of women's health in the midlife, which are poorly understood (Hammoudeh, et al., 2017). Where the socio-political context can deteriorate living conditions, women may be more insecure than men. In case of wars, for example, women are often more prone to a range of psychopathologies and to a worse quality of life than men (Al-Krenawi, et al., 2007). Palestinian women's health needs are constrained by structural barriers to health, with men forming the vast majority of policy makers and physicians providing services (Giacaman, et al., 2003).

1.7.4 Cultural Context

Menopause is a natural phase in a woman's life cycle; psychological changes during this phase are often linked to the socio-cultural context, and as menopause is highly affected by cultural context, this challenging phase is better met with the support of families and society. Palestinians in Gaza are largely Sunni Muslim, with around less than 2% Christian minority, and the culture is related to the nearby countries such as Lebanon, Syria, Jordan, and the Arab world.

Menopause like general health issues, is influenced by various cultural, socioeconomic, and lifestyle factors, which impact women's lives to different degrees; and where perceptions or practices towards menstruation and menopause are shaped as a result to the different cultures (Bello and Daramola, 2016; Morrison, et al., 2014), reflecting the need of assessing the menopausal cultural and socioeconomic factors and accordingly the perceptions in our society in order to facilitate the future efforts of menopausal women empowerment. In Gaza's culture, women after menopause may gain more respect from society, as an aging woman may have more space or freedom than young women would. However, the emphasis on the biological status of the reproductive role is negatively

affected by women's societal impact. This may develop a sense of fear and anxiety, mostly among their husbands or spouses.

As menopause is a staging area toward older age, and this period encompasses much broader processes of social change. It takes a biosocial approach to understand people's experience of health. Women may suffer from symptoms of menopause in silence in our country, and the physician's role is to deal sensitively with those women through asking about life history, as his/her role is to identify women who suffer from menopausal symptoms without being recognizing them. Identify the issue along with the social support can be very important for their general wellbeing.

Women's contribution to social, economic, and political development is very important because of their dual roles in productive and reproductive issues. Political participation is important for decision making, which is a key to bringing change. Likewise, women's economic empowerment is very important for societies' advancement and development. Many studies suggest that women's economic empowerment is a critical issue to speed up and enhance development and reduce poverty. In Gaza's case, however, this participation is often affected by the blockade and the lack of political resolution in Gaza. Females participation rate in labour force was very low in the first quarter of 2017, counting for 22.3% in Gaza Strip, against 68.6% for males (PCBS, 2017).

Violence against women and girls (gender based violence) in Gaza is on the rise. This is directly and indirectly affected by the constant cycle of violence, the siege, and the deteriorating economic situation, along with the traditional patriarchal norms and thus increasing the level of GBV. The percentage of GBV in Gaza increased to 51% according to the PCBS 2011 violence survey, in comparison with the percentage of 37% in Palestine in general. However, this phenomenon decreases against older women where they are often 'protected' by their grown up sons. This study suggests that women whom violence had been practised against may have worse consequences after menopause than those who had not been supposed to GBV. Violence can have direct consequences on women's health, and it can increase women's risk of future health issues. Studies consistently link some disorders such as irritable bowel syndrome; gastrointestinal disorders; and various chronic pain syndromes, including chronic pelvic pain with histories of physical or sexual abuse. The experience of abuse often erodes women's self-esteem and puts them at greater risk of of mental health problems, including depression, anxiety, phobias, post-traumatic stress

disorder. A good physician is one who is aware of the socio-cultural conditions surrounding women during menopause, and thus is capable of managing this phase carefully.

1.8 Operational Definitions

1.8.1 Natural menopause

The permanent cessation of menstruation resulting from the loss of ovarian follicular activity. It is recognized to have occurred after 12 consecutive months of amenorrhea, for which there is no other obvious pathologic or physiologic cause. Menopause occurs with the final menstrual period (FMP), which is known with certainty only in retrospect > or equals to one year after the event. An adequate independent biologic marker for the event does not exist (Sherman, 2005).

1.8.2 Premenopause

Is often used ambiguously either to refer to the 1 or 2 years immediately before the menopause or to refer to the whole of the reproductive period before the menopause (Sherman, 2005).

1.8.3 Perimenopause

It should include the period immediately before the menopause (when the endocrinologic, biologic, and clinical features of approaching menopause commence) and the first year after menopause. The term climacteric should be abandoned to avoid confusion (Sherman, 2005).

1.8.4 Menopausal transition

It should be reserved for that period before the FMP when variability in the menstrual cycle is usually increased (Sherman, 2005).

1.8.5 The climacteric

Is the phase in the aging of women marking the transition from the reproductive phase to the non-reproductive state. This phase incorporates the peri-menopause by extending for a longer variable period before and after the peri-menopause (Sherman, 2005).

1.8.6 Simple hysterectomy

Where >- one ovary is conserved, is used to define a distinct group of women in whom ovarian function may persist for a variable period after surgery (Sherman, 2005).

1.8.7 Menstruation (periods)

Periodic discharge of blood and tissue from the uterus. From puberty until menopause, menstruation occurs about every 28 days when a woman is not pregnant (NIHa, 2018).

1.8.8 Hormones

A messenger molecule that helps coordinate the actions of various tissues; made in one part of the body and transported, via the bloodstream, to tissues and organs elsewhere in the body (NIHb, 2018).

1.8.9 Premature menopause

Ideally should be defined as menopause that occurs at an age < 2 standard deviations below the mean estimated for the reference population. In practice, in the absence of reliable estimates of the distribution of age at natural menopause in populations in developing countries, the age of 40 years is frequently used as an arbitrary cut-off point, below which menopause is said to be premature (Sherman, 2005).

1.8.10 Induced menopause

Is defined as the cessation of menstruation that follows either surgical removal of both ovaries (with or without hysterectomy) or iatrogenic ablation of ovarian function (e.g., by chemotherapy or radiation) (Sherman, 2005).

1.8.11 Menarche

The first menstrual period, is a critical biomarker in the reproductive life of females. It serves as an intermediate health outcome that affects the women's wellbeing at later stages of life (Al-Sahab, et al., 2010).

1.8.12 Post-Menopause

It is defined as the period dating from the menopause. Although it cannot be determined until after a period of 12 months of spontaneous amenorrhea has been observed (WHO, 1981).

1.8.13 Hot Flashes

A sudden, temporary onset of body warmth, flushing, and sweating (often associated with menopause) (NIHa, 2018).

1.8.14 Psychological Distress

A state of emotional suffering characterized by symptoms of depression (e.g., lost interest; sadness; hopelessness) and anxiety (e.g., restlessness; feeling tense) (Ross and Mirowsky, 2002).

1.8.15 Quality of Life (QoL)

An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment (Skevington, et al., 2004).

Chapter two

2.1 Conceptual Framework

Conceptual framework is a theoretical structure and an analytical tool that helps organize assumptions, variations, that holds together the ideas comprising a broad concept. It is the researcher's understanding of how particular variables in his/her study connects with each other. Thus, it identifies the variables required in the research investigation and maps out the actions required in the course of the study. The conceptual framework will help to assess the goals for the research and develop appropriate research questions and methodology.

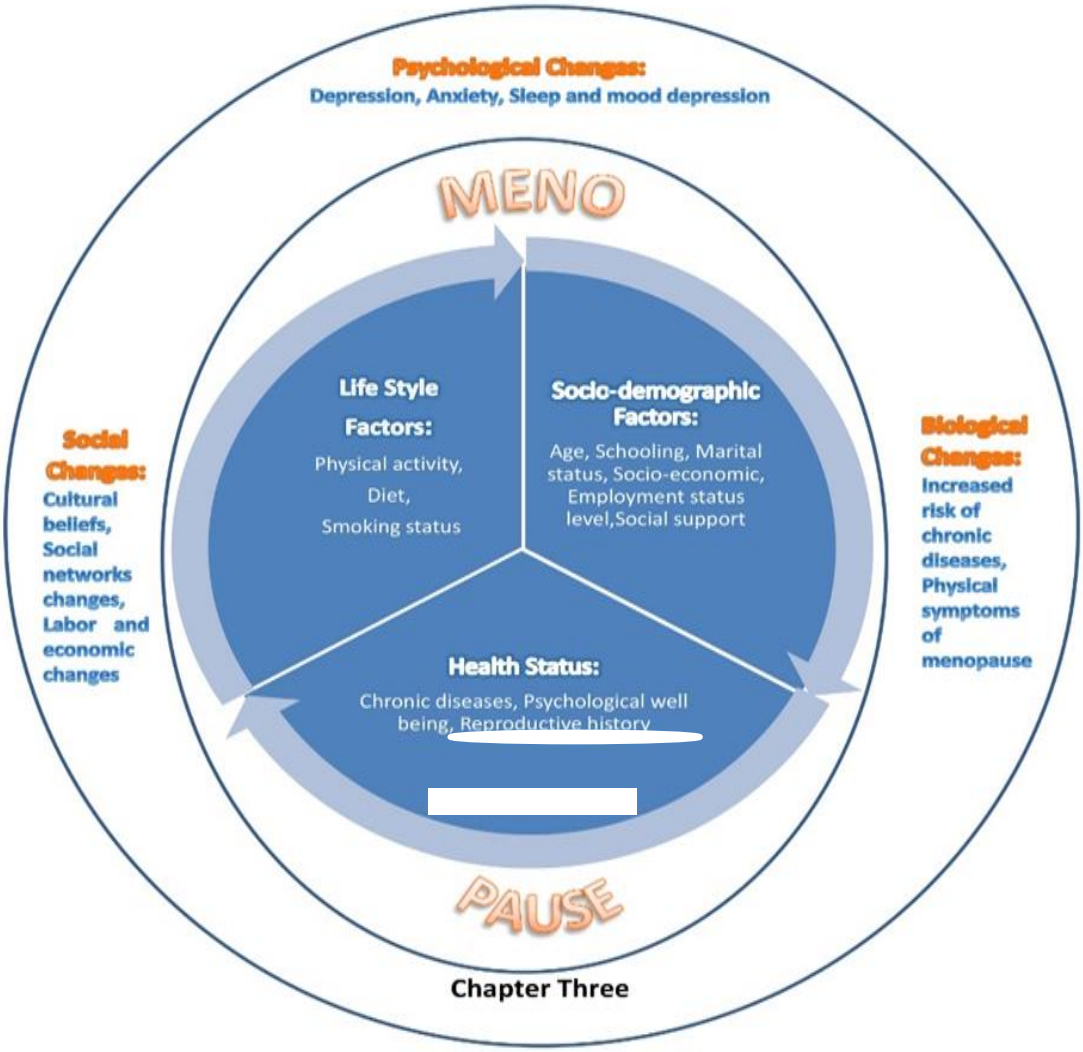

Figure (2.1): Conceptual Framework

This conceptual framework may show the possible relationships between the main study dependent variable, which is the menopause, and the affecting variables called the independent variables. These are summarized in the following factors:

- **Socio-demographic factors**

This framework assumes a relationship between the menopause occurrence, menopausal symptoms and their duration, and the socio-demographic variables. These could be related to the occupational status, economic level and other factors such as educational level, marital status, and social support that were tested in this study to show the difference among women of different backgrounds.

- **Health Status**

  This study also tested the relationship between the health status for women and the menopausal status, examining the relationship between the presence of any diseases or the familial history or the different genetic makeup, and the psychological well-being along with the onset of the menopause, and its related symptoms.

- **Health style factors**

  It was supposed also that smoking status, diet regimen, and alcoholic status may affect the menopause event. While in our country, alcohol drinking could be absent or rare due to religious and cultural background of our society, it's still a factor.

  Menopause as a natural event or as an early or induced event may have different consequences, which can be different accordingly.

Possible consequences to the menopausal event in women could be summarized in these factors:

- **Biological Changes**

  The biological status could be affected after menopause as a result to the hormonal fluctuation and to the aging process in women increasing the risk of chronic diseases such as bone pain and osteoporosis, weight gain, and other physical symptoms such as hot flushes, and night sweats.

- **Social Changes**

  Another complication which may be owed to the menopausal status is the change in the social relationships, the work ability, and reactivity with people, where it is supposed to be less in the most cases of menopausal women.

- **Psychological Changes**

  The psychological consequences of menopause may differ according to cultural, educational, and social context such as depression, mood depression and the overall quality of life.

The above variables would be discussed in the literature review, and analyzed in this study, where it examines the relationships between these factors and the menopausal status in Gaza Strip.

2.2 Literature Review

2.2.1 Menopause

2.2.1.1 Pre-menopause

The term pre-menopause is widely used in an ambiguous manner, either to refer to the one to two years immediately before the menopause or to refer to the whole of the reproductive period prior to the menopause (WHO, 1981).

During the perimenopausal period, androgen concentration increases instead of estrogen, which could be the main reason behind the skin and hair diseases for women during this period (Goluch-Koniuszy, 2016). It was found that premenopausal Colombian women who developed from impoverished areas are of low bone mineral density, and at higher risk of developing osteoporosis (Londono, et al., 2013). In addition to poor economic status, other risk factors may cause osteoporosis in premenopausal women, such as celiac disease (Tom, et al., 2010), diabetes mellitus type 1 (Ahmed, et al., 2006), and rheumatoid arthritis (Burnham, et al., 2006).

Recurrent urinary tract infections are common in many women especially when these women are low volume fluid drinkers; according to the recommendations of the European Food Safety Agency, fluid intake of less than 1.5 liter is considered a low-volume fluid drinking in women. Acute UTIs which are of the most common infectious diseases in women are treated mainly by anti-microbial agents. While the management of recurrent infections needs a recurrent use of anti-microbial agents; this has evolved the anti-microbial resistance which is a very important, modern problem. A randomized clinical trial, 12-month trial at a clinical research center for 3 years; 140 healthy women with recurrent cystitis, who have experienced acute cystitis for 3 times or more in the past year

and who drink less than 1.5 L daily were chosen as being eligible for participation in this study. A water group and control group participants were selected randomly; the intervention was to drink additional quantity of fluids in the water group and to keep the control group without additional fluids drinking, with the assessment of daily fluid intake, urinary hydration, and cystitis symptoms at baseline, six, and twelve months visits, and monthly telephone calls. This study has evidenced the importance of water intake in the prevention of recurrent cystitis in premenopausal women, and the role of water in the protection from anti-microbial resistance in societies (Hooton, et al., 2018).

2.2.1.2 Peri-Menopause

It includes the period immediately prior to the menopause (when the endocrinologic, biological, and clinical features of approaching menopause commence) and at least the first year after the menopause (WHO, 1981).

While Climacteric refers to the phase marking the transition from the reproductive phase to the non-reproductive state in the women's aging, this phase incorporates the peri-menopause by extending a longer variable period before and after the perimenopause (Sherman, 2005). Menopausal transition or perimenopause starts around the age of mid to late 40s, and persists for 4-5 years (Reid, et al., 2014).

The peri-menopausal and the early postmenopausal years are characterized by the falling levels of endogenous estrogen, which can raise different complications (Harlow, et al., 2012). Peri-menopausal women may complain from multiple issues due to the fluctuation of ovarian follicular activity. They often present with abnormal uterine bleeding (Singh, et al., 2013). Evidence suggests that many peri-menopausal and postmenopausal women experience hot flushes (cohen, 2006). Hot flushes (hot flashes in the USA) occur as a sudden feeling of heat in the face, neck, and chest (WHO, 1996). When hot flushes occur during the night, they are referred to as night sweats (Daley, et al., 2014).

Clinically significant depression symptoms are more likely to develop among peri-menopausal women, and are twice as common as in them when compared with women who had not yet gone under menopausal transition (Cohen, et al., 2006). Many women report that their symptoms of premenstrual dysphoric syndrome worsen at peri-menopause, and alleviate with menopause (Edition, 2013).

In a prospective study among African American, Hispanic, Japanese, Chinese, and Caucasian women to examine whether risk factors of coronary heart diseases are associated with FMP or with the natural aging process in women. The risk factors which were examined were lipids and lipoproteins, glucose, insulin, blood pressure, fibrinogen, and C - reactive protein. The results of this study demonstrated that cholesterol, low density lipoprotein cholesterol, and apolipoprotein B increase within one year before and after the FMP, while the other risk factors were consistent with the chronological aging, meaning that lipids monitoring during peri-menopause could protect menopausal women from CHD (Matthews, et al., 2009).

2.2.1.3 Post-Menopause

In addition to the hormonal changes during the menopausal transition, the severity of symptoms during the peri and postmenopausal period are affected according to the perception of these life events according to Pimenta, et al. (2012).

Women during peri and postmenopausal may suffer from sleep disturbances due to the different menopausal symptoms that may affect their sleeping quality. A study in which women aged 44-56 years participated found that apnea and restless legs syndrome, which are considered as primary sleep disorders, are common in those menopausal population. The study showed the importance of such complaints in the sleep disorders related morbidity and mortality in menopausal women (Freedman and Roehrs, 2007).

Menopausal transition could be associated with depressive mood in many women, and for this reason, a review of epidemiologic studies on such topic concluded that the longitudinal cohort studies resulted in that the depression risk during menopausal transition is three times greater than that during perimenopause. While the depression risk in women with a history of depression is five times greater during their menopausal transition, the depressive risk is two to four times greater in women without a depressive history during their menopausal transition compared with premenopausal women (Freeman, 2010).

During the reproductive age, the ovaries produce a high proportion of circulating estrogen. The estrogen enhances the growth of the vaginal epithelial cells to remain thick and elastic. However, the released estrogen decreases sharply after menopause resulting in dry and irritated genital areas (Lethaby, et al., 2016).

The menopausal age was found to have a strong association with the severity of the menopausal symptoms according to the study of Mohamed, et al. (2017). It was found that less than one third of the post-menopausal women of the study experienced severe symptoms because they could be adapted to the menopausal changes (Mohamed, et al., 2017).

Maggio, et al. (2015), found that serum B-carotene was independently and inversely associated with estradiol levels in late postmenopausal women, while during the aging process in women, significant reductions in retinol and carotenoid occur (Maggio, et al., 2015). Breast and endometrial cancers are positively dependent on estrogen receptors; while it has been suggested that retinols have an anti-estrogenic effect, the relationship between phytochemicals and cancer prevention mechanism has not to be evidenced yet.

Post-menopausal women gain additional weight as a result of the change in fat distribution and central adiposity. In a cross-sectional study which measured the central adiposity by two different cutoffs of waist circumference and waist-to-hip ratio, for pre-menopausal, peri-menopausal, and post-menopausal women, it was revealed that post-menopausal women are at a greater risk of central adiposity, where the pre-menopausal women had a thinner waist circumference and lower waist-to-hip ratio measurements than those measurements of post-menopausal women (Donato, et al., 2006).

2.2.1.4 Premature Menopause

It refers to menopause that occurs before the age of 40 years, and early menopause refers to menopause that occurs at or before the age of 45 years. Natural or spontaneous menopause occurs around the age of 50. Premature menopause or early menopause can occur spontaneously or be induced by different factors (Shuster, et al., 2010).

Premature ovarian failure can be induced temporarily by medications, high levels of stress, excessive exercising, and/or dieting; or it can be induced permanently as in the case of chemotherapy (Oliveira, et al., 2012), surgery, or ionizing radiation (Reid, et al., 2014). Exposure to environmental toxins such as diethyl stilbestrol, and radiation (Sakata, et al., 2011) may have toxic effects on ovarian follicles, or may cause endocrine disruption. This may lead to an early menopause.

Women with menopause under 45 years are estimated as being at about twice the risk of developing CHD and stroke compared with those with menopause over 45 years (Wellons, et al., 2012). However, both early and later menopauses are associated with increased risk of thromboembolism (Canonico, et al., 2014; Lutsey, et al., 2010).

Earlier menopause is associated with increased risk of death from all causes (Svejme, et al., 2013; Hong, et al., 2007). It is associated with increased osteoporosis (Svejme, et al., 2012; Demir, et al., 2008). It is also associated with increased cholesterol (Lee, et al., 2013), atherosclerosis (Joakimsen, et al., 2000), an increased risk of cardiovascular diseases and stroke (Wellons, et al., 2012), and heart failure (Ebong, et al., 2014).

Many types of cancer are associated with early menopause, bladder cancer (Prizment, et al., 2007); Lung cancer (Weiss, et al., 2008; Baik, et al., 2010); Upper gastrointestinal tract cancer (Freedman, et al., 2010) and pancreatic cancer (Prizment, et al., 2007). Increased risk of depression (Jung, et al., 2015; Schmidt, et al., 2011) and increased risk of autoimmune diseases are also associated with early menopause (Wu, et al., 2014).

It has been found that early menopause is associated with a higher risk of cardiovascular diseases than that of late menopause, especially that of artificial menopause (Atsma, et al., 2006). This occurs as a result of the estrogen deficiency, which shows that the early process of menopause could have unfavorable outcomes when it is not natural. Another study that examined the relationship between early menopause and bone mineral density suggested that early menopause is considered as a risk factor for osteoporosis as low bone mineral density can lead to osteoporotic fractures and early menopause was associated with low bone mineral density. This study showed the importance of early diagnosis and prevention of osteoporosis in early menopausal women (Gallagher, 2007).

2.2.2 Prevalence, knowledge and attitude towards menopause

In a study performed by Mustafa and Sabir in Erbil, Al Iraq (Mustafa and Sabir, 2012), in which they assessed women's perception and experience regarding menopause; they found that the mean age of menopause was 47.44 years, and 93.2% of the women heard about the HRT. In another study by Rizk, et al. (Rizk, et al., 1998) in the UAE, 742 aged 40 and above were involved from urban and rural areas of Al-Ain city, Abu Dhabi, Dubai, and Al-Sharjah in Emirates. The median age of menopause was found to be 48 years. The mean age of menopause was found to be 49.2 years in a cross sectional study performed in Cairo,

Egypt (Sweed, et al., 2012), while the mean age of menopause in Singapore was 49 years (Loh, et al., 2005). The most prevalent symptoms among peripausal Egyptian women were joint pain and sleep disorders.

A study by Jassim and Al-Shboul (2008; 2009) that investigated the knowledge and the attitudes of 260 Bahraini women aged from 30-64 years towards menopause. Women's nowledge about menopause and HRT was average. In addition, it was reported that premenopausal women had more negative attitudes towards menopause than peri-menopausal or postmenopausal women (Jassim and Al-Shboul, 2008; Jassim, and Al-Shboul, 2009).

The awareness of osteoporosis among the post-menopausal women in the West Bank, Palestine was found to be associated with age, educational level, residency, and the use of dietary supplements and milk consumption. It was found that the average score of knowledge on osteoporosis is poor/low (Abd-Alhameed, et al., 2010).

Young Saudi women tend to have a negative attitude toward menopause in comparison with older women, who welcomed the menopause especially after achieving a complete family and an optimal number of children (Al Sejari, 2005).

In a qualitative study that examined the expectations and experiences of midlife transition in women living in Qatar by Murphy, et al. (Murphy, et al., 2013). women's experiences were found to be dependent on the husband's level of support. Also, Arab women from different origins perceived and experienced menopause almost similarly. Women's knowledge about menopause varies significantly with level of education and nationality (Hamid, et al., 2014).

In another cross-sectional survey in Pakistan to determine knowledge level and perceptions among highly educated women aged 40-59 years, it was found that women with negative attitude towards menopause experience feelings of grumpiness, irritability, and altered work ability (Memon, et al., 2014).

It found that women with a negative attitude towards menopause experience more menopause related symptoms in comparison with those with a positive attitude. In addition, women with poor relationships with their families have more vasomotor and psychosocial symptoms (Yanikkerem, et al., 2012). In another study, it was found that

negative attitude toward aging was associated with later symptom intensity (Nosek, et al., 2010). There is a strong negative relationship between emotional stability and attitude with the menopausal symptoms and their severity (Rubinstein, 2013).

Premenopausal or peri-menopausal women had the most negative attitudes towards menopause, while women experiencing the transition become less negative towards this phenomenon. As the bodily changes occur during the peri-menopausal phase, it was suggested that this phase could be the most difficult (Ayers, et al., 2010).

In a recent descriptive cross-sectional study in Turkey, which studied the relationship between perceived social support and attitudes towards menopause in 45 years old women and older; it showed that the majority of the study sample reported negative attitudes and low social support regarding menopausal status. Also, it was found that women who have more positive attitudes are those who are aged 50 or less, not married, highly educated, employed, with a normal BMI, who have a nuclear family, have a highly educated husband, have a husband who was a civil servant, have a higher income perception, living in province, and those who practiced physical exercises. Women who had a higher score of perceived social support were those who were 50 years old or younger, highly educated, civil servant, living in a province, single, doing physical exercise, have a higher income perception, have a positive health perception, are during premenopausal period, and who are informed about menopause (Erbil & Gümüşay, 2018).

2.2.3 Risk factors of menopause

2.2.3.1 Physical Activity

It has been found that higher BMI at 20 years age, mid-life weight gain, moderate-high, exercise participation during adulthood and adolescence are associated with late menopause. On the other hand, severe weight loss and vigorous exercise can decrease the menopausal age due to reduction of estrogen level (Sapre & Thakur, 2014).

It was found that more exercise is associated with late menopause (Morris, et al., 2012), and earlier menopause is associated with being physically inactive (McKnight, et al., 2011; Stepaniak, et al., 2013; Gudmundsdottir, et al., 2012). There was found to be a significant positive correlation between BMD and the physical characteristics of women (weight, height, and BMI).

In contrary, a recent prospective analysis which examined the relationship between physical activity and the risk of early menopausal age. It showed that the menopausal timing for the premenopausal women who participated in the study as not affected by their physical activity during adolescence and adulthood, with adjusting the confounding factors (Zhao, et al., 2018).

In a cross-sectional study, it was found that physical activity could prevent or decrease weight gain and abdominal fat distribution in women after menopause, so it is a lifestyle that could lessen the negative consequences of menopause (Astrup, 1999).

It has been reported that physical activity may affect some menopause related symptoms, and their consequences on health positively, such as cognitive functioning, depression, sleep patterns, fatigue, bone density, weight maintenance, and cardiovascular disease (Daley, 2011). In a randomized controlled trial, there was an evidence of the benefits of physical activity by post-menopausal women, where physical activity could enhance the cardiorespiratory functions of women. It can reduce the post-menopausal symptoms leading to the enhancement of mental health and the QoL for these women. This can show the importance of such life style factor in prevention and treatment of menopause-related consequences (Elavsky and McAuley, 2007; Elavsky, 2009).

In a randomized controlled trial, physical activity has been reported as an important factor for the aim of maintaining healthy bone structure, where the reduction of bone mass was reported as a consequence of menopause (De, et al., 2007).

Early menopause could be associated with unpleasant outcomes on tissues with estrogen receptors as a result for the estrogen deficiency, such as osteoporosis and coronary heart disease. While the HRT has been evidenced to be associated with cardiovascular risks according to the WHI (2002) study, physical activity has been studied by Kemmler, et al. (2007) and was found to be an effective factor for the protection of estrogen-deficiency diseases (Kemmler, et al., 2007).

2.2.3.2 Diet

It has been found that dietary types and lifestyle have an effect on the menopausal age and menopausal outcome. For example, high intakes of fruits and vegetables can delay the onset of menopause due to their antioxidant effects on the ovarian follicles. Also, high

intakes of total calories, carbohydrates, and proteins are associated with delayed menopause. Regular tea consumption is also associated with a delayed ANM due to its antioxidant effect and the estrogenic effect by the flavonoids which are present in tea. However, the effect of carbohydrates on the menopausal age has been found to be associated with an inverse relationship, or with no effect in other studies. Also, caloric restriction especially during early childhood and the high intake of polyunsaturated fats can accelerate the menopausal transition (Sapre, & Thakur, 2014).

Food deprivation in childhood (Elias, et al., 2003) and lower socio economic status in childhood are associated with earlier menopause (Lawlor, et al., 2003), while being breastfed (Mishra, et al., 2007; Hardy and Kuh, 2002) and with heavier weight in infancy were associated with later menopause. Both low and very high birth weights are associated with increased chance of early menopause (Tom, et al., 2010).

A recent study in the UK targeted participants of women aged 40-65 years, and women who experienced natural menopause in relation to their participation. This study was the first to assess the relationships between different types of diet and age at natural menopause. The results of the study demonstrated that intakes of oily fish and fresh legumes, vitamin B6 and zinc are associated with later onset of natural menopause, while intake of higher quantity of carbohydrates especially refined pasta and rice and vegetarian women are associated with younger age of menopause (Dunneram, et al., 2018). The antioxidant properties of oily fish and fresh legumes can counteract the ROS and thus decrease the proportion of follicles undergoing follicular atresia could be related to the later age of menopause, while the high intake of refined carbohydrates can increase the risk of insulin resistance and increased estrogen level which can lead to the rapid depletion of oocytes due to the triggered ovulation by the luteinizing hormone leading to an earlier menopause. The vegetarian diet which consists of high fiber and decreased fat intakes may affect the level of luteinizing hormone, follicle stimulating hormone, and consequently the length of menstrual cycle (Dunneram, et al., 2018).

The dietary pattern which contains cereal grains and fruits may accelerate bone loss in the spine and hip, while milk and vegetables dietary pattern may improve the BMD of hip according to a longitudinal study conducted in 2015 (Chen, et al., 2015).

Healthy diet can prevent or reduce some health conditions that may develop during and after the menopausal transition. These include diabetes type 2, osteoporosis, heart diseases, and some types of cancer. Diet that is rich in vitamin D and calcium has a beneficial role in the reduction of immune system disease (Reid, R., et al., 2014).

The study study conducted by Dormire and Howharn (2007) found that the dietary intake can affect the timing of hot flushes, as in the 30-minute period before the meal or the snack, and thus hot flushes frequency was greater than in the 30-minute period immediately after the dietary intake. This means that there is a relationship between the blood glucose level and the hot flushes experience (Dormire and Howharn, 2007). On the other hand, BMI is not associated with hot flushes in post-menopausal women (Hyde, et al., 2004)

It has been evidenced that intake of phytoestrogens which are considered as dietary estrogens, such as lignans and isoflavones can decrease the risk of cardiovascular diseases in postmenopausal women as a result of the reduction of lipids profile and hypertension (De Kleijn, et al., 2002).

Vitamin D has many beneficial outcomes on health. Vitamin D is taken mainly from sun exposure and this could be an obstacle for many girls and women, where they spend much of their time at home and most of houses nowadays miss the full entrance of sunlight. For this reason, it is highly recommended for women, to keep checking vitamin D concentration in serum and to take a vitamin D supplement when it is deficient. In a case-control study conducted in Germany, where the 25-hydroxyvitamin D concentration in serum, which can indicate the vitamin D of dietary intake and vitamin D of endogenous production, was measured in incident breast cancer patients aged 50-74 between 2002 and 2005 to study the association between 25-hydroxyvitamin D and the risk of breast cancer after menopause. It was found that there is an inverse non-linear association of 25-hydroxyvitamin D concentration in serum with post-menopausal cancer. The association was stronger in women with low 25-hydroxyvitamin D concentration, in women who had never used HT, and in women with more pregnancies compared with women of higher 25-hydroxyvitamin D concentration, women who have used or currently use HT (Abbas, et al., 2007).

2.2.3.3 Smoking

Smoking was found to be a risk factor for a lower ANM due to its anti-estrogenic effect where the polycyclic aromatic hydrocarbons in cigarettes have a toxic effect on the ovarian follicles (Sapre, & Thakur, 2014).

The smoking status could reduce the age of menopause in different ethnicities (Morris, et al., 2012; Aydin, 2010; Di Prospero, et al., 2004). Cigarette smoking was suggested to have anti-estrogenic effects, and to cause more rapid estrogen metabolism (Gold, et al., 2000).

It was mentioned that smoking increases the hot flushes experience (Dormire and Howharn, 2007). Furthermore, it has been found that women who smoke at their peri-menopausal stage or who smoke at their ages of 44 to 55 years have a doubled risk of getting earlier menopause than those who don't smoke during the same period. Moreover, it has been found that the risk of being menopausal among women is associated with the daily number of cigarettes among women who are considered as currently smokers more than those who had a smoking history, where prolonged exposure of smoking did not affect the risk of menopause (van Asselt, et al., 2004). On another cohort study by Oboni, et al. (2016), it has been evidenced that current smokers get the menopausal transition more than a year sooner than those who do not smoke (Oboni, et al., 2016).

2.2.3.4 Socioeconomic Status

A meta-analysis that comprised 11 study populations to study the effect of education on the age of menopause showed that onset of menopause occurred one-third of a year later in women with a middle education level, and two-thirds of a year later in women with a high education level (Schoenaker, et al., 2014).

Furthermore, it was found that the effect of the occupational status on the age of menopause is comparable to that of the educational status. Women with higher occupational level experience menopause later than those with lower occupational level (Schoenaker, et al., 2014). Lower socioeconomic status is associated with earlier menopause for women with lower occupational class and being unemployed, according to different studies in different countries (Pérez-Alcalá, et al., 2013). This effect on age is owed to the differences in lifestyle (Lawlor, et al., 2003).

It has been found that high socioeconomic status is associated with a higher risk of breast cancer development, and according to the marital status; it has been found that being single and never married, women who married at age 18 or younger and women whose first birth was at age beyond 30 were at higher risk (Reddy, 2004) and while breast cancer develops mostly after the age of 40, this can be associated with menopause in women as well.

2.2.3.4.1 Education

In a cross-sectional descriptive study which has been performed on women aged 45-59 years in Manisa to study the complaints related to menopause, and the coping mechanisms experienced by those women to manage their menopause-related symptoms. The socio-demographic factors that may affect the HRQoL in women were studied and it found that women with higher level of education showed a better quality of life score. This relationship was owed to the fact that women with higher level of education could be more knowledgeable about menopause and these women are more willing to learn and to use coping methods more effectively (Özpinar, & Çevik, 2016).

In contrast to this study, the study of Mohamed, et al. (2017) showed that there was not a statistically significant relationship between menopausal symptoms and educational level of women, nor with the occupational status of the women (Mohamed, et al., 2017).

2.2.3.5 Reproductive and Individual Factors

Women with later menopaused mothers, and women with more number of births are less likely to have early menopause than those with no children (Morris, et al., 2012). Earlier menarche is associated with earlier menopause in some studies (Yasui, et al., 2011; Parazzini, 2007). Moreover, early menopause could be related to familial history, where mother, sisters and siblings who have got their menopause at an early age could be a familial and genetic risk factor. This risk increases in women who had their menopause at an age less than 40 years.

In a cohort study, where 2000 women with menopausal age less or equal to 45 years participated to examine the effect of genetic variants on early menopause, the effect of heritage and genes on menopausal age was assured, the possibility of examining the genetic determinants of the reproductive age was studied for women as a method to avoid the infertility age of those women (Murray, et al., 2010).

The study performed by Özpinar and Çevik, (2016) found that married women and women who have spouses suffered from a lower score of HRQoL compared with unmarried women and women who have a dead husband. This has been owed to the concern of the women about their relationships with their husbands and to the probability of being negatively affected after menopause (Özpinar and Çevik, 2016).

Social support including family support, friend support, and other types of support were found to be positively correlated with positive attitude toward menopause by women (Erbil & Gümüşay, 2018).

Personal factors have a role on affecting the menopausal symptoms. Women with low self-esteem may experience more severe menopausal complaints (Rosemeier and Schultz-Zehden, 2001). Life stressors, lack of social support, unemployment, and surgical menopause may affect the psychological health of menopausal women.

Ethnicity and the resultant difference in socio-economic status and lifestyle may affect the age of menopause (Schoenaker, et al., 2014). It was found that Japanese Americans were less likely to be menopausal compared with white Americans, while Latin Americans were more likely to be menopausal.

Variations among cultures may reflect the differences in beliefs and attitudes regarding menopause. This in its turn could have a different impact on menopausal symptoms. For example, hot flushes experience was lower among Japanese women than American and Canadian women (Afridi, 2017). Generally, women with more negative attitudes towards menopause experience more symptoms during menopause (Ayers, et al., 2010). Past experience of mood disorders, and other psychological factors, body image, sociocultural factors affect the level of depression and anxiety after menopause.

Discussing menopausal symptoms with others can help in reducing the severity of these symptoms, by feeling supported by others' experiences and their management strategies (Duffy, et al., 2011), where menopausal anxiety and depression are highly related to poor social support.

Erbil & Gümüşay (2018) highlighted the importance of enhancing social support for women before entering their menopausal transition in order to improve their attitudes towards menopause by developing informational programs about menopause by healthcare

providers and by policy makers, that can focus on the advantages of social support to improve the menopausal women's health outcomes and QoL after menopause (Erbil & Gümüşay, 2018).

2.2.3.6 Medical History

2.2.3.6.1 Epilepsy

Women with epilepsy generally get menopause at an earlier age than other women (Shifren, et al., 2014). The earlier occurrence of menopause could be related to the total number of lifetime seizures, or it can be affected by antiepileptic drugs, especially those that may affect estrogen levels by inducing the hepatic CYP450 isoenzyme (eg, phenytoin, phenobarbital). Hormonal changes that occur during perimenopause and menopause may result in changes in seizure frequency and patterns. For example, during peri-menopause which is characterized by an-ovulatory cycles and unopposed estrogen effects are associated with a greater frequency of generalized convulsive seizures than are ovulatory cycles. However, gabapentin which is an anti-epileptic drug could be effective in reducing hot flushes and night sweats in menopausal women. However, anti-epileptic drugs are associated with induced vitamin D metabolism leading to vitamin D deficiency and consequently low BMD and osteoporosis (Shifren, et al., 2014).

2.2.4 Consequences

2.2.4.1 Hot Flushes

The hot flush or flash is the most characteristic manifestation of the climacteric phase. Hot flushes are thought to result from the brain's response to diminished hormones during menopause, leading to the instability of the thermoregulatory mechanisms that regulate temperature homeostasis in the hypothalamus (Freeman, 2007).

The prevalence of vasomotor symptoms varies with ethnicity. Hot flushes are less common among East Asian women than among American and European women (Freeman, 2007).

Most women experience hot flushes for 6 months to 2 years. However, some women may experience them for 10 years or longer. Hot flushes severity differs among menopausal women. Some women suffer from bothersome hot flushes which can disrupt their sleep, and adversely affect their quality of life, while others may experience a less severe symptom, though treatment or the management of these symptoms should be

individualized. Some natural lifestyle changes could decrease the feeling of such vasomotor symptom such as keeping body temperature low, maintaining a healthy body weight, refraining from smoking, exercising regularly, and practicing relaxation techniques. Periodic evaluation of hot flushes management is recommended where they can improve by time (Shifren, et al., 2014).

2.2.4.2 Cardiovascular Disease

Cardiovascular disease (CVD) is the leading cause of death in women worldwide. It was found that CVD rates in women rise sharply after menopause. The decline in estradiol levels during menopause leads to the higher androgen to estradiol ratio. Androgens induce vasoconstriction and smooth muscle cell growth leading to the endothelial dysfunction and vascular remodeling. This cellular process participates in atherosclerosis formation, and may exacerbate diet induced atherosclerosis (Lakatt, 2003; Boardman, 2015).

Estrogen loss during menopause causes negative effects on metabolism and on cardiovascular function. It was found that the mitochondrial capacity decreases in heart decreases with hormonal alterations, leading to reduction in lipid oxidation, and increased lipid storage in adipocytes increasing the risk of CVDs (Oliveira, et al., 2012). The hormonal changes associated with menopause can accelerate the increase in low-density lipoprotein cholesterol in the year following menopause (Shifren, et al., 2014).

2.2.4.3 Diabetes Mellitus

It has been evidenced in a reviewed data by Heianza, et al. (2013) that post-menopausal women have a greater risk of developing dysglycemia including pre-diabetes and type-2 diabetes than non-menopausal Japanese women. Moreover, the post-menopausal status was found to be associated with pre-diabetic hyperglycemia independently of age and demographic and metabolic factors among non-diabetic women (Heianza, et al., 2013).

Furthermore, Shifren, et al. (2014), mentioned that pre-diabetes and diabetes are highly prevalent in midlife women; this could be a result of the impairment of glucose metabolism in women due to their normal aging and weight gain (Shifren, et al., 2014).

2.2.4.4 Asthma

Asthma is more prevalent in women than in men, and its severity can vary depending on the menstrual cycle in women prior to menopause. The incidence of asthma does not clearly increase after menopause, but lung volumes tend to decline, and pulmonary symptoms including wheezing become more prevalent.

Asthma that has its onset after menopause tends not to be associated with atopy and can be particularly severe. The effect of hormone therapy on asthma is unclear. Several large observational studies have shown an association between current HT use and asthma risk, whereas several small interventional trials have demonstrated neutral to beneficial effects of HT on airway function and clinical course (Shifren, et al., 2014).

2.2.4.5 Urinary Incontinence

It is the complaint of any involuntary leakage of urine (Ghafouri, et al., 2014).

Stress incontinence is defined as the leakage with increases in intra-abdominal pressure and it is related to poor urethral support, urethral sphincter weakness, and/or dysfunction of the pelvic floor muscles (Shifren, et al., 2014).

Urgency incontinence is defined as the leakage with a sense of urinary urgency and it is caused by uninhibited contractions of the detrusor muscle (Shifren, et al., 2014).

It was suggested that menopausal women may suffer from urinary incontinence due to the estrogen deficiency, as the tissues that are involved in the continence process in women are sensitive to estrogen (Cody, et al., 2012), and according to Shifren, et al. (2014). Approximately half of midlife American women suffer from urinary incontinence. However, it was reported that there is no strong relationship between menopause and urinary incontinence (Shifren, et al., 2014).

It was found that more premenopausal women are affected by urinary incontinence than postmenopausal women (Hannestad, et al., 2000).

2.2.4.6 Vaginal Atrophy

By reduction in circulating estrogen, genital areas become dry, itchy, and more easily irritated. The reduction in blood flow leads to fewer secretions and more dryness of the

vagina. The deterioration in vaginal and urethral tissues is called genitourinary syndrome (Roberts, 2016). The vaginal PH changes after menopause, making the vagina more susceptible to infections (Oliveira, et al., 2012).

Genitourinary syndrome of menopause (GSM) is defined as a collection of symptoms and signs associated with a decrease in estrogen and other sex steroids involving changes to the labia majora/minora, clitoris, vestibule/introitus, vagina, urethra, and bladder. The syndrome may include but is not limited to genital symptoms of dryness, burning, and irritation; sexual symptoms of lack of lubrication, discomfort or pain, and impaired sexual function; and urinary symptoms of urgency, dysuria, and recurrent urinary tract infections (UTIs). Non-hormonal vaginal lubricants and moisturizers are used as an initial therapy for the treatment of GSM (Shifren, et al., 2014).

2.2.4.7 Uterine Bleeding

Approximately most women experience uterine bleeding in the premenopausal period, where they may experience menstrual cycle changes for 4 to 8 years, which may include heavier menstruation of longer duration. This symptom could affect the women's daily life activities and could lead to anemic women (Shifren, et al., 2014).

2.2.4.8 Skin

Menopausal women generally have thinner and less elastic skin, where these skin changes including loss of collagen, increased laxity, and wrinkling are associated with the women aging. The changes in skin increase with exposure to certain environmental factors, such as chronic sun exposure and bad habits such as smoking. Skin aging includes wrinkling, dyspigmentation, telangiectasias, roughness, and dryness (Shifren, et al., 2014).

2.2.4.9 Hair

During and after the menopausal transition, some women may observe hair changes, such as hair loss or excessive hair growth. These changes could be related to the hormonal changes for these women where the increase of androgen and the decrease in estrogen during this phase may induce these hair changes. Testing androgen level, thyroid function, and iron level of the body is recommended for the management of these changes (Shifren, et al., 2014).

2.2.4.10 Eyes

Menopause could be associated with eye problems. Generally, women complain from eye disorders more than men where their daily lives are more affected. One of the most common ocular complaints associated with menopause is dry eyes and cataracts, where men of the same age are less affected by these symptoms. Effective treatments for dry eyes include topical lubricants, and anti-inflammatory agents. Women using hormone therapy may suffer more from dry eyes as the HT is associated with increased risk of dry eyes symptoms, however, women should be informed about this relationship (Shifren, et al., 2014).

2.2.4.11 Hearing impairment

Hearing health could be affected by aging, where different causes may be attributed to hearing impairment such as infections, ear wax, frequent exposure to very loud noises, head injuries, tumors, or loss of reproductive hormones.

Physiologic levels of estrogen may preserve hearing, while estrogen-progestogen hormone therapy may have a small negative effect (Shifren, et al., 2014).

2.2.4.12 Teeth and Oral Cavity

Teeth health is associated with bone mineral density, where decreased BMD especially the skeletal BMD of the upper jaw can lead to teeth loss. Moreover, menopausal women are exposed to teeth loss as a result of hormonal fluctuations, where these are associated with increased periodontal inflammation and increased oral lesions; and estrogen deficiency is associated with gingival thinning and recession.

Midlife women are recommended to undergo regular dental and periodontal examinations, and to maintain oral hygiene with cleanings and dental treatments as needed. Postmenopausal women should maintain bone health as part of supporting dental and periodontal health (Shifren, et al., 2014).

2.2.4.13 Osteoporosis

It is a skeletal disorder characterized by decreased bone mass and deterioration of microarchitecture of bone resulting in an increased risk of fracture (NIHc, 2018). It is a natural consequence of aging in postmenopausal women (Hodsman, 2002).

Postmenopausal osteoporosis is a common condition that leads to an increased risk of fracture. In a 2 year prospective study, it was found that menopause, history of fracture, smoking status, alcohol consumption, blood pressure, dietary calcium intake, drugs, and physical activity are associated with decreased BMD in the postmenopausal women. Low bone mineral density (BMD) is one of the main pathologic factors of osteoporotic fractures (Chen, et al., 2015).

By measuring bone mineral density by dual-energy x-ray absorptiometry of the spine, hip, and/or forearm or by the presence of a low-trauma or fragility fracture, early diagnosis and treatment of osteoporosis is possible.

Many conditions, diseases, and medications contribute to bone loss and increased fracture risk. Many pharmacologic options for the purpose of prevention and treatment of postmenopausal osteoporosis are available, but the treatment should be individualized for each women. Current FDA-approved pharmacologic options for the prevention of postmenopausal osteoporosis include estrogen therapy, estrogen-progestogen therapy, and an estrogen agonist/antagonist such as bazedoxifene combined with estrogen (Shifren, et al., 2014).

2.2.4.14 Quality of Life

The various somatic, vasomotor, sexual, and psychological symptoms that result from the deficiency of estrogen and progesterone can impair the overall QoL. The WHO defines QoL as an individual's perception of their position in life in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards, and concerns.

In a review study, employment status, and high educational level for menopausal women were considered to be protective factors in their QoL improvement. The main predicting factors of QoL were found to be different in various populations of menopausal women. Age, race, BMI, social and occupational variables, and duration of menopause were the main predicting factors (Jenabi, et al., 2015).

Another descriptive study has been carried out for the aim of assessing menopausal symptoms and studying their impact on women's quality of life in Saudi Arabia. The study conformed two groups; a menopausal group and a postmenopausal group of women aged

40-60 years. The study concluded that the most severe symptoms of the study population were hot flushes, poor memory, dissatisfaction with personal life, low backache, and change in sexual desire. So, menopausal symptoms were associated with decrease in women's quality of life (Mohamed, et al., 2017).

Quality of life for midlife women is influenced by their goals in life, expectations, and concerns. While QoL for those women composes of their perception of their lives within their culture and value system, it is not only related to their general health and their menopausal symptoms. Perceived QoL assessment for those women is valued as a therapeutic outcome and may be a determinant of their adherence to a recommended plan of care.

2.2.4.15 Body Weight

Body weight increase is associated with menopause. Although, metabolic rate decreases with aging, increase in body weight and visceral adipose tissue accumulation after menopause is associated with the hormonal loss (Oliveira, et al., 2012). Changes in body fat distribution with a relative increase in the proportion of abdominal fat (Chernoff, 2001) occur around the menopausal period (Weickert, et al., 2006).

In a reviewed data to analyze the relationship between menopause and weight gain; it has been found that weight gain is consistent by 0.5 kg annually regardless the menopausal status in women; there has been a substantial evidence that the peri-menopausal status is associated with the redistribution of body fats to the abdominal region and with an increased fat mass. However, women who experienced POF were found to be lean but with central adiposity. Obesity in women is associated with psychological discomfort and depression development due to low self-esteem and the variable body self-image, and accordingly health related quality of life (Davis, et al., 2012).

On the other hand, Shifren, et al. (2014) mentioned that the average gaining of weight in American women over their menopausal transition is around 2.3 kg, and confirmed that this weight gain in menopausal women is more likely to be related to aging and lifestyle changes rather than to menopause itself. Obesity could be associated with different health conditions, and especially after menopause, it could be related to more severe vasomotor symptoms. As a result, obesity should be managed in menopausal women by decreasing

the daily caloric intake by 400 to 600 kcal, decreasing low fat intake, and increasing fruits and vegetables consumption, and doing physical exercise regularly (Shifren, et al., 2014).

2.2.4.16 Work Ability

The first study to use the work ability index (WAI), to examine the impact of menopausal factors on work ability, concluded that menopausal symptoms are negatively associated with work ability (Geukes, et al., 2016).

William et al., (2009) reported that severe vasomotor symptoms have a negative impact on work life of women after menopause compared with milder symptoms (Williams, et al., 2009).

In Gaza Strip, the percentage of working women is low especially among those who entered the menopausal phase. All working women will experience menopause; some will experience mild menopausal symptoms, whilst in others, symptoms may be severe and debilitating. About half of these women will find it somewhat difficult, to cope with their work. Poor concentration, tiredness, poor memory, depression, feeling low confidence, sleepiness, and particularly hot flushes could be contributing factors to the lower work productivity. As with any longstanding health-related condition, the need for support and understanding from line management is crucial and can make a major difference to how a woman will deal with the adverse impact that the menopausal symptoms may have on her productivity, her job satisfaction, and her efficiency.

2.2.4.17 Psychological Consequences

Some women experience psychological symptoms during menopausal years (Carter, 2001). Sleep could be disturbed in midlife as a result of menopausal symptoms and psychological stressors. It was shown that reproductive hormones produced during menopause contribute to mood alterations such as depression (Gordon, et al., 2015). Common symptoms of depression during menopause include fatigue, inappropriate guilt, disturbed sleep, and agitation.

The menopausal transition could be associated with different psychological symptoms such as depression, anxiety, irritability, and social isolation. In a cross-sectional study conducted in Nigeria on women aged 40-55 years in their perimenopausal or postmenopausal phases; it has been found that Nigerian women who experience sadness, anxiousness,

forgetfulness, and irritation formed 64.2, 62.5, 60.8, and 56.7% respectively of the whole study sample, with higher incidence of these psychological symptoms among rural women (Jack-Ide, et al., 2014).

2.2.4.17.1 Sleep Disorders

Menopause is associated with insomnia, and sleep deprivation is associated with depression. Sleep disorders could be related to estrogen deficiency after menopause, and it is associated with night vasomotor symptoms coinciding with menopause. The domino theory, which expects that sleep disturbances is related to hot flushes and other menopausal symptoms- insomnia follows sleep disruption and sleep depression follows insomnia- is thought to be an explanation for menopausal depression. Estrogen loss also can affect the melatonin level inversely leading to disturbed sleeping in menopausal women in addition to its normal reduction in body by the aging process, where melatonin has a circadian effect at sleep onset and it is involved in sleep maintenance by blocking the arousal mechanisms and as a result disturbing sleep (Eichling & Sahni, 2005).

2.2.5 Interventions

2.2.5.1 Acupuncture

It is defined as the practice of inserting a needle or needles into certain points in the body for therapeutic purposes (Nasir, 2002). It includes many types such as the traditional Chinese medicine, and electro acupuncture. Acupuncture may act in the same way as hormonal therapy (Wyon, et al., 2004).

In a study to examine the effectiveness of acupuncture in treating hot flushes during menopause, it was found that hormone therapy is better than acupuncture; and acupuncture is better than no treatment, insufficient evidence was found to determine whether acupuncture is an effective treatment for vasomotor menopausal symptoms (Dodin, et al., 2008).

However, Shifren, et al. (2014) mentioned that acupuncture has found to be advantageous in reduction of hot flushes severity and in improving sleep patterns in menopausal women (Shifren, et al., 2014).

2.2.5.2 Complementary Alternative Medicine (CAM)

Generally, women prefer alternative treatments to pharmacological therapy for menopausal symptoms management, since they believe that these are not associated with the side effects of drugs. These alternative methods include herbal drinks such as chamomile, green tea, sage tea, black cohosh, evening primrose oil; it has been recommended by several studies that black cohosh could be an effective and safe herbal therapy for the treatment of menopausal symptoms especially hot flushes and mood disorders. Also, supplying by vitamins and minerals such as calcium and vitamin D are recommended in postmenopausal women for keeping the health of bones. Calcium requirement increases during menopause where the target calcium intake for most post-menopausal women 1200mg/ day (Özpinar, & Çevik, 2016).

The potential health risks that could be associated with the HT, encouraged women to think of other non-medical alternatives (Newton, et al., 2002). Newton, et al. (2002) survey showed that 61% of the 45-65 studied women reported that natural approaches are better than hormone pills for treating menopausal symptoms (Newton, et al., 2002).

A national survey on women's use of CAM has revealed that more than 50% of CAM users indicated that this practice was consistent with their beliefs, and 55% reported that they preferred a natural treatment (Chao, et al., 2006).

Although few studies have been found on the effect of complementary and alternative medicine therapies, the trials reported the benefits of soy isoflavones and other complementary therapies in improving the non-vasomotor symptoms associated with menopause (Nelson, et al., 2005)

2.2.5.3 Exercise

Being physically active may help with hot flushes, stress, and mood alterations. It has beneficial effects on wellbeing and coronary heart diseases risks (Dennerstein, et al., 2007). It was also found that stimulating activities for the brain can help rejuvenate memory such as reading books and doing crossword puzzles.

Elavsky and McAuley (2005) found that the psychological, somatic, and urogenital symptoms of menopause were reduced by walking. And Physical activity was found to enhance mood and menopause related QoL (Elavsky and McAuley, 2005).

Exercise practice was approved by many studies to be effective in relieving climacteric women complaints (Bittar, et al., 2017). It was found to be effective in improving total bone mass (Thiebaud, et al., 2013).

However, Daley, et al. (2014) showed that there was insufficient evidence to show whether exercise is an effective treatment for vasomotor symptoms or other symptoms of menopause (Daley, et al., 2014).

In a randomized controlled trial, it was shown that physical activity could enhance the menopause related QoL through the improvement of physical symptoms, and accordingly mental health, physical self-worth and positive affect (Elavsky, 2009).

Logically, exercise is always considered an essential lifestyle factor for weight reduction, and this hypothesis could be effective as an intervention after menopause.

2.2.5.4 Diet and Phytoestrogens

Healthy diet that is rich in fruits, vegetables, whole grain food, and fibers can help with moodiness and fatigue. It was found that low fat diet associated with a mean weight loss of 5.8 kg in 14 weeks, in postmenopausal women (Barnard, et al., 2005).

Shifren, et al. (2014), mentioned that increased phytoestrogens intake such as soy products and isoflavones products can improve the menopausal symptoms such as, hot flushes, and can help in inhibition of atherosclerosis formation, especially when taken during the first 5 years of menopause to prevent. In terms of beneficial herbs for menopause, it was found that black cohosh could be beneficial for premenstrual syndrome, menopausal symptoms, and dysmenorrhea for unknown mechanisms. Furthermore, St. Johns or Hypericum Perforatum has been evidenced for its beneficial role in cases of depression and anxiety symptoms in peri and postmenopausal women as well. Chasteberry also was found it to be advantageous for managing premenstrual syndrome, irregular menstruation, and kava for anxiety management (Shifren, et al., 2014).

In another study, it has been suggested that phytoestrogens act as selective estrogen receptor modulators, exerting anti-estrogenic effects in the high estrogen environment of premenopausal women and estrogenic effects in the low estrogen environment of

postmenopausal women (Seibel, 2003). And it was found that consumption of 30mg of soy isoflavones per day reduces hot flushes by up to 50% (Kurzer, 2008).

On the other hand, in a randomized placebo controlled trial, 90 women intaking 1 gm of flaxseed per day, which is a primary source of lignans that are metabolized into phytoestrogens (Landete, 2012). There was a significant effect that was observed by the women in relieving the menopausal symptoms (Colli, et al., 2012). However, inconclusive findings were reported in a review included 43 cases studies, to examine the effect of phytoestrogens on vasomotor symptoms treatment, and there's still insufficient evidence to uspport using the phytoestrogens instead of HT (Estrada, et al., 2017).

2.2.5.4.1 Vitamins and Minerals

Menopausal women are exposed to different fluctuations in their vitamin and mineral requirements.,eg, intestinal calcium absorption decreases, while bone resorption increases after menopause due to the decreased estrogen in body. These changes increase the need for calcium and vitamin D for their known roles in the skeletal bone and teeth health. The main dietary sources of calcium are dairy products (including milk, cheese, and yogurt), providing an average of 70% of the total calcium intake in midlife and older women. Women should be informed about the importance of calcium intake and vitamin D supplementation in case of their deficiency to keep healthy skeletal bones and teeth, especially those who are on anti-epileptic drugs (Shifren, et al., 2014).

2.2.5.5 Social interactions and support

Emotional support from family and friends are very effective means for improving the psychological status of menopausal women, while being stigmatized from the society may lead to fear and bad quality of life for them (Afridi, 2017).

2.2.5.6 Pharmacologic Interventions

2.2.5.6.1 Hormone Replacement Therapy (HRT)

Hormone therapy is available in a variety of formulations and doses that can be taken orally, vaginally, or intranasally. It can be used as an implant, skin patch, or cream.

However, HT is associated with an increased risk of stroke, venous thromboembolism, and pulmonary embolism, and there was no evidence that it is associated with CVD prevention in postmenopausal women (Boardman, et al., 2015).

The addition of a progestin to estrogen can reduce the risk of endometrial hyperplasia that is associated with the use of estrogen alone (Furness, et al., 2012). This overgrowth of cells in the lining of the uterus can lead to uterine cancer.

Menopausal hormone therapy improves vasomotor symptoms and vulvovaginal atrophy symptoms and prevents osteoporosis (Bhavnani and Strickler, 2005). There is low quality evidence that intravaginal estrogen preparations, improve the symptoms of vaginal atrophy in postmenopausal women compared to placebo (Lethaby, et al, 2016).

Moreover, in the systematic evidence review which has been accomplished by Nelson, et al., (2005), it has been found that the use of opposed or unopposed estrogen is the most effective therapy for vasomotor symptoms associated with menopause (Nelson, et al., 2005). Moreover, most studies showed the benefit of estrogen in the management of urogenital symptoms, and some studies showed its benefits on the management of sleep, mood, and depression, sexual function, and on quality of life improvement when compared with placebo. However, the adverse effects of estrogen use commonly include breast tenderness and uterine bleeding, and other symptoms include nausea and vomiting, headache, weight change, dizziness, venous thromboembolic events, cardiovascular events, rash and pruritus, cholecystitis, and liver effects.

On the other hand, trials of progestin indicated mixed results for treatment of vasomotor symptoms, and few trials of testosterone were found, where one trial indicated no differences between testosterone/estrogen and estrogen alone for hot flushes severity, vaginal dryness, or sleep problems. In two other trials sexual symptoms were found to be improved with testosterone/estrogen compared to estrogen alone or placebo. However, the use of testosterone/estrogen therapy was associated with acne and hirsutism when compared with the use of estrogen alone (Nelson, et al., 2005).

It has been evidenced by the Million Study Women in which 1084,110 UK women aged 50-64 years have participated, that HRT use is associated with an increased risk of breast cancer development and the risk is more associated with estrogen-progestin combination

than other HRT types and the risk also increases by increasing the duration of HRT use (Million Women Study Collaborators, 2003).

On the other hand, the increased risk of breast cancer was associated with the duration of HRT use (Jacobs, 2000). Also, it was suggested that the treatment with the combined HT is associated with increased breast cancer risk beyond that associated with estrogen alone (Schairer, et al., 2000). Furthermore, in HERS clinical trial, it was found that HT increase blood clots in legs and lungs with no decrease in heart disease (Grady, et al., 2002). It was advised by the WHI trial that HT be used for short duration for hot flushes, night sweats, and vaginal dryness in an individualized way of management. Moreover, it is not advised to be used for chronic disease prevention (Writing Group for the Women's Health Initiative Investigators, 2002).

2.2.5.6.2 Antidepressants

Depression during menopause could be treated by antidepressants, the same as treating depression that occurs due to any other cause. Antidepressants that are used include SSRIs such as fluoxetine, paroxetine, SNRIs such as venlafaxine, and TCAs as amitriptyline (García-Ríos , et al., 2017).

Chapter three
Methodology

3.1 Introduction

This chapter included the methodology of the study, in which the designs, the setting, the population segments of the study are discussed. Sampling calculation and process, inclusion, and exclusion criteria are presented. This chapter also includes methods of data collection and analysis. The methodology is a very important part of the research, where it identifies the methods in which the practical study was conducted to represent a large number of the Gaza population. In this study, the population and the study sample were from the women resided in Gaza strip who are aged between 40-60 years.

3.1.1 Study Design

This study is an analytic, cross-sectional study. It was conducted to explore the related symptoms of menopause and their severity for menopausal women in Gaza, gather more information and study women's attitude towards menopause, and the quality of life for women aged 40-60 years in Gaza Strip.

Analytic studies can test study variables and can determine the relationships between variables to give a meaningful impact to the study. Cross sectional studies have many advantages over the other types of studies, as they can be conducted during a short period of time (Greenwood and Levin, 2006) with less effort and costs. Also, they can give the results at the same time of data collection.

3.1.2 Study Setting

This study was conducted in a community based setting, for the purpose of creating new knowledge or understanding about a practical community issue in order to bring about change. Community-based research is becoming increasingly important in the healthcare field as communities are required to take greater ownership and control over decisions affecting the healthcare of people. The issue is generated by the community and community members participate in all aspects of the research process Community-based research must have a high degree of relevance to the community. Community-based research focuses the research endeavour in the context of daily work activities to solve problems and help make those activities more effective and ultimately more satisfying. The

research should result in decision-making by the community (i.e. individuals, community agencies, health units, program managers, etc.) or provide information to the community. The women participants of the research who are aged between 40-60 years are found randomly in the most crowded places such as the PHCs, where a huge number of these women with different backgrounds. The sample was taken randomly from different primary health care centers in Gaza Strip. PHCs could receive many people daily especially midlife women for different complaints. This category of people could be found mostly in the PHCs rather than schools, universities or work. Also, it was suggested that household surveys would be unacceptable for different reasons. The selection of the PHCs was dependent on the crowdedness of those PHCs and on their representativeness to the geographical regions of Gaza Strip. One PHC in Gaza city, one PHC in the area of North Gaza, and a PHC center in the area of South Gaza. This, ultimately, reflects a representative sample to the different kinds of the social, economic, and cultural backgrounds of women.

The target population is women whose ages are between 40-60 years in Gaza Strip. The study population was women who were present in the PHC centers, where the study was conducted. The sample for this study was taken randomly from the menopausal women, aged 40-60 years who present in the PHC centers.

3.1.3 Study Population

The target population is all the women who are aged between 40-60 years in Gaza Strip. The study population was women who were found in the PHC centers, where the study was conducted, and were aged between 40-60 years. The sample for this study was taken randomly from the menopausal women, aged 40-60 years who existed in the PHC centers where the study was conducted.

3.1.4 Sampling

3.1.4.1 Sample Calculation

According to the findings of PCBS, (2018), the total population in Gaza Strip forms 1,899,291, and the female population forms 936,350. While the women aged 40-60 years old form around 5.5% from the total female population (Abu-Hamad, et al., 2016), the target population was 51177. According to the Epi-Info sample size statistical calculator, it was found that the needed sample size for this study is 381 at confidence level of 95%,

expected frequency of 50%, and at 5% acceptable margin of error. The researcher increased the sample size to 400 to avoid non-respondents errors. A sample of 200 women was taken from Gaza city area, 100 from the north of Gaza, and another 100 from the south of Gaza.

3.1.4.2 Sampling Process

The sample was selected by a probability stratified technique from PHC centers in Gaza Strip after studying their geographic distribution and their crowdedness in relation to the population study. A simple random sample selection of women aged 40-60 years was taken from people who were attending the selected PHC centers for this study, where different kinds of females.

By taking the sample from the major PHCs in Gaza region, the sample size was divided into three regions according to the ecological distribution of the targeted population, where Gaza City is the the most densely populated area , 200 women from the whole sample were taken from Gaza City's most crowded PHC center in Gaza city, Al-Remal Martyrs Center. From the north of Gaza governorate, the most crowded PHC center in this area was selected for data collection, Jabalia Martyrs Center. The sample from this region formed 100 women from the whole sample. By the same way, from the south of Gaza governorate, the most crowded PHC center in this region, Khan-younis Martyrs Center, was selected to take the rest 100 women of the whole sample. It was supposed that the five governorates of Gaza Strip could be studied by dividing them to the above three areas as Rafah and Khan-Younis governorates could reflect the same category, Jabalia reflects the governorate of north Gaza and Gaza governorate with the mid zone could be reflected by Gaza city.

3.1.5 Eligibility criteria

3.1.5.1 Inclusion Criteria

- Menopausal women who are between 40-60 years old.
- Primary health care centers that were selected as settings for this study.
- Women resided in Gaza for more than 2 years.

3.1.5.2 Exclusion Criteria

- Women who are younger than 40 years or older than 60 years.
- Women aged 40-60 years, but still premenopausal.

- Primary health care centers that were not selected as settings for this study.
- Women who resided in Gaza for less than 2 years.

3.1.6 Ethical and administrative considerations

We got an approval from Helsinki Committee to conduct the study annex (4). The second part which was related ethically to the respondents was requested as an informed consent from each respondent; this assured their agreement to participate in this study, and protected their privacy and confidentiality.

All the required administrative approvals were completed, such as the approval from the School of Public Health at Al Quds University, and the approval from the human resources development in order to collect the data of the study in the selected PHC centers.

3.1.7 Study Instruments

A semi-structured questionnaire was used to ask about the symptoms, level of awareness and attitudes regarding menopause annex (3). Another semi-structured 5 point Likert-type scale questionnaire was used to analyze the quality of life for those women. The responses were rated from 1 (strongly disagree) to 5 (strongly agree) annex (3).

The major domains of the menopause health questionnaire, which is from the North American Menopause Society included the women's personal information and habits, height and weight information, medical, gynecologic, obstetrical, medication and family history, menopause symptoms, and the last section was about the attitudes and views of the respondents regarding menopause and hormone therapy annex (3).

The second instrument was from Utian Quality of Life Scale (UQOL) as a menopause specific quality of life scale (Utian, et al., 2002). It included general life and health status, work and professional life, family life, and the psychological status for the women annex (3).

The third instrument was a semi-structured, KAP questionnaire which included yes or no questions for the assessment of knowledge and practice towards menopause and a 5 point likert scale questions about attitudes towards menopause annex (3).

3.1.8 Data Collection

The researcher with other three data collectors, who were trained for three days, collected the data by interviewed questionnaires from the women under the inclusion criteria. The data collection was conducted during 4 months within the PHC centers working hours. The response rate was around 33%, which means that around 1200 lady were asked to participate in this study in order to collect questionnaires from 400 lady; all non-respondents were replaced by the next coming ladies. This low response rate could be related to the sensitivity of the study topic, where the asked women were not used to talk about this topic. Another reason could be related to the study setting, where most of the women were existed in the PHCs of the study in order to take their medication and go back to their homes, and they were not greeting any interviews.

3.1.9 Data entry and data analysis

The statistical package of social sciences (SPSS) program, version 22 was used for data entry and analysis. After the data reviewing and coding, the computerized SPSS program was used to enter the data and the data cleaning after that was conducted. The analysis process was performed by using the different tests of the SPSS. Descriptive statistical analysis was performed for the quantitative variables to find out the mean, median, and other statistics. For the qualitative variables, percentages were found out. Frequency tables and cross tabulation were used to test the relationships between variables. For analyzing the relationship between two categorical variables, a chi square test was conducted. For analyzing the relationship between two independent categorical variables with a dependent continuous variable, t-test analysis was performed. For analyzing the relationship between three or more independent categorical variables and a dependent continuous variable, one way ANOVA test was conducted. Confidence level of 95% was used, and odds ratio were used for measuring the probability of developing an event in the presence of an independent variable or the absence of it. Advanced statistical tests with P-value of .05 or less were considered as statistically significant.

After data collection and data entry, almost half of the data have been re-entered, and data cleaning have been performed. After that an analysis plan has been done from the study objectives and the conceptual framework;

First able, descriptive analysis including percentages, central tendency measures, and other descriptive analysis measures have been applied for all the first sections of the questionnaire such as the demographic factors, height and weight information, medical history, gynecologic history, obstetric history, personal habits, and others. Then, the knowledge, attitude, and practice scores towards menopause were explored, and quality of life score also was calculated.

After that, inferential statistics was applied to test the relationships between the dependent variable (menopause), and the various independent factors.

Ex; 1- The relationship between the different factors, such as the socio-demographic factors (as categorical independent factors) and the severity of menopausal symptoms by the quality of life score for menopausal women (as a continuous dependent variable) by using independent t-test and one way ANOVA test.

2- The different factors affecting the age of menopause (as the dependent continuous variable) by the same way.

3-The relationship between age of menopause (as the independent factor) and the quality of life score for menopausal women (as the dependent variable) by correlation test.

4- The effect of educational status (independent categorical variable) on the knowledge score (dependent continuous) by one way ANOVA test.

5- The relationship between knowledge score and attitude score by correlation test.

6- The relationship between age of menarche and age of menopause by correlation test.

3.1.10 Scientific rigor

3.1.10.1.1 Validity

The quantitative instruments that were used in this study were semi-structured, which means that their validity needed to be proven. To assure the validity of the questionnaires, 10 experts were asked to evaluate the three questionnaires, and their comments were taken in consideration. Furthermore, the pilot study which was conducted before the actual data collection to examine the women responses to the questionnaires and how they understand them enhanced the validity of these questionnaires, where any needed modification was done.

3.1.10.1.2 Reliability of the instrument

To assure the reliability of the quantitative study instruments, standardization of questionnaires was guaranteed by training the three data collectors on the data collection by the same way. Entry of data during the same time of data collection was carried out in order to re-chick the quality of data to modify any possible errors when needed. Furthermore, re-entry of around 50% of the data after the overall data entry assured the quality of data entry. Also the pilot study that was conducted assured the validity and the reliability of instruments.

3.1.11 Pilot study

For ensuring that this study was conducted properly according to the above criteria, a pilot study of 20 women was conducted to test the validity, and the reliability of the instruments. The pilot study also showed any errors in the methodology of the study to be corrected.

3.1.12 Limitations of the study

- The limited time that was available to conduct this study.
- The low response rate (33%) by the targeted women, which caused the data collection to consume much time.
- The study included only women visiting the places where the data collection was conducted within the study period while the opinions of women who didn't come could be important to reflect better image for reality.
- The limited literature that is available to search for the same topic of this study especially that reflecting Palestine for the same topic.
- The limited places for permitted data collection places, where the data was collected from the governmental PHCs only, while the UNRWA clinics which can reflect mostly the refugee women were not included in the data collection process
- The high cost of data collecting personnel and tools.
- The lack of knowledge about the medical issues especially the biochemical laboratory results for the women themselves

3.1.13 Period of the study

The study consumed 9 months. It began in June, 2018 and was completed by February, 2019.

Chapter four

Results and discussion

4.1 Introduction

This chapter presents the results of the statistical analysis of the data and the interpretation of these results. First able, the results of the descriptive analysis would be discussed after representing all the demographic characteristics of the respondents by frequency tables. Some comparisons of previous studies results with our results regarding the same topics are presented. After that, the results of inferential statistics concerning the objected relationships of the various factors in relation to menopause would be discussed in order to conclude the major points and results excreted from this study.

4.2 Descriptive statistics

4.2.1 Demographic variables

Table (4.1): Distribution of participants by socio-demographic related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Age	40-49 years	112	28 %
	50-55 years	170	42.5 %
	56-60 years	118	29.5 %
	Mean age	52.47	
Marital status	Single	25	6.3 %
	Married	295	73.8 %
	Divorced	20	5.0 %
	Widowed	60	15 %

This study sample was formed from 400 participants; all the participants were from women aged 40-60 years who were selected randomly from the three major primary health care centers in Gaza Strip. 200 participants (50%) were from Gaza city, 100 participants (25%) were from North Gaza, and the rest of the sample was formed of 100 participants (25%) from South Gaza. The demographic residency for the participants showed a normal geographic distribution for a representative sample.

As the selected women were between 40 and 60 years old, the descriptive statistics showed that 112 participants were between 40-49 years old at a 28 percent, 170 participants were between 50-55 years old forming 42.5 percent, and 118 participants were between 56-60 years old forming the rest 29.5 percent of the whole sample; the mean age for the study participants was 52.47 years with a SD of 4.65.

In relation to the marital status for the study participants; 25 of the participants were not ever married at a 6.3 percent, 295 were married at a 73.8 percent, 20 were divorced at a 5 percent, and 60 were widowed forming 15 percent of the whole sample.

Table (4.2): Distribution of participants by demographic and educational related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Citizenship	Non-refugee	239	59.8 %
	Refugee	161	40.3 %
Educational level	Un-educated	36	9.0 %
	Primary-secondary	293	73.3 %
	Bachelor's and high studies	71	17.8 %
Family members	1-6 members	186	46.5 %
	7-12 members	200	50.0 %
	13-19 members	14	3.5 %
	Mean	6.88	

239 of the participants at a percent of 59.8 were non-refugees, and 161 participants at a 40.3 percent were refugees; this distribution could be related to the sampling place where the data collection has been performed; as the visitors of the PHCs which were selected are mainly from non-refugees while the refugees are the main visitors of the UNRWA centers.

The educational level for the sample women was also analyzed, showing that the highest percent (73.3%) was from the women who were educated to the preliminary or to the secondary level, this was followed by 17.8 percent for a 71 women who were holding a diploma, bachelor's or higher studies degrees, the rest of the sample was formed from 36 uneducated women at a 9 percent; this percentage of illiteracy is around what was reported by the PCBS (2018), where the females illiteracy rate is estimated at 23,205 in Gaza Strip

(15 years and over) meaning that it forms around 8.2%. The previous percentages can show the nature of our Palestinian, Gazan society for the fifty's and the seventy's decades, where the girls and the women were not gaining a sufficient chance or fortune of more schooling years, and consequently employment chances were few especially in their fifties. However, over the past three decades, educational improvement in the MENA region has been shown, while the females' labor force participation rate remained low (Massoud, and Nadereh, 2016).

The average household size in Gaza according to PCBS (2018) is 5.6; this is less than what was shown by these study results, where the average household size is around 7 members. The study population could be related to the different findings by the PCBS as the PCBS is considered with the whole female population in contrast with our study which is considered with a specific age group of female population. On the other hand, a study conducted in Gaza Strip and the West Bank found that Gaza Strip reported the largest percentage of poor households and the highest number of households with more than 8 children in comparison with the West Bank (Bates, et al., 2017). Another study in Gaza found that, (64.2%) had a large family size, composed of five or more members (El Bilbeisi, et al., 2018).

4.2.2 Socio-economic variables

Table (4.3): Distribution of participants by employment status and income related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Employment status	Un-employed	343	85.8 %
	Employed	48	12.0 %
	Retired	9	2.3 %
Family members who work	Zero	60	15.0 %
	One only	210	52.5 %
	More than one	130	32.5 %
Family monthly income (NIS)	Less than 1000	200	50.0 %
	1000-3000	186	46.5 %
	3001-5000	14	3.5 %
Is the respondent considered as the main breadwinner of the family	No	318	79.5 %
	Yes	82	20.5 %

In relation to the employment status, the un-employed women were 343 with the highest percent forming 85.8%, 48 of the sample women were employed forming a percent of 12 %, and the retired women were 9 at a 2.3 percent. These percentages could be differed with the PCBS results due to the selected age group for this study, as according to the PCBS (2018), female unemployment in Palestine reached to 40.1 %, compared with 44.7% for females in the 2nd quarter 2016, and the participation rate was 19.6% for females in Palestine for the year 2016 (PCBS, 2016). The unemployment rate is higher in this group of our study and this could be related to that the population of this study were born in the fifty's or seventy's. Accordingly, being the main breadwinner forms around 20% only and this was mainly related to being widowed or divorced.

By the same way, as the table (4.3) above shows, it was found by this study that 15 % of the study participants are related to families which do not have any working member, while the families who contained more than one family member working were 130 (32.5%) and the highest percent was for the families who contained one family member working (52.5%).

In 2018, the unemployment rate reached to 48.2% in Gaza Strip according to PCBS (2018). The recent situation in Gaza Strip is affected by different political aspects; accordingly, the economic situation and the monthly wages are affected. This study showed that half of the sample (50%) had a monthly income accounted for less than 1000 NIS, followed by 46.5% earning between 1000-3000 NIS monthly, and the lowest percent (3.5%) was for those who have more than 3000 NIS monthly. This indicates less than what was reported in the PCBS (2016) which indicates that the average daily wage for wage employees in the Gaza Strip is 61.6 NIS and accordingly the monthly income ranges around 1800 NIS (PCBS, 2016). And in a study conducted in Gaza in 2018, it was found that (87.8%) had a family income of ≤ 2000 NIS per month (El Bilbeisi, et al., 2018).

4.2.3 Somatic characters

Table (4.4): Distribution of participants by height and weight related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Height in cm	Mean	160.88 cm	
Weight in kg	Mean	81.7 kg	
BMI	18.5-24.9 (normal wt.)	43	10.7%
	25-29.9 (over wt.)	126	31.5%
	30 and over (obese)	231	57.8%
	Mean	31.67	

After computing the BMI for the studied women, the results showed that 31.5% were classified as overweight (BMI=25-29.9) according to the WHO classification regarding obesity, and 57.8 % were found to be obese (BMI=30 and over). These percentages indicate a high prevalence of obesity in Gaza Strip females, and this could be explained by the chosen age group along with the high unemployment status. This result may coincide with what was found in a cross-sectional study conducted in three regions in Gaza Strip on mothers aged 18-50 years to explore the prevalence of obesity and being overweight in relation to socio-demographic factors in 2012. The study showed that the prevalence of obesity and being overweight among mothers was the highest in the rural areas at 67.5% (47.5% overweight, 20% obese); the percentage of mothers who were obese or overweight in the refugee camps was almost the same at 66.8% (35.9% overweight and 30.9% obese); 57.0% of women in the urban areas were overweight or obese (26% overweight and 31% obese), and the same study showed that being obese or over-weight among mothers is associated with increased age and being menopaused (Abed, et al., 2014).

Another study conducted in Moroccan population aged 18 years and above to investigate the association between obesity and age showed that the prevalence of overweight was 32.9% in women, and that the risk of obesity and overweight increased with age with the highest risk being in individuals aged 45-54 years. The risk of obesity also increased in married women (El Rhazi, et al., 2011). 81% were overweight or obese among southern Jordanian women, which is around our result, where 89% in our study were overweight or obese (Shakhatreh & Mas, 2006).

In a systematic literature review of studies and health reports which included the prevalence of overweight and obesity. It was found that overweight and obesity among adults in Palestine for 15-49 years old females in 2002 was (10.9%) compared with (7.1%) in Libya in 2000; (53%) for the age group from 20 to 65 years in Kuwait and (40.3%) in Bahrain in 2007 and (50.4%) for the age group from 25-65 years old females in Saudi Arabia; and it was (13.3%) in Tunisia for females aged 35-70 years old in 2005, however the percentage of being overweight for the same age group was (71.1%). The percentage of obesity in urban areas was higher in Palestine (West Bank) by (49.1%) compared to (36.8%) in rural areas in 2003; the same for Egypt, Morocco, Oman, Iran, Saudi Arabia the obesity was higher in urban areas (Musaiger, 2011).

4.2.4 Menstrual characteristics

Table (4.5A): Distribution of participants by menstrual period related data (N=400)

Variable	Sub-categories		Freque	Percentage %
Age of menarche	10-12 years		79	19.8%
	13-15 years		286	71.5%
	16-19 years		35	8.8%
	Mean		13.71	
	SD		1.4	
Regularity of the respondent's menstrual period	Who said yes		315	78.8 %
	Who said no		67	16.8 %
	Who do not know		18	4.5 %
Number of the respondent's menstrual period days	less than a week		186	46.5 %
	for a week		186	46.5 %
	more than a week		28	7.0 %
The pain degrees of the respondent's menstrual period	not painful		54	13.5 %
	mild pain		165	41.3 %
	moderate pain		118	29.5 %
	severe pain		63	15.8 %
Mood swings	Pre-period	Yes	86	21.5 %
		No	314	78.5 %
	During period	Yes	84	21 %
		No	316	79 %
	Post-period	Yes	9	2.3 %
		No	391	97.8 %
Headache	Pre-period	Yes	56	14 %
		No	344	86 %
	During period	Yes	66	16.5 %
		No	334	83.5 %
	Post-period	Yes	24	6 %
		No	376	94 %

The majority of the respondents (71.5%) got their periods at an age between 13-15 years, while 19.8% were between 10-12 years, and a minority of (8.8%) was between 16 and 19 years old when they got their first period. The results showed that mean age of menarche for Gazan females born between the fifty's and the seventy's is 14 years with a SD of 1.4, and the median age is 14 (table 4.5A).

The results of this study regarding age at menarche are somewhat compatible with other studies in different countries, where menarcheal age less than 9 is considered as early menarche and menarcheal age more than 15 is considered as late menarche. For example; it was found in a study conducted in India that the mean age of menarche is 13.51 plus/minus 1.04 years for females from urban areas, and 13.67 plus/minus 0.8 years for girls from rural areas (Dambhare, et al., 2012). In another study which was conducted to compare the median age at menarche in Mexico and Egypt, which are two developing countries, in relation to BMI, socioeconomic level, and urban/rural residence for Mexican and Egyptian adolescents; it was found that the median age at menarche is 12 years for Mexican girls and 13 years for Egyptian girls. This study evidenced that being obese or overweight and living in urban areas rather than living in rural areas were risk factors for an earlier age of menarche (Torres- Mejía, et al., 2005). In North-west Ethiopia, the median age of menarche was 14.8 years in a cross sectional study among school student females (Zegeye, et al., 2009).

A study conducted on nursing school students in Taiwan showed that the average age of menarche among those girls was 12.6 (Chiou and Wang, 2008).

Moreover, in Portugal, it was discovered that a decrease in mean age at menarche from 15 years for girls born in 1880s to 12.44 for those born in the 1980s has been evolved (Padez, 2003). The previous results regarding menarcheal age could be related to the different geographical and economic situations of the previous countries where the studies were conducted. We can explain that the females in Portugal, which is the most developed country in comparison with the other countries above, reach to the menarche earlier than females in Ethiopia which is the least developed country, since it has been suggested that well-nourished girls reach to the puberty and menarche earlier than those who are poorly nourished and coming from poorer areas. However females living in tropical areas usually reach to menarche later than others as in the case with Ethiopia. Age of menarche depends

on the extrinsic factors as the socio-demographic factor while the age of menopause depends on the intrinsic factors like the reproductive history (Thomas, et al., 2001).

Since menarche occurrence depends on the hypothalamic-pituitary-ovarian (HPO) axis. Normal functioning and maturity of the hypothalamus, the pituitary gland, and the reproductive anatomy along with proper nutrition and the absence of intervening chronic illnesses are necessary.

The menstrual cycle is the periodic series of hormonal changes in the woman's body for the purpose of preparation of a possible pregnancy every month. These changes lead to the menstrual period when the secreted egg by one of the ovaries is not fertilized for pregnancy.

Menstruation occurs when the pulsatile hypothalamic production of gonadotropin-releasing hormone (GnRH) stimulates the pituitary production of follicle stimulating hormone (FSH) and luteinizing hormone (LH). This pulsatile secretion pattern is required for menarche to occur rather than continuous secretion of GnRH, which can inhibit pituitary production of FSH and LH and delay menarche. After that, FSH and LH stimulate estrogens and androgens production by ovaries and the produced Estradiol promotes maturation of ovarian follicles, with one follicle gaining dominance during each menstrual cycle. The increased estrogens levels stimulate uterine endometrial proliferation and cause a surge of LH production by the pituitary gland. This LH surge causes the rupture of the dominant ovarian follicle. This process happens periodically, mostly monthly (every 28 days), or every 21 to 35 days in normal cases leading to the shedding of the uterine endometrial lining through the vagina in cases of the absence of a fertilized ovule for pregnancy (Lacroix and Whitten, 2017).

In relation to the menstrual cycle regularity every month, 78.8% of the participant women reported that their periods were regular, while 16.8% reported that their periods were irregular, and 4.5% said that they do not know about their menstrual cycle regularity. In Estonia, a study was performed on early menarcheal teen-age participants to find out the factors affecting menstrual cycle irregularities, and it revealed that 40% of the participants reported irregular periods, and the affecting factors were low BMI (less than 17.5), low economic status, and insufficient communication with parents (Järvelaid, 2005). Moreover, the study which has been conducted by Dambhare, et al. (2012) revealed that 30.48% had

irregular menstrual cycle length among Indian females. However, in Chiou and Wang (2008) study, 61.6% of the Taiwanese nursing school females had irregular menses (Chiou and Wang, 2008).

In order for menses to occur, ovulation should occur before 12 to 16 days usually and the ovulating regularity could differ from one cycle to another. The menstrual cycle can differ every month in regularity and quantity of blood loss for the same female. Different factors can affect that, such as the nourishment status since weight loss can cause amenorrhea which is defined as the absence of menstrual period for more than 6 months. This could be due to that a minimum level of stored, easily mobilized energy is necessary for ovulation and menstrual cycles in the human female body (Thomas, et al., 2001).

The menstrual cycle, which is counted from the first day of one period to the first day of the next, isn't the same for every woman. Menstrual flow might occur every 21 to 35 days and last three to seven days. For the first few years after menstruation beginning, long cycles are common. However, menstrual cycles tend to shorten and become more regular as the woman ages.

Irregularity in menses could be related to different factors; some are normal, such as the normal timing during the first years after menarche; pregnancy and breastfeeding, and some factors are abnormal such as eating disorders and excessive exercise (Wei, et al., 2009), or due to a disease such as primary ovarian insufficiency when the periods occur irregularly or occasionally for years or premature ovarian failure which refers to the loss of normal ovarian function before age 40; Scarring within the uterine cavity (Asherman's syndrome); Pelvic inflammatory disease (PID) where the infection of the reproductive organs can cause irregular menstrual bleeding; hormonal changes (Wei, et al., 2009) such as thyroid dysfunction, and prolactin hormone elevation in the female’s body, adrenal gland problems, uncontrolled diabetes, and hormonal birth control methods; and some medications such as epilepsy treating drugs.

A case-control study was performed to evaluate the prevalence and risk factors of menstrual cycle irregularities in adolescents with type 1 diabetes mellitus. It was found that oligomenorrhea (when the menstrual cycle length is more than 35 or 37 days) and amenorrhea were more prevalent in type 1 diabetic females than in control females by (58.9% vs. 19.6%) and (10.7% vs. 1.8%) respectively. And regression analysis showed

that, for each point of increase in HbA1c, the menstrual cycle duration increased by 5.1 days (Gaete, et al., 2010).

And the results from Van Anders and Watson (2006) study, which aimed to test the relationship between testosterone level and menstrual irregularity in women, showed that there is a significant correlation between testosterone and menstrual irregularities, even when women with the most irregular cycles were excluded from analyses (Van Anders and Watson, 2006).

Too far apart or too close together periods may be because of stress, some types of exercise, weight loss, or diet. Too few periods could be caused by Polycystic Ovary Syndrome (PCOS) which causes the woman's ovaries to produce high amounts of androgens.

Around half of the participants said that their menstrual bleeding was for less than a week (46.5%), (46.5%) said that their menstrual bleeding periods were for a week, and only 7% reported that their periods were lasting for more than a week. However, in Chiou and Wang (2008) study, 83.9% had menstrual cycles lasting between 4 and 6 days. This could be related to the age groups of the two studies. Generally, normal menstrual period lasts between 3 and 7 days. However, Different factors may affect the blood loss quantity every month which is mainly related to the shed of the uterus lining thickness and the exposed blood vessels. For example; combined birth control hormones can make the menstrual cycle more regular and lighter in relation to the blood loss. This could be related to the counteract effect of these hormones to the natural female hormones leading to a thinner endometrium lining where the estrogen of the birth control pill or patch decreases the build-up of the uterus lining and the progesterone of the pill counteracts this build-up leading to a thin uterus lining. Other medical conditions may cause heavy bleeding and \or prolonged menses such as bleeding disorders; polycystic ovary syndrome (PCOV); uterine fibroids which is benign growths of uterine muscle or hypothyroidism; endometrial polyps which is benign overgrowth of the lining of the uterus; adenomyosis which is the presence of uterine lining in the wall of the uterus; uterine cancer; blood thinning medications such as aspirin; pelvic inflammatory diseases like chlamydia and gonorrhea; and non-hormonal IUDs.

Abnormal uterine bleeding (AUB) or irregular non menstrual bleeding could be related to bleeding or spotting between periods; heavy bleeding during period where it is usually used to refer to AUB; and menstrual cycles that are longer than 38 days or shorter than 24 days. AUB could be acute or chronic. Acute AUB is an episode of bleeding in a woman of reproductive age, who is not pregnant, that is of sufficient quantity to require immediate intervention to prevent further blood loss. And chronic AUB is bleeding from the uterine corpus that is abnormal in duration, volume, and/or frequency and has been present for the majority of the last 6 months (Fraser, et al., 2011).

AUB can be caused by one of these factors which are abbreviated in PALM-COEIN; Polyp, Adenomyosis, Leiomyoma (fibroids), Malignancy (and hyperplasia), Coagulopathy, Ovulatory disorders, Endometrial, Iatrogenic and Not otherwise classified (Whitaker and Critchley, 2016).

However, a study conducted on Danish women population aged 20-74 years who were selected randomly from the Danish Civil Registration System to estimate the prevalence of endometrial polyps and to investigate associated abnormal uterine bleeding among the target population for this study, showed surprisingly that women without polyps experienced more AUB specifically inter-menstrual bleeding type of AUB than others with polyps (Dreisler, et al., 2009).

Previous studies indicated that many factors may cause dysmenorrhea such as family history of dysmenorrhea (Ju, et al., 2013; Tavallaee, et al., 2011; Ozerdogan, et al., 2009); stress and depression (Ju, et al., 2013; Tavallee, et al., 2011); irregularity of menstrual cycles; earlier age at menarche; and not receiving education about dysmenorrhea (Chiou and Wang, 2008; Ju, et al., 2013); smoking or history of smoking (Ortiz, et al., 2009; Ozerdogan, et al., 2009; Ju, et al., 2013); and menstrual cycle pattern, cycle duration, flow duration, and amount of flow (Ortiz, et al., 2009); heavier and longer menstrual duration (Ju, et al., 2013). Moreover, according to Ozerdogan, et al. (2009) study, it was found that dysmenorrhea is 1.5 times higher in women who were underweight compared with overweight/obese women; 1.6 times higher in women who reported a history of smoking; and 1.8- times higher in women with an excessive sugar intake (Ozerdogan, et al., 2009). However, it was confirmed that dysmenorrhea improves with increased age, parity, and use of oral contraceptives (Ju, et al., 2013), where women who have positive attitudes towards menstrual periods have a lower risk of dysmenorrhea, and accordingly educating girls

about this issue may improve their attitudes (Chiou and Wang, 2008). Older age and high intake of fruits and vegetables were protective factors for menstrual pain (Tavallaee, et al., 2011). On the other hand, socio-economic status; and duration of menstrual cycle were not predictors for dysmenorrhea according to Chiou and Wang (2008) study. And body mass index; parity; smoking; and physical activity were not significantly associated with dysmenorrhea after controlling for potential confounding factors and effect modifiers according to Tavallaee, et al. (2011).

Dysmenorrhea is a common menstrual complaint which can be classified into primary and secondary dysmenorrhea. And it can have a major impact on women's quality of life, work productivity, and health-care utilization (Ju, et al., 2013). Dysmenorrhea is caused by radiating painful sensations felt at the center of the underbelly that may spread to the back and the inner sides of the thighs during menstrual periods, causing headache sometimes, due to functional and structural changes in the brain that lead to central sensitization (Chiou and Wang, 2008). Primary dysmenorrhea is related to the menstrual pain caused primarily by uterine problems that cause painful uterine ischemia during uterine contraction; but secondary dysmenorrhea is related to the menstrual pain caused by the pelvic cavity diseases like endometriosis, fibroids, pelvic infection, and uterine polypus (Chiou and Wang, 2008).

Table (4.5A) shows that a little bit than a half (41.3%) reported that they were suffering from a mild pain during their menstrual cycles, (29.5%) suffered from moderate pain, and (15.8%) were suffering from severe pain, while (13.5%) reported that they were not suffering from any type of dysmenorrhea. Previous studies on dysmenorrhea showed that 74.5% of the girls who had reached menarche had dysmenorrhea in Asian school girls (Wong and Khoo, 2010); 73.3% of Taiwan nursing school female students had experienced dysmenorrhea (Chiou and Wang, 2008). The prevalence of dysmenorrhea was 55.5% in Turkish university females (Ozerdogan, et al., 2009). And another cross sectional study on female students in a university in Ankara showed that the prevalence of dysmenorrhea in the students was 84%. This study found that 45.8% of female students experienced moderate menstrual pain (Aktaş, 2015).

According to Dambhare, et al. (2012), 56.15% of Indian females experienced dysmenorrhea. And in a cross sectional study in Tehran, Iran, the prevalence of no, mild, moderate, and severe menstrual pain was 10%, 41%, 28%, and 22%, respectively

(Tavallaee, et al., 2011). Moreover, in Metropolitan city, students suffering from slight dysmenorrhea were forming 52.9%, whereas those with serious cases represented 29.8% (Jung and Kim, 2004), and dysmenorrhea among Mexican students had a prevalence of 48.4% and was the cause of school absences for 24% of the affected students; it was mild in 32.9%, moderate in 49.7%, and severe in 17.4% of these students (Ortiz, et al., 2009).

Furthermore, the results of a comprehensive review on fifteen primary studies published between 2002 and 2011 showed that the prevalence of dysmenorrhea varies between 16% and 91% in women of reproductive age, with severe pain in 2%–29% of the women studied (Ju, et al., 2013).

The previous percentages may be explained by the brain morphometric study which evidenced that dysmenorrhea is associated with trait-related abnormal gray matter changes, even in the absence of menstrual pain, which means that the female's brain is vulnerable to menstrual pain. And it was evidenced that one to three days of menstrual pain is associated with rapid gray matter alterations in the brain (Tu, et al., 2013). Moreover, Dysmenorrhea may be related to different causes such as endometriosis; uterine adenomyosis or fibroids; STIs and pelvic scarring; IUDs especially copper IUDs; and heavy menstrual bleeding.

Dysmenorrhea symptoms differ from woman to another, where some women suffer from backache or abdominal pain and others suffer from headaches to different extents. And according to the different menstrual phases, different pains may be experienced by the menstruating women. In the current study, it was found that (14%) of participants were experiencing premenstrual headache; (16.5%) of participating women reported that they were experiencing headaches during their periods; and (6%) of them reported that they were experiencing headache after their periods. However, according to Dambhare, et al. (2012), 56.15% of Indian females experienced premenstrual syndrome, and headache was the most common premenstrual symptom (26.74%).

It is well known that mood swings is a common premenstrual syndrome and even during the menstruating phase in women. However, in this study only (21.5%) of the participating women indicated that they were experiencing mood swings and (21%) were experiencing mood swings during their periods, while (2.3%) only were experiencing mood swings after their menstrual periods. However, according to the study which has been conducted by

Aktas (2015) in Ankara, it was found that the most common co-occurring symptoms were irritability (34.6%) and fatigue (21.5%) (Aktaş, 2015).

Table (4.5B): Distribution of participants by menstrual period and menopausal related data (N=400)

Variable	Sub-categories		Frequency	Percentage %
Bloating	Pre-period	Yes	101	25.3 %
		No	299	74.8 %
	During period	Yes	98	24.5 %
		No	302	75.5 %
	Post-period	Yes	10	2.5 %
		No	390	97.5 %
Abdominal pain	Pre-period	Yes	163	40.8 %
		No	237	59.3 %
	During period	Yes	234	58.5 %
		No	166	41.5 %
	Post-period	Yes	24	6 %
		No	376	94 %
Low backache	Pre-period	Yes	157	39.3 %
		No	243	60.5 %
	During period	Yes	174	43.5 %
		No	226	56.5 %
	Post-period	Yes	43	10.8 %
		No	357	89.3 %
Spotting or bleeding between periods	No		274	68.5 %
	Yes		126	31.5 %
Age of menopause	Age of menopause from 30-39		6	1.5%
	Age of menopause from 40-49		270	67.5%
	Age of menopause from 50-59		124	31.0%
	Mean		47.125	
	Median		47	
	Mode		45	
	SD		3.89	
Menopausal status	Spontaneous		342	85.8 %
	Surgical		45	11.3 %
	chemotherapy or radiation		10	2.5 %
	Other		2	0.5 %

According to table (4.5B), (25.3%) of the participants said that they were suffering from bloating before menstrual period; (24.5%) said that they were suffering from bloating during their menstrual periods; and (2.5%) reported that they were suffering from bloating after their menstrual periods.

Regarding the abdominal pain; (40.8%; 58.5%; 6%) reported that they were suffering from pre-menstrual; during menstruation; and post-menstrual abdominal pain respectively. And in relation to dysmenorrheal backache; (39.3%; 43.5%; 10.8%) of the participants were suffering from pre-menstrual; during menstruation; and post-menstrual backache respectively. We can observe from these results that abdominal pain and low backache are the most common dysmenorrheal symptoms among women in Gaza Strip; this can be interpreted by the position of these organs which are highly related to the uterine contractions during menstruation in women.

Inter-menstrual bleeding is defined as irregular episodes of bleeding, often light and short, occurring between otherwise fairly normal menstrual periods. This bleeding may occasionally be prolonged or heavy, and it may occur on a regular basis around ovulation as a physiological event in 1–2% of cycles (Fraser, et al., 2011). It may be caused by minor surface lesions of the genital tract or in some cases caused by serious lesions such as cervical or endometrial lesions.

The results of the present study showed that (31.5%) have experienced inter-menstrual bleeding, while (68.5%) were not experiencing abnormal spotting or bleeding between periods. This type of abnormal uterine bleeding may be related to a sexually transmitted infection, or other causes like the copper intrauterine device in some cases which was evidenced to have undesirable effects on women inserting these types of IUDs (Hubacher, et al., 2009). Furthermore, it was found that women who suffered from a previous cesarean delivery scar are more exposed to inter-menstrual bleeding (Fabres, et al., 2005).

Our results showed that the mean and median ages of menopause for women in Gaza Strip are around 47 with a SD of (3.89). (1.5%), which formed 6 cases of the participants, were between 30-39 years at their menopause; 2 cases of the 6 reported that their menopause happened spontaneously, another 2 reported that their menopause occurred surgically due to a uterine rupture, that may occur as a result of repeated caesarian sections followed by a natural labor leading to the laceration and relaxation of the uterine muscles during

pregnancy or labor; in some cases this may be followed by a need of hysterectomy which is accompanied by oophorectomy leading to menopause, the fifth case said that her menopause was because of a psychological shock, and the sixth case mentioned that her early menopause was due to her familial history; (67.5%) of the participating women were between 40-49 years old when they had their last menstrual period; and (31%) were between 50 and 59 years old at their menopausal status. Different results were found in Erbil, where (4.4%) had premature menopause and (23.6%) had early menopause (Mustafa & Sabir, 2012).

In a systematic review aimed to describe the difference in menopausal age and prevalence of climacteric symptoms in Europe, North America, Latin America, and Asia; the results showed that the median age at menopause in Asia ranges from 42.1 to 49.5 years; in Latin America from 43.8 to 53 years; and in Europe and North America ranges around 50 to 53 (Palacios, et al., 2010). The mean age at natural menopause would be compared with that in other countries; it was found to be 50.4 years in Iran; while the median age was 49.6 years (Mohammad, et al., 2004). In Erbil city, the mean age of menopause was 47.44 years, and the median age was 48 years (Mustafa & Sabir, 2012) The mean age of the menopause in Egypt was 46.7 years (Sallam, et al., 2006), while in Ismailia, Egypt, the mean age was 48.1 years (Ibrahim, et al., 2015). In southern Jordan, the median age of natural menopause was 50 years (Shakhatreh & Mas, 2006), while the mean age, among women who visited Jordan University, was found to be 49.4 years (Jaber, et al., 2017). Also, in Tripoli city, the median age at menopause for women was 47 years (Taher et al., 2012), and the median age of natural menopause in Beirut, Lebanon was estimated to be 49.3 years (Reynolds & Obermeyer, 2001). In Sana'a city, in Yemen, the mean age at menopause was found to be 47.8 (Abdul-Halim, et al., 2018). Our results are compatible with the results found by the previous studies.

Regarding menopausal status, (85.8%) of the menopausal cases were natural, while (11.3%) of the cases were surgical due to oophorectomy which may be caused to treat large fibroids or cancerous tissues of the uterus along with the ovaries to prevent the spread of the cancerous tissues; (2.5%) of the menopausal cases were due to chemotherapy; meaning that 10 cases were exposed to chemotherapy which caused the weakness or death of the presented ovules leading to menopause; and (0.5%) which formed two cases of the total 400 participants were due to other causes; one of the two cases was 39 years old when

she had her last period and she reported that the menopause occurred as a result of a psychological trauma; the second case was 44 years old at her menopause, but she reported that this happened because of fear. A systematic review aimed to explore the incidence and consequences of uterine rupture in whom had caesarean section; it was found that trial of labor after caesarean delivery increased the risk of uterine rupture by 2.7 per 1000 cases, and the risk of hysterectomy increased by 3.4 per 10000 cases (Guise, et al., 2004). The results of the present study seems logical to an expectable extent as the majority of the cases were natural, followed by 45 cases of menopause caused surgically as the hysterectomy and oophorectomy are prevalent in women after the age of forty; and the minority was for menopause caused by chemotherapy or other causes.

4.2.5 Pregnancy and family planning

Table (4.6A): Distribution of participants by pregnancy and family planning related data (N=375)

Variable	Sub-categories	Frequency	Percentage %
Birth control use	Yes	207	55.2%
	No	193	44.8%
Birth control methods	Pills	95	25.3%
	IUD	147	39.2%
	Injectable hormones	31	8.3%
	Implanted hormones	2	.5%
	Condom	32	8.5%
	Natural family planning	22	5.9%
	Other	3	.8%
Number of pregnancies	Zero	16	4.3%
	1-6 times	113	30.1%
	7-12 times	211	56.3%
	13-19 times	35	9.3%
	Mean	7.73	

Table (4.6B): Distribution of participants by pregnancy and family planning related data (N=375)

Variable	Sub-categories	Frequency	Percentage %
Full-term births	None	19	5.1%
	from 1-5	125	33.3%
	from 6-10	202	53.9%
	from 11-15	29	7.7%
	Mean	6.19	
Pre-mature births	None	291	77.6%
	one only	47	12.5%
	more than one	37	9.9%
	Mean	.35	
Abortions	None	152	40.5%
	one or two	168	44.8%
	more than two	55	14.7%
	Mean	1.2	
Living children	None	18	4.8%
	from 1-5	129	34.3%
	from 6-10	198	52.8%
	from 11-15	30	8%
	Mean	6.29	

We can see from the table (4.6A) that the percentage of birth control use is (55.2%) among the population of the study. This result concerning family planning is affected by the duration of using the modern birth control methods and by the age group of this study. This finding shows that half of the participants used a birth control method at one point in their lives; however, the duration of use for the different methods is not known, neither if they have tried more than one method or only one. Different previous findings showed in Palestine regarding this topic could be compared with our results, with taking into consideration the different conditions. Ex; in a family planning KAP survey in a refugee camp in Gaza Strip, 841 women aged 15-49 years were interviewed in their homes. The results showed that 98% of the respondents favored family planning use; 88% wanted to use family planning methods in the future. However, it was found that 52% of the women at risk do not use any contraceptives, which resembles the result of our study. And it was

found that the tendency of having seven children and more is associated with the lower educational level (Donati, et al., 2000). Moreover, according to Hammoudeh (2014), 33% of women were using contraceptives in 1995 and 49% in 2010. And the contraceptive methods use was more among higher educated women. However, the study of El Khawajah (2003) showed that women in Gaza reported the least percentage of contraceptives use by women even by the highly educated women in comparison with women in the West Bank Lebanon, and Jordan (El Khawajah, 2003).

In Somalia in a study conducted in 2014, it was revealed that there is a relationship between educational level and contraceptive use. The same study showed that 43.5% of those women who are university educated reported that they would not use any contraceptives while all who are less-educated would not use contraceptives (Ahmed, et al., 2014). These results could be related to the Somali culture and to the undeveloped nature of the country.

As the results of the present study showed; the mostly used contraceptive method is the IUD by a percent of (39.2%), followed by pills (25.3%); condom use follows by (8.5%) and injectable hormones use by (8.3%); the least frequently used method is the hormonal implants (0.5%); (0.8%) of the participants reported that they used other methods than the mentioned in the table (4.6A) at a point in their lives; and in relation to the traditional methods, (5.9%) said that they depended on natural family planning without using modern contraceptives. These results are also affected by the duration of family planning use as the participants could have used one type only of contraceptives for long time or different types of contraceptives for short times.

The highest percentage of contraceptive types was for IUDs use; this could be related to the People's positive attitude towards this type of contraception, as their use is easy, with low cost and not related to everyday use and, in general, people try to avoid any pharmaceutical pills. The second percentage was for pills use as some women prefer to use it because of the easiness of using it as taking a pill daily. Condom use follows by a percent of 8.5% only as this may be accompanied by a higher cost, and sometimes it's not highly preferable by cultural norms. Around the same percentage (8.3%) was for injectable hormones using, this method is also not widely common and needs periodical application. However, only 3 women said that they have used other than the mentioned methods and 2 women have ever used the implanted hormones. On the other hand, some people still

prefer the natural methods where it is believed that any pharmaceutical methods are not safe.

In 2000, it was found that 71.5% of women using contraceptive, were using modern methods, while 28.5% were using conventional methods (periodic abstinence, breast feeding, and withdrawal) in Palestine. IUD users in 1996 were 24.1%, compared with 27.9% in 2000, and pill users were 4.3% in 1996 compared with 5.7% in 2000. The study attributed that to the increase in health awareness and to the development of newer and safer generations of contraceptives. IUDs and pills were the mostly common used methods as the results showed by our study. Condoms were used by less than 4% and only (0.2%) used injectable hormones, which is less than the percentage revealed in our study. The most cost-effective methods were IUDs and injections, however, pills were having low cost-effectiveness ratio (Sweileh & Barham, 2003).

In relation to the pregnancy times; 4.3% of the 400 participants were not pregnant for any time in their lives. This percentage could be related to different reasons, of which that 6.3% of the participants were never married and 1.8% suffered from impotency. However, never pregnant women formed (4.3%) out of the 375 ever married participants (30.1%) were pregnant for 1-6 times and (33.3%) gave birth to 1-5 full term babies; (56.3%) were pregnant for 7-12 times, and (53.9%) gave birth to 6-10 babies; (9.3%) were pregnant for 13-19 times and (7.7%) gave birth to 11-15 full term babies. The mean of pregnancy times for the study sample was found to be 7.73 for pregnancy times, and the mean of full term children was 6.19

These results are compatible to some extent with the results found by El-Khawajah (2003) where the fertility and the associated factors were studied for the Palestinians in Gaza, the West Bank, Jordan, and Lebanon, and it was found that the fertility rate for females in Gaza is the highest and increased from 1983 to 1994 from 7.42-7.71 in contrast with the other three regions in the study where the fertility rate found to be decreased. This study revealed that Gaza have much higher levels of fertility regardless of the educational level of mothers, in contrast with the other regions included in the study. A total fertility rate of 6 or above among women with secondary or college education in Gaza was found to be above the average of about 2.5 for the women's total fertility rate in neighbored regions (El Khawaja, 2003).

In relation to premature births, which refers to babies born before 37 weeks gestational age and less than 2.0 kg in weight, more than three-quarters of the women participated in this study (77.6%) had never had a premature baby, while (12.5%) had had one premature baby during their reproductive life, and (9.9%) had had more than one premature baby. We can see from previous studies conducted on this field that prematurity in Palestine and Gaza Strip could be associated to industrial, chemical agriculture and traffic increases in general, while in countries such as Gaza, Iraq, Afghanistan, and Lebanon, where the prematurity births increased as a result of metals exposure after wars and bombings, as it was found that preterm babies without malformations have a different metal load than normal weight babies and babies with birth defects; this was associated with high levels of Sn and of Ba and lower than normal load of Se. Normal weight children, which refers to normality at term and weighing 2.5 kg or above at birth were randomly chosen among 3,892 births and premature babies. It was found after studying the reproductive history of women delivered healthy children at Al Shifaa Hospital in Gaza in 2011 that premature births and birth defects prevalence increased in Gaza since 2005 after introduction of air-delivered weaponry (Manduca, et al., 2014). Another study conducted in Al-Shifaa hospital showed that the prevalence of premature births was 19.6/1,000. Children with birth defects were born with higher frequency in families where one or both parents were under "white phosphorus" attacks. This study strengthened the evidence that there is a causative role of acute exposure of parents to the weapons-associated contaminants, and/or of their chronic exposure from their persistence in the environment on the embryonic development of their children (Naim, et al., 2012).

A case-control study was conducted in Iran, in 2012, showed that Prematurity in the mother herself, history of previous premature babies, history of preterm labor in mothers and sisters of the expecting women, number of dead children, oligohydramnios, premature rupture of membranes; double and multiple pregnancies, overt diabetes mellitus, chronic hypertension, preeclampsia and eclampsia, Infertility and cervical incompetence showed statistically significant relation with preterm labor. However, mother's age, occupation and education, history of smoking, history of abortion and stillbirth, urinary tract infection (UTI), anemia, and uterine related pathologies and abnormalities in mother showed no statistically significant relation with preterm labor (Derakhshi, et al., 2014). Consanguineous marriages could be another risk factor for prematurity; a cross-sectional study was carried out to assess the association between consanguineous marriages and

adverse pregnancy outcome in the north of Jordan. The results showed that consanguineous marriages were significantly associated with low birth weight delivery (13.9% vs. 10.1%), preterm delivery (19.9% vs. 12.3%), and births with congenital anomalies (4.1% vs. 0.8%) compared with non-consanguineous marriages (Obeidat, et al., 2010).

Regarding the abortions experienced by the study participants. (40.5%) of the study sample had not experienced any abortions, (44.8%) had experienced one or two abortions during their reproductive life; and (14.7%) had experienced more than two abortions during their reproductive life. Different factors could be related to abortions occurrence. A study conducted on women attended in vitro fertilization center in Gaza complaining from infertility and abortion. Positive results of Anti-Toxoplasma, anti-rubella, anti-CMV(cytomegalovirus) and anti-Chlamydia IgM antibodies were found in 7.9%, 6%, 7% and 12.8% for T. gondii, CMV, Rubella and C. trachomatis antibodies, which concluded that these are causing factors for abortions (Al-Hindi, et al., 2010). Another case-control study conducted on recurrent miscarriages among in Gaza Strip. It was found that there is a correlation between spontaneous recurrent miscarriage (RM) and common polymorphisms in angiotensin-converting enzyme (ACE), plasminogen activator inhibitor 1 (PAI-1) and endothelium-derived nitric oxide synthase 3 (NOS3) genes. A new variant in the NOS3 gene which was named 4c allele was associated with RMs especially in the first trimester of pregnancy, therefore, (NOS3 4a/4a) testing is highly recommended in cases of recurrent miscarriages (Al Sallout & Sharif, 2010). Another cause for recurrent abortions was found to be chromosomal abnormality, and chromosomal analysis was recommended to be seriously considered by physicians working in Gaza strip as an etiological factor in couples suffering from recurrent abortions (Sharif, 2012). Another study focused on anti-thyroid autoantibodies and thyroid hormones as immunological and hormonal causative factors for RPL. There was found an association between the low thyroid hormone level and the increased risk of miscarriages. This could occur in case of the presence of thyroid autoantibodies among pregnant women which may create very low thyroid hormones level (Derawi & Alabed, 2009).

Table (4.6C): Distribution of participants by pregnancy and births related data (N=359)

Variable	Sub-categories	Frequency	Percentage %
Age at first pregnancy	from 14-21	251	69.9%
	from 22-29	90	25.1%
	from 30-37	18	5%
	Mean	20.3	
Age at last pregnancy	from 17-28	23	6.4%
	from 29-40	275	76.6%
	from 41-50	61	17%
	Mean	35.94	
Pregnancy complications	Yes	55	15.3%
	No	304	84.7%
Pregnancy Complications types	High blood pressure	17	30.9%
	Gestational Diabetes	9	16.4%
	Bleeding	14	25.5%
	uterine problem	6	10.9%
	Joint and backache	6	10.9%
	Low blood pressure	3	5.5%
	Total	55	

The majority (69.9%) of the interviewed women in this study reported that they were between 14-21 years old at their first pregnancy; (25.1%) were between 22 and 29 years old when they became pregnant for the same time; and as expected, only (5%) were between their 30-37 years at their first pregnancy. We can see from these results that the majority forming more than the half of the sample were before their 21 years, indicating the high prevalence of early marriage as it is expected in the Gaza Strip especially among the age group of this study. The previous results also showed that 73.3% have reached to the primary or secondary education and 9% were uneducated, which may be connected with the results regarding the first pregnancy and early marriage. Only 5% were between 30 and 37 years at their first pregnancy. This low percentage could be related to that only a

low percentage of the women in this study were between 30-37 years when they have got married or in some cases this could be related to any pregnancy problems.

In relation to the last pregnancy, 23 women (6.4%) were at their 17-28 years at their last pregnancy; 276 women which is more than half (76.6%) were between 29-40 years old at their last pregnancy; and 61 women (17%) were between 41-50 years old. Different reasons could be related to the age at last pregnancy, such reasons can be related to the inability of any more pregnancies, or in some cases to the undesirability of any pregnancies after having the ideal number of children in some families. Data on 15–49 years old ever married, non-pregnant women reporting on their last pregnancy were selected from a nationally representative cross sectional survey dataset. Older women were more likely not to desire the pregnancy at all, and younger women were more likely to have desired to wait. Also women who have ever experienced prenatal and postnatal complications were more likely to wait or not wanting pregnancy at all (Giacaman, et al., 2008).

About pregnancy complications, 304 (84.7%), forming more than three-quarters of the participants reported that they did not suffer from any pregnancy complications, while 55 (15.3%) participants suffered from some types of pregnancy complications. The pregnancy complications which have been mentioned were as follows; (4.3%) for hypertension; (2.3%) for diabetes mellitus; (14%) for bleeding; (6%) for uterine problems; (6%) for joint and backache problems; and (3%) for low blood pressure.

The highest gestational diabetes mellitus incidence was seen among Asian women at 11.5%, compared with Australian born women at 3.7%. The risk of developing GDM increases for Asian women and for older maternal age (Carolan, et al., 2012). To determine the risk factors of GDM in refugee populations in the Gaza Strip, a retrospective case-control study was performed in 2011 in the United Nations Relief and Works Agency (UNRWA) primary health care clinics. The most significant risk factors for gestational diabetes mellitus were: history of miscarriage more than once; overweight before pregnancy; history of stillbirth; history of caesarean birth; and positive family history of diabetes mellitus (AlKasseh, et al., 2013).

A cohort study in Sweden, found that maternal pre-pregnancy BMI is an important factor for the increase in gestational diabetes mellitus/type 2 diabetes. It was recommended to reduce the raised BMI before pregnancy by women (Fadl & Simmons, 2016).

Hypertensive disorders of pregnancy (HDP) fall into four categories: chronic (pre-existing) hypertension, gestational hypertension or pregnancy- induced hypertension (PIH), preeclampsia/eclampsia and preeclampsia superimposed on chronic hypertension. Preeclampsia, which is defined as having hypertension and elevated protein in one's urine while pregnant, showed the greatest disparities, from an incidence of 0.20% in Vietnam to 6.71% in Mongolia. This could represent different risks for the development of preeclampsia in some countries. Preeclampsia and eclampsia were associated with concomitant renal disease and chronic hypertension, a maternal age over 35 years, null parity, multiple pregnancies, poor socioeconomic conditions, and poor education; it was found that an age below 17 years is highly associated with eclampsia, and chronic hypertension was found to be the factor with the strongest association with both (Abalos, et al., 2014).

Women experienced high blood pressure during pregnancy were more likely to have high blood pressure after delivery compared to women who maintained normal blood pressure during their pregnancies. In 2009, (42%) of women with gestational hypertension and gestational diabetes who were followed up had gestational diabetes, (40%) had gestational hypertension, and (18%) had both. In 2010, (68%) of women with gestational diabetes still had diabetes after the pregnancy, (71%) with gestational hypertension still had hypertension, and (73%) with both still had both diabetes and hypertension. (56%) of women still had hypertension and diabetes, (29%) still had diabetes, six (43%) still had hypertension, and four (29%) still had both (Titi & El Sharif, 2013).

Normally, women lose blood during baby delivery; however some women suffer from secondary bleeding after delivery which may extend to several days. Bleeding happens after the placenta is expelled, because the uterine contractions are too weak and cannot provide enough compression to the blood vessels at the site of where the placenta was attached to the uterus, which is called atonic postpartum hemorrhage. Low blood pressure can result in this case. Certain medical conditions and treatments may increase the risk of developing postpartum hemorrhage: placental abruption, multiple gestation pregnancy, pregnancy-induced hypertension, several prior births, prolonged labor, and the use of forceps or a vacuum-assisted delivery. Other medical conditions that can lead to a higher risk include: cervical, vaginal, or uterine blood vessel tears, blood clotting disorders, and

uterine rupture. Uterine rupture occurs when the scar of previous cesarean delivery opens during future delivery.

Blood pressure changes slightly depend on a woman's energy levels, nervousness, lifestyle, and stress levels. A woman's blood pressure may be lower in the first 24 weeks of pregnancy. This is probably caused by the circulatory system, as blood vessels expand to let blood flow to the uterus. Some other factors contain: allergic reactions, infections, prolonged bed rest, dehydration, malnutrition, internal bleeding, anemia, and heart conditions.

Some women experienced very severe aches and pains after giving birth, while others experience none at all. The most common pain that new mothers experience is lower back pain, which is understandable considering the fact that pregnancy and labor press on the back. It can take a significant amount of time for the body to return to its pre-pregnancy strength and rebuilt overworked bones, muscles, ligaments, and tendons. Pain and stiffness of the hips, upper back, shoulders, neck, and headaches are often very common among new mothers. Postpartum joint pain could also increase due to the caring of the new baby and sleep deprivation caused by that.

A population- based, cohort study was conducted in the Australian Capital Territory (ACT). The results revealed that the percentages of postpartum health problems among women which showed resolution between 8 and 24 weeks after postpartum were exhaustion by (60–49%), backache by (53–45%), bowel problems (37–17%), lack of sleep/baby crying (30–15%), and excessive/prolonged bleeding by (20–2%) (Thompson, et al., 2002).

Other complications may include postpartum infections as endometritis which is an infection of the lining of the womb. It is much more common after caesarean section births. It usually causes a temperature and heavier vaginal bleeding. Postpartum infections usually begin in the uterus. Bacteria can infect the uterus and surrounding areas soon after delivery. After delivery, the uterus may become infected if the membranes containing the fetus (amniotic sac) are infected.

Table (4.7): Distribution of participants menopausal information and view towards menopause related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
How does the respondent rate her knowledge about menopause	Poor	52	13.0%
	Moderate	143	35.8%
	Good	168	42.0%
	very good	37	9.3%
Sources of information about menopause	Books and magazines	33	8.3 %
	TV and internet	141	35.3 %
	Family and friends	301	75.3 %
	Healthcare providers	41	10.3 %
How does the respondent view menopause	Positively	264	66.0%
	Negatively	134	33.5%
	Other	2	0.5%

The participants were asked about their general knowledge of menopause, and about their viewing of menopause and HRT. Most of the women evaluated their knowledge regarding menopause as being moderate at a percentage of (35.8%) and being good at (42%); the two second extremes of the choices were (13%) for poor knowledge and (9.3%) for very good knowledge.

Regarding sources of information about menopause; three quarters of the participants (75.3%) chose family and friends as being the main source of information for them; (35.3%) chose TV and internet as being the main source of information for them; only (10.3%) said that healthcare providers are the main source of information for them and (8.3%) reported that their main source of information regarding menopause is from books and magazines. However, (48.5%) of African-American women obtained information about menopause from printed materials. (Sharps, et al., 2003). And the meta-analysis conducted by Tao, et al. (2011) showed that (47%) obtained menopause and HT related information from health care providers, while (43%) obtained information from media including TV, internet, magazines, and newspapers (Tao, et al., 2011).

About viewing menopause, two thirds of the women viewed menopause positively (66%), meaning that menopause is the period of relief from reproductive role and the relief in their lives in general, however, 33.5% of the women viewed menopause in a negative way meaning that this phase means the loss of their reproductive role and the loss of their youth. 2 participants said that they view menopause differently neither in a positive nor in a negative way.

A survey of 833 women aged 45-60 in the USA, (94%) women were going through menopause said they had symptoms that made them aware of menopause. (36%), (27%), and (6%) of the women reported getting most of their information about menopause from a physician, magazines or journals, and books, female friends, and television and newspapers respectively. Most of the women considered menopause as a short-term event that do not have long term outcomes, however, some women were concerned about osteoporosis, cancer, or heart disease (Utian & Schiff, 2018).

4.2.6 Replacement therapy (RT)

Table (4.8): Distribution of participants by RT indicators related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Did the respondent listened about Hormone RT	Yes	63	15.8 %
	No	337	84.3 %
Had the respondent ever used Hormone RT	Yes	8	2 %
	No	392	98 %
Does the respondent currently use hormone RT	Yes	2	0.5 %
	No	398	99.5 %
Has the respondent used any other therapy instead of hormones	Yes	1	0.3 %
	No	399	99.7 %
How does the respondent view hormone replacement therapy	Positively	173	43.3 %
	Negatively	227	56.8 %

Regarding hormone replacement therapy, 63 respondents (15.8%) said that they have heard about HRT, while the rest of the sample (337) which forms the majority by 84.3% reported that they have never heard about the HRT. By the same way only 8 (2%) respondents reported that they have ever used HRT, while 392 (98%) respondents said that they have never used HRT. Only two of the respondents reported that they are using HRT currently and the whole majority (99.5%) said that they do not use any type of HRT currently.

It is obvious that the previous results could be related to different factors such as the low educational level, the low economic status, and the negative attitude towards hormone replacement therapy. It is well evidenced that the Use of HRT increased steadily during the latter half of the 20th century in the western world and this was timed with the increase of breast cancer incidence after the Women's Health Initiative trial in 2002. The WHI trial evidenced that HRT may support prevention of osteoporotic fractures and colorectal cancer, however, it could increase harms for cardiovascular disease, breast cancer, and cholecystitis (Nelson, et al., 2002).

It was found that the prevalence of HRT use in age group 50–59 years decreased from a peak of 36% in 1999 to 27% in 2002 and further to 9% in 2007 in Sweden (Lambe, et al., 2010).

Moreover, In a study in the Netherlands, it was found that the prescribing of HRT fell dramatically where women aged 40–74 years to whom at least one HRT prescription was dispensed in 2001 or 2004 were included in this study; in 2001, the percentage of women using HRT was 5.64% while this percentage decreased to 2.39% in 2004 (Faber & van den Berg, 2006). By contrast, in a survey conducted in the UAE. It was found that (48%) were using a variety of HRT to manage their symptoms (Ibrahim & Hussein, 2016). Another study, in Al-Ain city, UAE showed that (73%) of women had poor knowledge about HRT, and women suffered from menopausal symptoms had a positive attitude towards HRT use (Hamid, et al., 2014). Tao, et al. (2011) found that (49%) of women have not received information about HRT in a meta-analysis. And among African-American women, (58%) use hormone replacement therapy (HRT) or may use HRT (Sharps, et al., 2003). However, in China, Malaysia, Taiwan, Thailand and Hong Kong, 19% had received HRT (Huang, et al., 2010) and in Isra University hospital in Hyderabad, only (1.15%) were using HRT (Nusrat, et al., 2008).

And about the women's view about HRT; (56.8%) viewed HRT negatively, while (43.3%) viewed it in a positive way. In the USA (15%) of women reported that they had refused or decided not to take HRT due to their side effects (35%) and/or concerns over cancer (26%), (7%) said they did not want to take medication every day, (5%) did not think it was necessary, and (5%) said it did not help (Utian & Schiff, 2018).

Another descriptive cross sectional study based on sample of convenience was conducted in Karachi to determine the knowledge and attitude towards menopause and Hormone Replacement Therapy (HRT) among postmenopausal women. It was found that (1.96%) of the respondents were aware of HRT. (47%) had positive and (39.2%) had neutral attitude towards menopause (Malik, 2008). In the meta-synthesis conducted by Tao, et al. (2011), (47%) of participants said that HT was effective for menopausal symptoms, and (33%) reported that the benefits of HT outweigh the risks , while (14%) considered the risks of HT overweight its benefits (Tao, et al., 2011).

In Shanghai, China, a cross sectional study on 3,619 women aged 40-65 years was included in the study. HRT awareness among women was 3.5% and was related to menopausal, working, and marital status; (2.1%) women had used or were using HRT (Jin, et al., 2015).

In the present study, only one participant reported that she manages her menopausal symptoms by other methods rather than HRT. This could be explained by the narrow spread of the other CAM for menopause treatment in our society. However, this counteracts with a study conducted in Qatar, where the sample contained women from 18 different nationalities including Palestine, Lebanon, Syria, Jordan, and Egypt; the results of this study showed that 38.2% of midlife women in Qatar used CAM in the previous year. The Qatari women who reported that they use CAM formed 45.6% versus 34.5% of other Arab non-Qatari women. This study found that CAM use was more prevalent in women of higher educational status. This study, however, did not use a standard definition for CAM. CAM therapy may include acupuncture for nausea and chronic musculoskeletal pain; massage therapy for anxiety, and mind–body techniques such as meditation for pain and anxiety (Gerber, et al., 2014).

4.2.7 Life style

4.2.7.1 Physical exercise

Table (4.9): Distribution of participants by physical exercise related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Does the respondent practice an exercise	No	202	50.5 %
	Yes	198	49.5 %
How often does the respondent practice an exercise	Daily	78	39.4 %
	Weekly	62	31.3 %
	Monthly	16	8.1 %
	Rarely	42	21.2 %
Which kind of physical exercises does the respondent practice	Walking	168	84.8 %
	various exercises	26	13.1 %
	Running	4	2.0 %
For how long does the respondent exercise	less than 30 min	14	7.1 %
	from 30-60 min	166	83.8 %
	more than 60 min	18	9.1 %
	Mean	47.7	
How many meals does the respondent consume daily	less than 3 meals	204	51.0 %
	three meals	188	47.0 %
	more than 3 meals	8	2.0 %

In relation to lifestyle factors; first, we are going to discuss the physical activity aspect. The results of our study showed that almost half of the sample (49.5%) practices an exercise; however, this result could be misleading because the respondents were asked

about the frequency of practicing an exercise and one of the choices was that they do an exercise rarely. Table (4.9) shows that (39.4%) of those who reported that they practice an exercise, do this daily and they formed (19.5%) of the whole sample; and (31.3%) of the women practicing an exercise reported that they do that weekly forming (15.5%) of the whole sample; (8.1%) reported exercising monthly and this percent forms (4%) of the whole sample; and finally (21.2%) were doing exercise rarely, which forms the second most common answer, and this formed (10.5%) of the whole sample. The previous results indicate poor physical activity for the group of 40-60 years old women.

It could be guessed that the most common type of exercising for our sample is walking, and this was confirmed by this study as table (4.9) shows; (84.8%) of the exercise practicing group considered walking as their common type of exercising; (13.1%) reported that they experience different types of exercise; and (2%) said that they practice running as a physical exercise option. A Cross-Sectional Study was done on patients with Type 2 Diabetes in Gaza showed that (46.51%) of the sample practice walking as a physical exercise (El-Sakka, et al., 2013) and this result resembles ours, where (42%) of our sample practice walking. On the other hand, a study among menopausal women in Southern Jordan showed that (8%) reported regular physical exercise, which is less than that found by our study (Shakhatreh & Mas, 2006).

According to the required frequency and duration of exercise, the current study revealed that the women who practice their exercise for 30-60 minutes formed the majority by (83.8%), and this formed (41.5%) of the whole sample; (9.1%) women practicing for more than 60 minutes were (9.1%) and this formed (4.5%) of the whole sample; the lowest percent (7.1%) was for those experiencing exercise for less than 30 minutes, forming (3.5%) of the 400 women.

A study conducted on random sample of Palestinians and Israelis aged 25-74 years living in east and west Jerusalem where their physical activity in a typical week was assessed. It was found that Palestinian women reported the lowest level of walking compared with Israeli women, Palestinian, and Israeli men. 26% of Palestinian women were classified as insufficiently active versus 13% of Palestinian men. 39% of Palestinian women met the physical activity recommendations by occupation/domestic activity, compared to (63%) of Palestinian men and 37% of the Israelis (Merom, et al., 2012).

According to a survey supervised by WHO/EMRO the prevalence of physical inactivity was between 60%-80% in Egypt, Iran, Kuwait, Lebanon, Oman, and Saudi Arabia; and surprisingly it was more than 80% in Sudan, however, it was less than 40% in Syria, and between 50%-60% in Jordan and Iraq. In the GCC countries it was found that women are more physically inactive than men and in general. Phe prevalence of physically active women for at least 150 min per week was 26 -28% while in men it was 39-42%. The EMR populations are inactive in comparison with the Western countries, where 47 % and 54% of women are active in the USA and Australia; 50% and 60% of men are active in the USA and Australia respectively. In the UAE, it was found that 58% of men and 75% of women were sedentary or inactive. Among adult Bahraini women 40-69 years old, it was found that the majority (94%) walk less than one kilometer on an average weekday compared with (67%) of men and (94%) of women; and in Saudi Arabia, inactivity prevalence increases with an increasing age category, and decreases with increasing education levels (Musaiger, 2011).

4.2.7.2 Diet

Table (4.10A): Distribution of participants by diet related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Does the respondent try to consume a special type of diet	Yes	331	82.8 %
	No	69	17.3 %
Does the respondent try to consume a low-fat diet as a special type of diet	Yes	173	43.3 %
	No	227	56.8 %
Does the respondent try to consume a low-carbohydrate diet as a special type of diet	Yes	149	37.3 %
	No	251	62.7 %

Table (4.10B): Distribution of participants by diet related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Does the respondent try to consume a protein-rich diet as a special type of diet	Yes	133	33.3 %
	No	267	66.8 %
Does the respondent try to consume a vegetable-rich diet as a special type of diet	Yes	200	50 %
	No	200	50 %
Does the respondent consume dairy products	Yes	326	81.5 %
	No	74	18.5 %
Servings of fruits daily	Zero	42	10.5 %
	One	212	53.0 %
	More than one	146	36.5 %
	Mean	1.35	
Servings of vegetables daily	Zero	13	3.3 %
	One	215	53.8 %
	More than one	172	43.0 %
	Mean	1.49	
Servings of fishes	Weekly	61	27.9 %
	Monthly	145	66.6 %
	Every 2 months	5	2.3%
	Every 3 months	7	3.2%
	total	218	
Does the respondent use any food supplement	Yes	140	35 %
	No	260	65 %

In relation to the second aspect of the lifestyle factors, which is the dietary patterns; half of the study sample (51%) reported that they take less than 3 meals daily; (47%) said that they consume three meals daily; and only eight respondents (2%) take more than three meals a day. These results differ with the recommendation which indicates taking many small meals per day, however, it has been a long time ago, the people eat for three times a day

divided in two light meals and a middle heavy meal, along with different snacks during the day according to the cultural norms of their environment, and more dependently on their economic conditions.

A cross-sectional survey in Ramallah, Nablus, and Hebron governorates on students aged 13–15 years showed that (26.1%) of the students had three main meals daily; the difference of this result with the result of this study could be related to the different age groups as the students go early to their schools without breakfast while old women who stay at home may have more meals including breakfast. (26.2%) of boys had breakfast and (51%) of the girls had breakfast one to two times per week (Mikki, et al., 2010).

The majority of the sample (82.8%) said that they try to eat a special type of food such as high protein content diet, low fats content, low sugar or carbohydrate content, or more vegetables diet. In most cases, women try to eat a special type of diet when they mean to reduce their weight. Other causes are related to the economic conditions; in this study, it is obvious that the majority of the women suffer from bad economic conditions. This could highly affect the quality of their diet making them focus on the cheap types of food.

By taking each type of diet solely; women who said that they try to concentrate on low-fat diet were 173 (43.3%); and those who try to eat low-carbohydrate diet were 149 at a percent of 37.3%. However, 133 (33.3%) of the women said that they try to consume more protein-rich diet; and half of the women (50%) try to concentrate on vegetables in their diet. It has been found that the dietary patterns have shifted to the high consumption of fats and sugar rather than simple carbohydrates due to the rapid development in the EMR countries especially in the GCC countries during the last three to four decades. The daily per capita energy supply showed high increases ranging from 16% in Jordan to 60% in Saudi Arabia, during the same period. In general, the contribution of carbohydrates to the Daily Energy Supply (DES) decreased as the per capita income of the country increased. In contrast, the contribution of fat to DES increased with income.

In the EMR countries, the carbohydrates percentage contribution to DES was found to be (55-75), (60-70), (59-60) in low, moderate, and high income countries respectively. The fats contribution to DES was (15-20), (20-25), and (29-30) in low, intermediate, and high income countries respectively. The proteins contribution to DES was (10-12), (10-11), and

(10-12) in low, intermediate, and high income countries respectively. And the contribution of sugar to DES is relatively high in all EMR countries ranging from 9% to 15%.

The recommended daily consumption of fruits was found to be 5 servings daily for women. However, the results of the current study showed a very low consumption of fruits and vegetables by the women aged 40-60 years in Gaza Strip. During the interviews made to fill the questionnaires, we were told by many women that they take fruits only when available, indicating the bad economic status for them. As the table (4.10B) shows, 42 women forming (10.5%) of the sample said that they mostly do not have any serving of fruit and this mostly was for economic reasons; 212 respondents (53%) around half of the women take one serving of fruit daily; 146 women (36.5%) reported that they take more than one serving of fruits daily. We did not divide the groups by the limit of 5 servings because almost a very small number of women or even none of the women said that they take 5 servings of fruits. In relation to vegetables consumption, 13 (3.3%) respondents said that they do not take any serving of vegetables. This was related to their bad economic situation although some vegetables are cheap in Gaza Strip and a few said that they do not like to eat vegetables; 215 respondents (53.8%) which forms almost half of the sample said that they consume only one serving of vegetables daily. This result was compatible with the result of fruits consumption; 172 women (43%) around the second half of the sample said that they consume more than one serving of vegetables.

There is good evidence that there is an inverse association between fruit/vegetable consumption and weight gain. It was found that normal weight adults tend to consume more fruits and vegetables than those who are overweight or obese (Musaiger, 2011).

It was found in Lebanon, which is neighbored to Palestine; and its kitchen food resembles that of Palestine to a large extent, where the Mediterranean diet is common. Mediterranean diet, which is a diet rich in fruits, vegetables, legumes, and cereals, with olive oil as the only source of fat and low consumption of red meat, is well known of its beneficial effects on human health. However, a food shift toward increased intake of food high in saturated fat, sugar, and refined foods and is low in fiber has occurred in Palestine, Lebanon, and the other EMR countries (Hwalla & El Khoury, 2008). A meta-analysis showed that greater adherence to a Mediterranean diet is significantly associated with a reduced risk of overall mortality, cardiovascular mortality, cancer incidence, and mortality, and incidence of Parkinson's disease and Alzheimer's disease (Sofi, et al., 2008).

The survey conducted in Ramallah, Nablus, and Hebron governorates on students aged 13–15 years by Mikki, et al. (2010) showed that High standard of living (STL) index and residence in Ramallah were positively associated with intake of animal foods, Western-style foods, dairy products, fruits and vegetables, sweets and salty snacks.

The results of this study could be also related to the 40-60 year-old people in Palestine. This resembles or can be paralleled to the global trend of the dietary shift to the high-calorie diets. The majority of students, boys (72.8%), and girls (73.8%) consumed vegetables daily. Daily fruit consumption was also equally common among boys (58.9%) and girls (55.2%); this result resembles our result where the whole family intake fruits mostly at the same time (Mikki, et al., 2010).

It was found that fruits and vegetables contain high amounts of flavonoids whose metabolites are protective for atherosclerosis and cardiovascular diseases due to their antioxidant activity (Terao, et al., 2008). In addition to other beneficial ingredients for the health of brain and the neurological system of the human body (Martin, et al., 2000).

In regard to dairy products consumption by this study group, we found that the majority of the women at a percent of (81.5%) consume dairy products, which is expected. As it has been known long time ago that dairy products contain calcium and calcium is needed for the health of bones especially before reaching to the stage of menopause for the skeletal and bones health.

It was found that adequate calcium intake, in the presence of adequate vitamin D status, has been shown to reduce bone loss in peri- and postmenopausal women and reduce fractures in postmenopausal women older than 60 years. Moreover, dairy products contain many essential nutrients that are difficult to obtain in low-dairy or dairy-free diets.

The risk for osteoporosis and bone fractures significantly decreased as calcium intake increased along with vitamin D due to their increasing effect on BMD. The degree of risk was 0.96 in those who consumed < 1 portion of milk or dairy products daily, and 0.71 in those who consumed > 1 portion per day, compared with those who had zero intakes (Hong, et al., 2013). Calcium containing products may have either a neutral or inverse effect on levels of circulating inflammatory biomarkers, which means a possible anti-

inflammatory effect (Rozenberg, et al., 2016). Calcium may have other beneficial roles on hypertension, colorectal cancer, obesity, and nephrolithiasis (Hong, et al., 2013).

Intake of up to three servings of dairy products per day (for example; 1 glass of milk, 1 portion of cheese, 1 yogurt) is considered as beneficial, while highly intake of dairy products is not recommended as in the case of the different nutrients. It was found that a diet rich in dairy and calcium may enhance sensations of satisfaction and reduced dietary fat intake during restricted calorie-intake regimen (Jones, et al., 2013). Calcium requirements increase at menopause. It is targeted at 1,200 mg/day for postmenopausal women (Hong, et al., 2013).

In regard to fish consumption, around half of the sample (54.7%) only eat fishes and from those who eat fishes, (15.3%), (36.3%), (1.3%), and (1.8%) consume at least one fish meal, weekly, monthly, every 2 months, and every 3 months respectively.

We cannot assume from these results that people with better economic situation consume more fishes as there are different types of fish of which some are cheap especially the frozen types, and some are expensive. Moreover, fish consumption depends on many aspects, some people do not like eating fishes, and the availability of the various fish kinds depends on the fish hunting sometimes.

Fishes consumption as what is known is beneficial to the human health. In a review evidence Synthesis. It was found that the modest consumption of fish is related to 1-2 servings per week, this can reduce the risk of coronary death by 36% and total mortality by 17% and may favorably affect other clinical outcomes. However, consuming more than 5 servings per week is not recommended (Mozaffarian & Rimm, 2006).

In relation to the use of any food supplement; it was found that (35%) were using food supplements, while (65%) were not using any type of food supplement. However, in a study conducted on geriatrics at Al-Watani hospital discharge in the West Bank on a mean age of 73+/- 7 years; 12.1% reported taking two or more food supplements (Zyoud, et al., 2014).

4.2.7.3 Smoking

Table (4.11): Distribution of participants by smoking and beverages drinking habits related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Does the respondent smoke	Yes	5	1.25%
	No	395	98.75 %
How many cigarettes does the respondent smoke daily	One cigarette	2	0.5 %
	Three cigarettes	3	0.8 %
Water pipe smoking	Yes	4	1 %
	No	396	99 %
Does the respondent consume any herbal drinks	Yes	167	41.8 %
	No	233	58.3 %
How many times does the respondent consume herbal drinks daily	Daily	51	12.8 %
	Weekly	64	16.0 %
	Monthly	46	11.5 %
	Rarely	6	1.5 %
How many times does the respondent consume caffeine drinks daily	No	41	10.3 %
	1-2 drinks	216	54 %
	More than 2	143	35.8 %
	Mean	1.96	
	Median	2	
	Mode	3	
	SD	1.08	

The third aspect of the lifestyle paradigm, which is smoking, was also asked about in the current study. And the results in table (4.11) show that only 5 women of the 400 women reported that they are current smokers which is expected in our society; three of the smokers said that they smoke around 3 cigarettes daily while the remnant two smokers said that they smoke only one cigarette a day. The mean age of starting smoking is 38 years while the mode is 35 years. Culturally, smoking among women is not desirable and is associated with negative attitude. Sometimes, women when asked about their smoking status, they report that they do not smoke even if this is not the truth.

In relation to the narghile or the water pipe smoking; only 4 (1%) participants said that they experience this type of smoking. These results are satisfying if the respondents were not lying; when they have been asked about smoking as the cultural norms in our Gazan society may limit or put obstacles on their freedom of their smoking choice. In addition, water pipe smoking could be more common among youth especially boys rather than old women. A study aimed to explore the rate of and attitudes towards smoking among An-Najah National University students. It was found that overall 34.7% of the study sample were cigarette or water pipe smokers, and this rate was higher among males than females [versus 16.5%] %52.7 (Musmar, 2012). Another study on students from 7 universities in Gaza conducted in 2013. About 54.7% reported ever smoking cigarettes; and 31.1% were current cigarette smokers. Of the current cigarette smokers, males comprised 87.9% and females 12.1%. About 21% of the sample smoked cigarettes regularly, of which 86% also smoked narghile. (Abu Shomar, et al., 2014).

In a review of 38 studies, only 4 were national surveys. The prevalence of current waterpipe smoking among adults in different regions was as the following: Pakistan (6%), Arabic Gulf region (4%-12%), Australia (11% in Arab speaking adults), Syria (9%-12%), and Lebanon (15%). Group water pipe smoking was high in Lebanon (5%), and Egypt (11%-15%). In Lebanon, 5%-6% pregnant women reported smoking water pipe during pregnancy (Akl, et al., 2011).

About less than half of the sample women (41.8%) reported that they consume herbal drinks while (58.3%) do not consume herbal drinks. (12.8%) of those consuming herbal drinks do that daily; (16%) of them consume a herbal drink weekly; (11.5%) take herbal drinks monthly; and (1.5%) may drink a type of herbs rarely. It is more common in our society that people tend to consume any herbal drink only for treating some health conditions when they suffer from any, especially from abdominal pain. However, some people like to have a drink of a kind of herbs regularly either for the desirable health effects or because they taste herbs as good beverages.

A study in the West Bank showed that 138 medicinal plant species are used in the West Bank for the treatment of several livestock diseases. Another cross sectional study was conducted among university students to determine the extent of herbal self-therapy among university students, 33.9% of the respondents reported using herbal remedies in self-therapy. Female students at medical colleges were using herbs more than others. Herbal

remedies were used primarily for the treatment of headache, flu, menstrual pain, and sore throat (Sawalha, et al., 2008).

Also, another study showed that herbal medicines are broadly used in the treatment of wide range of diseases in Palestine and other countries. 57 plant species belonging to 30 families were found to be used by herbalists and traditional healers for treatment of various urinary tract diseases including kidney stones, UTIs, and renal failure and for treating symptoms of benign prostate hyperplasia in Palestine (Jaradat, et al., 2017), which confirms that the major use of herbal drinks is for treating some health conditions.

A Cross-sectional study on postmenopausal women from China, Malaysia, Taiwan, Thailand, and Hong Kong showed that 37% of the participants used herbal treatments for the alleviation of menopausal symptoms (Huang, et al., 2010). These results are somewhat compatible with ours. However, in Isra University hospital in Hyderabad, only (0.926%) of women was taking herbs (Nusrat, et al., 2008).

41 participants (10.3%) said that they do not drink caffeine containing beverages; while 216 participants forming around half of the participants (54%) said that they drink daily from one to two cups containing caffeine drinks; and 143 participants (35.8%) reported that they drink caffeinated beverages for more than two times. Generally, caffeine drinking is related to the culture of the region where tea drinking was mostly drunk as the main caffeinated beverage for all age groups. Nowadays it is still drunk mainly with breakfast or dinner meals. However, coffee drinking is mostly used as the main caffeinated drink followed by the American coffee (Nescafe). This study showed that around half of the sample mostly drinks one cup of tea and one cup of coffee daily.

The mostly reported caffeine drinks among the women participated in the study was for tea and coffee as one time for each daily. It is known that caffeine stimulates central nervous system on a short term. A study aimed to discover the association between coffee and/or tea consumption at midlife and dementia/ Alzheimer's disease. Coffee drinkers at midlife had lower risk of dementia and Alzheimer's disease (AD) later in life compared with those drinking no or only little coffee. The lowest risk (65% decreased) was found in people who drank 3–5 cups per day. Tea drinking was relatively uncommon and was not associated with dementia/AD (Eskelinen, et al., 2009).

Another study examined the relationship between tea drinking and BMD, women aged 65–76 years, of whom (90.3%) were tea drinkers, and (9.7%) were non–tea drinkers. This result resembles our result regarding caffeine drinking percent (89.7%). Tea drinking was associated with higher BMD in this population of older women. This association was independent of age, BMI, and potential confounding factors, including addition of milk to tea, coffee drinking, smoking status, and use of hormone replacement therapy, and to the number of cups of tea drunk per day. Women using hormone replacement therapy had higher BMD measurements at all sites. And as a result drinking tea is inversely associated with bone fractures. However, coffee drinking is associated with increased bone fracture risk but this was not statistically significant (Hegarty, et al., 2000).

The association between tea, coffee and ovarian cancer in a prospective cohort study along with meta-analysis was analyzed. It was found that coffee consumption was not associated with the risk of epithelial ovarian cancer in postmenopausal women. Tea drinking was inversely associated with ovarian cancer risk. After 13.3 years of follow-up, it was showed that tea was inversely associated with serious tumors. However, coffee consumption was related to increased ovarian cancer risk (Steevens, et al., 2007).

4.2.7.4 Stress

Table (4.12A): Distribution of participants by health and stress related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
How does the respondent evaluate her health	Poor	55	13.8%
	Fair	170	42.5%
	Good	163	40.8%
	very good	12	3.0%
Life stressors	Money deficit	195	48.8 %
	Children	259	64.8 %
	House-work as	184	46 %
	Job burden as a	30	7.5 %

More than 80% of the participants reported that they believe that their health is either fair (42.5%) or good (40.8%). Nearly the same results found among African American women, where two-thirds rated their health as good, and half believed that their health is better than

other women (Sharps, et al., 2003). Only 12 participants evaluated their health as being very good (3%) while (13.8%) said that their health is poor. About the stressors among the midlife women participated in this study, that they face in their lives; about half of the women reported that they are stressed by the lack of money (48.8%); by their children (64.8%), by their housework (46%); and by their jobs, in case of being employed, and those were only (7.5%) of the sample.

Table (4.12B): Distribution of participants by health and stress related data (N=400)

Variable	Sub-categories	Frequency	Percentage %
Stressors effect	no effect	3	0.8 %
	to a small extent	61	15.3 %
	to a moderate extent	193	48.3 %
	to a large extent	143	35.8 %
Stress handling	Poorly	31	7.8 %
	Moderately	135	33.8 %
	Well	205	51.2 %
	very well	29	7.2 %

The stressors in peoples' lives may affect them to different degrees according the magnitude of the stress put by these stressors. The following percentages are found to be for the different effects of stressors on women in this study; (0.8%), (15.3%), (48.3%), and (35.8%) for the results of no effect, to a small extent, to a moderate extent, and to a large extent respectively. It is obvious that people in Gaza, especially women suffer from different stressors due to the bad economic and political situations, and the previous results regarding stress conditions were expected. And in regard to stress handling, the women were asked about how do they deal with their stressors and to which extent they could handle with the stressors; the answers were as the following, (7.8%), (33.8%), (51.2%), and (7.2%) for poor handling, moderate handling, well handling, and very well handling respectively. In general, people differ in their handling with stress; some people can handle with important stressors successfully, while others cannot handle even light stressors. However, the results were mainly in the two middle degrees as expected.

4.2.8 Prevalence of diseases and symptoms

Table (4.13A): Distribution of participants by symptoms, diseases related data (N=400)

Variable	Frequency	Percent %
Migraine	89	22.3 %
Anxiety	83	20.8 %
Stress	70	17.5 %
Fatigue	86	21.5 %
Sleeping problems	58	14.5 %
Dizziness	58	14.5 %
Depression	56	14 %
Mood swings	42	10.5 %
Suicidal thoughts	2	0.5 %
Teeth and gums problems	81	20.3 %
Hair loss or growth problems	28	7 %
Skin problems	12	3 %
Frequent falling	31	7.8 %
Losing height	10	2.5 %
Weight loss or gain problems	40	10 %
Seizures	4	1 %
Eye problems	61	15.3 %
Sight problems	125	31.3 %
Diabetes	90	22.5 %

In relation to the medical history of the women participated in this study. We considered previous diseases and symptoms along with present symptoms and diseases for the women in this study.

Migraine prevalence was found to be 8.6% (males), 17.5% (females) in the US population and peaking in the late teens and 20s and around 50 years of age, while in our study the migraine prevalence was (22.3%). Beyond the age of 10 years, females had a higher

prevalence of migraine than males. After the age of 42, the prevalence ratio was approximately 2-fold higher in women (Victor, et al., 2010).

The epidemiology of headache in Arab countries was systematically reviewed in Qatar, Saudi Arabia, and Oman. The migraine prevalence was 2.6–5% in Saudi Arabia and 7.9% in Qatar, while the 1-year migraine prevalence was 10.1% in Oman (Benamer, et al., 2010). The results of our study showed the highest prevalence (22.3%) of migraine among the previous countries.

The following percentages were obtained; (20.8 %), (17.5 %), (21.5 %), (14.5 %), (14.5 %), (14 %), (10.5 %), and (0.5 %) for the following anxiety, stress, fatigue, sleeping problems, dizziness, depression, mood swings, and suicidal thoughts respectively. A study conducted to investigate the prevalence of post- traumatic stress disorder (PTSD) among patients attending primary health care clinics in the Gaza Strip and the association between socio- demographic variables and PTSD. It was found that the overall prevalence of PTSD symptoms was 29 %, and significantly higher among females than in males. Prevalence of PTSD among those exposed to traumatic events was 36 %. More educated patients were more often exposed to traumatic events, but the prevalence of PTSD among them was lower than among less educated patients (Afana, et al., 2002).

In a random sample of women and men 16–60 years in the Gaza Strip; the subjects were asked about lifetime trauma and peritraumatic dissociation during their most severe traumatic experience. The women reported a lower level of lifetime trauma than the men, but exposure to trauma was associated with PTSD among both genders. Exposure to lifetime trauma was further associated with anxiety, mood, and somatoform disorders only among women but not among men.

Women across the globe have been found to be more susceptible to depression than men. The rate of depression may not be necessarily be related to the region. This was explained by the cyclical fluctuation of female hormones that intensifies the physical stress-response, which may amplify vulnerability to depression, the different social factors the women face in their lives increase their risk of depression (Eloul, et al., 2009). And it was found by Azizi, et al. (2018) that midlife women in the Middle East region are generally at higher risk for depression than other women in different regions due to the presence of different factors (Azizi, et al., 2018).

Furthermore, the political and economic violence that our country exposed to may increase the percentages of stress, anxiety, and depression to a large extent. The prevalence and predictors of post-traumatic stress disorder (PTSD) and major depression (MD) among Palestinians subjected to chronic political violence were studied. It was found that the Prevalence of PTSD/MD for women living in the West Bank, Gaza, and East Jerusalem was (23.8%)/ (29.0%), (23.9%)/ (28.9%), and (19.7%)/ (27.6%). Among women, PTSD was positively associated with greater interpersonal and intrapersonal resource loss, and MD was positively associated with death of a loved one, and two or more socio-political stressors (Canetti, et al., 2010). These results differ with that found in our study regarding depression, (28.9%) vs. (14%); this could be attributed to the age group in our study, where sometimes older women are more depressed than younger ones. This expectation was confirmed by a study in Qatar; Qatari women were at higher risk for depression (53.1%) and anxiety disorder (56.7%). Higher frequency was found in the age group 18–34 years. And sleep difficulty was the most common symptom in subjects with depressive disorder (59.4%) (Bener, et al., 2012). And (42%) of women from China, Malaysia, Taiwan, Thailand and Hong Kong complained from sleeplessness (Huang, et al., 2010). These results are somewhat compatible with ours.

Normal sleepers without any sleep problems were only (32.4%) in a random sample of Palestinian people from Gaza City, while in our study sleep problems were reported by (14.5%). The prevalence of excessive daytime sleepiness in the Palestinian population is higher compared to reported western populations (El-Kharoubi, 2004).

In general, compared with Western countries, Asian countries still have a higher average suicide rate, lower male-to-female suicide gender ratio, and higher elderly-to-general-population suicide ratios according to Chen, et al. (2011). However, only 2 women of the participants said that they had suicidal thoughts. The low percentage of the present study is owed to the old age of women and to their religious thoughts.

A review study to estimate the number of people with open angle (OAG) and angle closure glaucoma (ACG) in 2010 and 2020 was conducted. The results showed that there will be 79.6 million people with OAG and ACG in 2020, compared to 60.5 million in 2010. Women will comprise 55% of OAG, 70% of ACG, and 59% of all glaucoma in 2010. It was found that Asians will represent 47% of those with glaucoma and 87% of those with ACG (Quigle & Broman, 2006).

Table (4.13B): Distribution of participants by symptoms, diseases related data (N=400)

Variable	Frequency	Percent %
Hypertension	123	30.8 %
Elevated serum cholesterol	48	12 %
Heart attack	16	4 %
Varicose	42	10.5 %
Anemia	25	6.3 %
Indigestion	23	5.8 %
Frequent nausea and vomiting	8	2 %
Colitis	28	7 %
Diarrhea	12	3 %
Constipation	61	15.3 %
Bowel movement	9	2.3 %
Hepatitis	5	1.3 %
Liver	3	0.8 %
Urine or feces incontinence	7	1.8 %
Fibroids	11	2.8 %
Gallbladder	19	4.8 %

A recent study contained data from nineteen studies evidenced that higher rates of hypertension were found among Arab women at midlife, in the fourth decade of their life in most countries, compared to the sixth decade of life among women in the world. However, a decrease in sex ratios (M/F) at midlife was observed in all countries except Palestine (Akl, et al., 2017).

Anemia is the most prevalent nutritional deficiency disorder in the world. It affects all age groups but the most vulnerable are preschool-age children, pregnant women, and non-pregnant women of childbearing age. It affects 24.8% of the population. In our study it was found among (6.3%). The highest prevalence of anemia exists in the developing world due to different causes (Kaur, 2014). In a 9 year follow up prospective study. Among middle-aged, community-based persons, the combination of CKD and anemia was associated with

a substantial increase in stroke risk, independently of other known risk factors for stroke. However, the risk of CKD on stroke incidence was not significant without anemia (Abramson, et al., 2003).

A review of Sixteen studies were evaluated to explore the association between tea consumption and iron status in groups with high prevalence of iron deficiency (infants, children and premenopausal women) or low prevalence of iron deficiency (men and the elderly). It was found that tea consumption was inversely associated with serum ferritin and/or hemoglobin in high prevalence of iron deficiency group. However, in groups with low prevalence of iron deficiency, tea consumption was not inversely associated with serum ferritin and/or hemoglobin (Temme & Van Hoydonck, 2002). Previous studies were conducted about this relationship in Gaza, where the habit of drinking tea with or after food is common among our population. Reported anemia was found to be the highest in the Gaza Strip and Central West Bank (36.8% and 31.6%, respectively) among 15-54 years old females, compared to the North and South West Bank (17.7% and 13.8% respectively). And the largest proportion of women who do not know their anemia status is evident in the South WB (38.6% of women). Higher levels of anemia reporting were present among urban women and women with only primary level education (Bates, et al., 2017).

Metabolic syndrome is a cluster of the most dangerous heart attack risk factors, which is associated with high mortality. A study was conducted to estimate the prevalence of metabolic syndrome among patients with type 2 diabetes in Gaza Strip. A cross sectional study of 1200 patients with type 2 diabetes mellitus aged 20 to 64 years old (59.8% female, 40.2% male) were included in this study to estimate the prevalence of metabolic syndrome among patients with type/2 diabetes in the Gaza Strip. The prevalence of metabolic syndrome was 62.3% according to the IDF criteria and 59.8% according to the NCEP-ATP III criteria. It is highly prevalent among patients with type/2 diabetes (El Bilbeisi, et al., 2018). Heart attack was reported by 4% of the women in our study. A systematic review of 62 relevant studies has been carried out. The prevalence of CHD was reported to be 5.5% in Saudi Arabia. The prevalence of hypertension and diabetes ranged from 6% to 53.2%, respectively in females (Aljefree & Ahmed, 2015). This differs with the result obtained by our study, where the diabetes prevalence was (22.5%). It was supposed that the prevalence of metabolic syndrome increases in postmenopausal women due to ovarian insufficiency or

indirectly due to metabolic consequences of central fat redistribution with estrogen deficiency. Metabolic syndrome was found in (64%) of women (Jeyasheela, et al. 2018).

The prevalence of CVD was 33.0% among women. Family history of CVD, blood clots in veins and lack of exercise were significant risk factors (Khan, et al., 2013). Regarding menopause, two reviewed articles revealed that although healthy premenopausal women are protected from cardiovascular disease, its prevalence raises rapidly after menopause. It was showed that that early menopause is positively associated with coronary heart disease, independently of traditional cardiovascular disease risk factors. Globally, there has been a substantial rise in the proportion of women undergoing coronary angiography over the last few years (Emara, et al., 2018).

Indigestion, frequent nausea and vomiting, colitis, diarrhea, constipation, and bowel movement were reported by (5.8%), (2%), (7%), (3%), (15.3%), (2.3%). A cross sectional study of 50 years and above to determine the prevalence of IBS and its subtypes in the West Bank, and to assess variation by locality of residence. The overall prevalence of IBS was 30%. IBS was more common in refugee camps (34%) and in villages (34%) compared with urban centers (27%) and irritable bowel syndrome was more common in women than in men. The prevalence of IBS among middle-aged and elderly residents of Palestine is high. Residents in refugee camps and rural areas have a higher incidence of IBS than those in urban areas (Qumseya, et al., 2014). (29.8%) reported intestinal parasites among their household members; (13.7%) admitted cases of diarrhea. Intestinal parasites diarrhea were strongly associated with crowding, source of drinking water and the cleaning of water tanks, and were significantly higher among families with unclean homes (Mourad, 2004). Female patients demonstrated a higher prevalence of intestinal parasitic infections (42.7%) than males (39.0%). However, this difference was not significant. It was demonstrated that intestinal protozoan infections are still a public health problem in the Gaza strip, with Entamoeba and Giardia infections being most common (Mezeid, et al., 2014). The results of this study are not consistent with ours. This could be related to the misunderstanding of the questions by the respondents and to the overlapping between the chronic and acute cases of diarrhea and constipation. A study conducted on 13-77 years old population in Gaza Strip. The rate of H. pylori infection was (48.3%). The results showed that H. pylori acquisition occurs early in childhood and persist throughout life. In addition, H. pylori

infection appears to be multifactorial. Tea proved to have a protective effect against H. pylori infection (Abu-Mugesieb, 2007).

Regarding hepatitis, it was reported by only (1.3%), although Asia and Africa have previously been classified as areas of high endemicity for hepatitis B virus (HBV). In the Middle East, Bahrain, Iran, Israel, and Kuwait are areas of low endemicity, Cyprus, Iraq and the United Arab Emirates have intermediate endemicity, and Egypt, Jordan, Oman, Palestine, Yemen, and Saudi Arabia have high endemicity (André, 2000). The Epidemiology of hepatitis B virus (HBV) infection is not precisely known in Gaza. The prevalence of HBsAg was found to be 3.5% in the general population. The decline started in 1994 and continued afterwards, this could have happened after the introduction of universal vaccination against HBV and screening blood donors for HBV (Yassin, et al., 2002).

Urine or feces incontinence were reported by only (1.8%). The overall prevalence of urinary incontinence, in a study on 20 years and older participants, was found to be 29%. The prevalence of urinary incontinence according to its type was 50% stress urinary incontinence, 28% urgency urinary incontinence, and 22% mixed urinary incontinence. Older age, obesity, large baby birth weight, high parity, caesarean delivery, vaginal delivery, and diabetes were significant risk factors (Altaweel & Alharbi, 2012). Another study conducted to assess the prevalence of and risk factors for urinary incontinence (UI) in young and middle- aged women (mean age 40 years). It was reported by (27.5%), indicating a large difference with our study. The prevalence of overall, stress, urge and mixed UI were reported by (12.4%), (1.6%), and (13.5%) respectively. The prevalence of UI increased significantly with age 40 years, with pregnancy, previous vaginal delivery, postpartum incontinence, and hysterectomy, but there was no relationship between stress UI and obesity or previous Caesarean delivery (Peyrat, et al., 2002). 43% of middle aged nurses reported incontinence. Women who were aged 50 to 54 years had 1.81 times the odds of severe incontinence compared with women who were <40 years old (Danforth, et al., 2006).

In France, Germany, Spain, and the UK, women bigger than 18 years old were asked about the type of urinary incontinence they had experienced and their treatment behavior. 35% reported involuntary loss of urine in the preceding 30 days; stress urinary incontinence was the most prevalent type. The lowest prevalence was in Spain (23%), while the prevalence

was 44%, 41%, and 42% for France, Germany, and the UK, respectively (Hunskaar, et al., 2004).

Table (4.13C): Distribution of participants by symptoms, diseases related data (N=400)

Variable	Frequency	Percent%
Stroke	1	0.3 %
Blood clots	4	1 %
Easy bruising	2	0.5 %
Breast problems	23	5.8 %
Chest pain	41	10.3 %
Asthma	22	5.5 %
Uterine problems	25	6.3 %
Infertility	7	1.8 %
Cancer	14	3.5 %
Broken bones	25	6.3 %
Osteoporosis	69	17.3 %
Hypo-thyroidism	20	5 %
Hyper-thyroidism	12	3 %
Arthritis	83	20.8 %
Muscular and joint pain	177	44.3 %
Low backache	150	37.5 %

The stroke prevalence in our study was reported by 0.3%. Recent data indicate that stroke prevalence in women at midlife is double that of similarly aged men in the United States. Among 35-45 years old people and MI prevalence decreased among men and increased among women (Towfighi, et al., 2009). A review of published reports of stroke in Arab countries Studies were available for Saudi Arabia, Qatar , Libya , Kuwait , Jordan, United Arab Emirates, Bahrain, Tunisia, Iraq, and Sudan. The annual stroke incidence ranged from 27.5 to 63 per 100,000 population and prevalence was between 42 and 68 per 100,000 populations. Hypertension, diabetes mellitus, hyperlipidemia, and cardiac disease were the commonest risk factors (Benamer & Grosset, 2009).

Regarding asthma and chest pain, they were reported by (5.5%) and (10.3%) respectively. However, among general Italian population aged 20–44, 45–64, and 65–84. A physician diagnosis of asthma or chronic obstructive pulmonary disease (emphysema/chronic bronchitis/COPD) was reported by 13% and 21% of subjects aged <65 and 65–84 years respectively. Aging was associated with a marked decrease in the prevalence of diagnosed asthma and with a marked increase in the prevalence of diagnosed chronic obstructive pulmonary disease (De Marco, et al., 2013).

In relation to cancer, breast cancer constitutes 13–35% of all female cancers. Advanced disease is common in Egypt, Tunisia, Saudi Arabia, Syria, and Palestine. Breast cancer is the most common cancer among women in Arab countries with a young age of around 50 years at presentation (El Saghir, et al., 2007). In this study cancer was reported by (3.5%) regardless of different cancer types.

In relation to endometrial cancer, research has indicated elevated risk with increased number of abortions, ovarian cycles and live births, and decreased risk with increased parity as compared to the nulliparous case (El-Khwsky et al., 2006). In another study, endometrial thickness >5mm, diabetes, hypertension and obesity were not found to be among the risk factors, in contrast to age and occurrence of post-menopausal bleeding (Al-Kadri et al., 2004). Thyroid cancer occupies the number two position in females in Saudi Arabia and is prevalent in other countries of the Gulf as well as Jordan (Salim, et al., 2009).

Overall rates of ovarian cancer in Iran and the USA were 3.9 and 16.2 per 100,000, respectively. Age-standardized ovarian cancer rate in Iran was much lower in comparison with high incidence areas in the world. In Iran oral contraceptive use and reduction in fat intake may be the factors leaded to the decrease or the constancy in the rate of ovarian cancer (Arab, et al., 2010).

Generally, the incidence of fragility fractures begins to increase in middle age. Prospective risk factors for low-energy fractures in men and women were investigated, among participants of mean age 50 years in women. The risk factors most strongly associated with low-energy fractures were diabetes and previous fracture. High body mass index (BMI) significantly increased the risk of proximal humerus and ankle fractures while, by contrast,

lowering the risk of forearm fractures (Holmberg, et al., 2006). In this study the percentage of broken bones was 6.3%.

Prevalence of osteoporosis based on nationwide surveys ranged from 6.6% to 19.3% (average, 13.0%). The prevalence varied across studies, regions, and bones sites, but the urban to rural difference was small. In Hong Kong, the prevalence among women ≥50 years ranged from 34.1–37% in the spine; was 7% in the same aged men. In Taiwan, among those aged ≥50 years, average prevalence of osteoporosis was 11.4% in women and 1.6% in men (Wang, et al., 2009). However, it was reported by (17.3%) in this study. The prevalence of arthritis, muscular and joint pain, and low backache were as follows; (20.8%), (44.3%), and (37.5%). Women at their mid- age suffer more from muscular and joints pain due to the complications that starts to appear mostly after their menopausal status; moreover, these percentages are related to the different life styles for women in case if they work or not, experienced many pregnancies, and whether they have many efforts concerned by them, or suffer from obesity. It was found that osteoporosis affected the lumbar spine, femoral neck, and total hip by 24%, 14%, and 29.7% of Palestinian women, respectively. There was evidenced that BMD is negatively associated with age and years since menopause (Abd-Alhameed, et al., 2010).

About 13% of women have symptomatic knee osteoarthritis in 60 years and older Japanese population. In a prospective study, the prevalence of moderate-to-severe knee osteoarthritis changed from 3.7% at the baseline assessment to 26.7% in the follow-up visit eleven years later. In Greece, symptomatic knee OA was observed in 6%. Age of 50 years or more, obesity, and low level of education were associated with knee OA. Knee symptoms were present in 43% of patients (Heidari, 2011). The prevalence of visual and musculoskeletal disorders (VMSD) among the Palestinian office workers was studied. About 62.5% of the sampled workers suffered from at least one symptom of VMSD, whereas 17% indicated that they suffered from at least one permanent symptom of VMSD. Furthermore, most reported complaints were from the eyes, neck, low back, and upper back (Arabia, 2017).

In Tripoli, data showed that the most common disease associated with the frequency of menopausal symptoms was osteoarthritis, followed by hypertension, heart diseases, and diabetes mellitus (Taher, et al., 2012).

In relation to thyroid problems, the prevalence of different types of thyroid disease varied between the reported studies in Arab world ranging from 6.18 to 47.34%. Gender, dietary factors, iodine deficiency, family history, diabetes and x-ray radiation were reported as risk factors associated with different types of thyroid diseases (Al Shahrani, et al., 2016). However, in this study, hypothyroidism was reported by (5%), and hyperthyroidism was reported by (3%). A case control study showed that Baseline measurements showed that after six months of low calorie diet and exercise there was a significant decrease in BMI, TC, TG, and LDL-C in cases as compared to their levels before the study. TSH was significantly increased, while, T3 and T4 were significantly decreased in the cases. Low calorie diet and moderate intensity therapeutic exercise significantly improved the deteriorated health indicators in the cases (El Bilbeisi, et al., 2018).

4.2.9 Biochemistry

Table (4.14): Distribution of participants by biochemistry related data (N=400)

Variable	Sub-categories		Frequency	Percent
Blood sugar test	No		68	17 %
	Yes	Normal	222	55.5 %
		Abnormal	90	22.5 %
		DK	20	5.0 %
Hemoglobin	No		104	26 %
	Yes	Normal	210	52.5 %
		Abnormal	34	8.5 %
		DK	52	13 %
Cholesterol	No		144	36 %
	Yes	Normal	135	33.8 %
		Abnormal	72	18.0 %
		DK	49	12.3 %
Blood pressure	No		62	15.7%
	Yes	Normal	208	52 %
		Abnormal	104	26 %
		DK	25	6.3 %

Regarding the biochemistry results, we asked women if they have tested their blood sugar, hypertension, hemoglobin level, and cholesterol during the last year, and if they tested

them, if their results were normal, or abnormal according to the medical standards, if they had been told about these standards, or they do not know their results.

In relation to the blood sugar test, (17%) of the participants did not test their blood sugar during the last year; (55.5%) said that their blood sugar test was normal and from the women who tested their blood sugar, they formed the two thirds (66.9%); (22.5%) of the women said that their blood sugar test was abnormal while they formed (27.1%) of those who tested their blood sugar; (6%) of the women tested their blood sugar reported that they do not know their result.

Regarding diabetes, a study conducted on 30-65 years old people in a rural Palestinian population. The prevalence of diabetes was 9.6% and 10.0% in females and males respectively (Husseini, 2000). The prevalence rates among adults of the Arabic speaking countries ranges between 4%–21%, with the lowest being in Somalia and the highest in Kuwait (Badran, & Laher, 2012). It was showed that in 20 Arab countries, (73.4%) of diabetics are less than 60 years. The Middle East and North Africa region has the highest comparative prevalence (11%). The prevalence of diabetes among adults aged 20-79 years old was found to be the highest in these countries: Kuwait (21.1%), Lebanon (20.2%), Qatar (20.2%), Saudi Arabia (20.0), Bahrain (19.9%), and UAE (19.2%) (Boutayeb, et al., 2012). The prevalence of diabetes and associated factors in a cross-sectional survey of an urban Palestinian population of 492 men and women aged 30-65 years was found in 12.0% of the survey population, including 9.4% previously diagnosed, and impaired glucose tolerance in 5.9%. (Abdul Rahim, et al., 2001). The results of these studies differ with our finding about diabetes prevalence to a large extent.

It was found that there is no association between shorter-term weight gain or weight loss on first reported diagnosis of diabetes. However, women's risk of developing type 2 diabetes in mid-life is related to their initial BMI (when aged 45-50 years) than to subsequent short-term weight changes according to a prospective data in Australia (Mishra, et al., 2007).

Regarding hemoglobin level; 26% of the participants did not test their hemoglobin during the last year. Half of the women said that their hemoglobin level was normal in their last test of hemoglobin, who formed (70.9%) of those who tested their hemoglobin during the last year. (11.5%) of the women who tested their hemoglobin level, said that their

hemoglobin was abnormal; and (17.6%) said that they do not know their result, and this percentage formed (13%) of the whole sample.

36% of the participants reported that they did not test their cholesterol during the last year; (52.7%) of the women tested their cholesterol found that their result was normal for the last test which forms (33.8%) of the whole sample; (28.1%) of the women who tested their cholesterol said that their test of cholesterol was abnormal forming 18% of the whole sample; and (12.1%) of the women said that they do not know the result of their cholesterol level.

Regarding blood pressure, (15.7%) of the women said that they did not test their blood pressure during the last year; half of the women (52%) said that their blood pressure was normal when they have measured it for the last time, which are (61.7%) of the women who said that they have measured their blood pressure level; one quarter (26%) of the participants said that their result was abnormal forming around one third (30.9%) of the women who tested their blood pressure; and (6.3%) said that they do not know whether their blood pressure was normal or abnormal. Unfortunately, there is no accurately documented data about the prevalence of hypertension and diabetes in Gaza Strip due to the overlap of files and information among the different sectors. A cross-sectional survey from 2077 participants from the general population aged 25 years and over showed that the prevalence of hypertension was 27.6%, with a higher percentage among men (29.2%) vs. (26.4%) for women. Hypertension increased with age in both men and women (Khdour, et al., 2013). Another study showed that the prevalence of hypertension among Arab women was 29.5% compared with 28% for people from the USA, and 27.6% for Sub-Saharan African women (Tailakh, et al., 2014). These results resemble our result regarding hypertension. However, there is a misreporting of hypertension and diabetes prevalence in Gaza Strip due to the overlapping of registry systems.

4.2.10 Knowledge

Table (4.15): Distribution of participants by knowledge about menopause related data (N=400)

Variable	Frequency	Right answer (%)
Does hereditary background affects the time of menopause occurrence	217	54.3 %
does menopause occur in women due to an increase in sexual hormones	248	62%
Does menopause cause vaginal dryness	127	31.8%
Do most of the women experience menstruation disorder before menopause occurrence	331	82.8%
Are menopause symptoms preventable and curable	132	33.0%
Does smoking affect the time of menopause occurrence	259	64.8%
Does not smoking does not affect the severity of menopausal symptoms	214	53.5%
Are physical exercises beneficial practices after menopause	369	92.3%
Does the level of stress and depression feelings increase in menopaused women	316	79%
During one year after stop of menstruation, is pregnancy prevention necessary	61	15.3%
Do most of the women experience hot flushes in the menopause period	351	87.8%
does the frequency and severity of hot flushes increase in menopausal women by time	140	35%
does menopause in women decrease genital infections	243	60.8%
Does menopause in women increase weight and obesity	294	73.5%
does menopause decrease cardiovascular diseases in women	277	69.3%
Does menopause increase osteomalacia in women	360	90%
Does menopause cause dryness and skin shrivel in women	283	70.8%
does menopause cause different types of cancer in women	141	35.3%
Does menopause cause dysuria	247	61.8%
Does menopause cause urinary frequency	174	43.5%
Mean score	59.8%	
SD	11.254	

We can see from table (4.15), in regard to the women's knowledge about menopausal issues that the knowledge among women ranges from poor to very good knowledge in relation to the different issues. Some issues were answered rightly by a high percentage of women. For example, (82.8%) of the women confirmed the statement which indicates that most of the women experience menstruation disorder before menopause occurrence, (64.8%) said that smoking affect the time of menopause occurrence (62%) knew that menopause occurs in women due to the decrease in estrogen and progesterone hormones (92.3%) said that physical exercises considered as beneficial practices after menopause, (79%) expected that the level of stress and depression feelings increase among women after menopause, (87.8%) reported that most of the women experience hot flushes in the menopause period, (73.5%) said that the women's weight increases after menopause, more than two-thirds (69.3%) expected that the risk of cardiovascular diseases increases among women after menopause, most of the women (90%) said that the risk of osteomalacia and osteoporosis increases after menopause, (70.8%) reported that menopause cause dryness and skin shrivel in women, (60.8%) said that genital infections among women may not be affected after menopause, and (61.8%) reported that urinary problems such as dysuria increase after menopause. Other issues were answered correctly by lower percentages of women. For example, (54.3%) reported that familial history can affect the time of menopause occurrence, (53.5%) knew that smoking affect the severity of menopausal symptoms, (43.5%) expected that women suffer from urinary frequency and urinary incontinence after menopause, (35.3%) expected that menopause may not be related to different types of cancer in women, (35%) said that the frequency and severity of hot flushes decrease by time after menopause, (33%) expected that menopause symptoms are preventable and curable. Only, (31.8%) knew that vaginal dryness increases after menopause, and only (15.3%) knew that pregnancy prevention still necessary during one year after stop of menstruation.

The overall score of knowledge about menopause, among women in Gaza Strip, was (59.8%) +/- 11.25%. (1.75%) had poor knowledge less than 40%, (73.75%) had moderate knowledge from 40-65%, and (24.5%) had good knowledge from 70-90%. This indicates that the knowledge is moderate among menopausal women in the Gaza Strip. In comparison with previous results in different countries; in a cross-sectional study among women of age 40 and above in Al-Ain city, (51%) of the sample were postmenopausal women. It was found that (67%) of women had poor knowledge about menopause (Hamid,

et al., 2014) compared with (78.79%) of postmenopausal women in Hyderabad, had weak knowledge about menopause, while (15.8%) of women knew about effects and symptom of menopause (Nusrat, et al., 2008). In Saudi Arabia, (47.9%) of premenopausal, perimenopausal, and postmenopausal women denied the physical and psychological effects of menopause (Al-Olayet, et al., 2010).

4.2.11 Attitude

Table (4.16A): Distribution of participants by attitude towards menopause related data (N=400)

Variable	Answer	Frequency	Percent %
Does menopause considered as the period of women's loanliness	completely agree	17	4.3
	Agree	76	19.0
	moderately agree	67	16.8
	do not agree	174	43.5
	completely do not agree	66	16.5
	Mean		69.8%
Is menopause considered as the period of eradicating the problems of menstruation and preventing pregnancy	completely agree	69	17.3
	Agree	135	33.8
	moderately agree	83	20.8
	do not agree	91	22.8
	completely do not agree	22	5.5
	Mean		67%
Every woman can care for herself through training and self-confidence after menopause	completely agree	30	7.5
	Agree	206	51.5
	moderately agree	110	27.5
	do not agree	48	12
	completely do not agree	6	1.5
	Mean		70.4%
Does menopause considered as the beginning of a woman's disablement	completely agree	12	3.0
	Agree	69	17.3
	moderately agree	97	24.3
	do not agree	166	41.5
	completely do not agree	56	14.0
	Mean		69.2%
Is woman’s life in the menopause period more delightful than before menopause	completely agree	8	2
	Agree	48	12
	moderately agree	85	21.3
	do not agree	167	41.8
	completely do not agree	92	23
	Mean		45.6%

Table (4.16B): Distribution of participants by attitude towards menopause related data (N=400)

Variable	Answer	Frequency	Percent %
does menopause decrease the grace of a woman's appearance	completely agree	15	3.8
	Agree	89	22.3
	moderately agree	101	25.3
	do not agree	145	36.3
	completely do not agree	50	12.5
	Mean		66.4%
Does menopause considered as the beginning of another life and second maturity of women	completely agree	22	5.5
	Agree	157	39.3
	moderately agree	115	28.7
	do not agree	81	20.3
	completely do not agree	25	6.3
	Mean		63.6%
does menopause perceived as loss of youth	completely agree	29	7.2
	Agree	136	34.0
	moderately agree	101	25.3
	do not agree	102	25.5
	completely do not agree	32	8.0
	Mean		58.6%
do menopausal psychological symptoms affect the QoL	completely agree	49	12.3
	Agree	197	49.3
	moderately agree	83	20.8
	do not agree	54	13.5
	completely do not agree	17	4.3
	Mean		49.6%
does menopause mean the beginning of a life with new diseases	completely agree	92	23.0
	Agree	201	50.2
	moderately agree	76	19.0
	do not agree	23	5.8
	completely do not agree	8	2.0
	Mean		42.8%
Total mean score			60.26 %
Standard Deviation			9.58%

Regarding attitude toward menopause, the overall score of attitude toward menopause was (60.3%) +/- 9.58%, which means that the women participated in the study had a

moderately positive attitude toward this phenomenon. When the women were asked about different aspects of their attitude, it was found that, the women agreed to a large extent with the statement which claims that every woman can care for herself through training and self-confidence after menopause, where the mean attitude for women towards this statement was (70.4%), (69.8%) was the mean attitude of women when asked about their look at menopause in consideration to the concept of loneliness which is associated with menopause period, showing a positive look toward this concern; the attitude toward the issue concerned with the fact that woman can care for herself through training and self-confidence after menopause, the women also did not agree to a large extent with the statement which claimed that menopause is considered as the beginning of a woman's disablement where the mean score was found to be (69.2%), nearly the same attitude score was obtained when the women were asked if menopause considered as the period of eradicating the problems of menstruation and preventing pregnancy. Women had less positive attitude with the following statements; (67%) was the mean score of attitude toward the agreement with that menopause considered as the period of eradicating the problems of menstruation and preventing pregnancy, (66.4%) was the mean score for the disagreement with that menopause decrease the grace of a woman's appearance, (63.6%) was the mean score for the agreement with that menopause considered as the beginning of another life and second maturity of women. On the other hand, some statements were not agreed with to a large extent. For example, (58.6%) was the mean attitude score for the agreement with that menopausal stage is not considered as the loss of energy associated with the youth stage, also the women agreed to moderate extent that the menopausal psychological symptoms affect the QoL for women after menopause as the mean score of attitude was (49.6%), the women did not agree to a large degree with that the women's life after menopause is more delightful than that before menopause, where the mean score of attitude was (45.6%), and the women's attitude (42.8%) about the possible diseases that may develop after menopause was not positive. The overall mean score of attitude (60.3%) evolved from the variability from 42% to 70% for the different dimensions of attitude towards menopause; (71%) of the women had a neutral attitude, from 34% to 64%, and (29%) had a positive attitude more than 64%. On the other hand (47%) of women in Erbil had a positive attitude towards menopause (Mustafa & Sabir 2012).

In Al-Ain city, (60%) of women had positive attitude towards menopause (Hamid et al., 2014). And in Egypt, the attitude towards menopause was generally positive and about

one-third of the women regarded menopause as a normal physiological change (Sallam, et al., 2006).

In Hyderabad, (78.79%) of women considered menopause as a natural process, while (21.2 %) of them considered it as a disease; this result resembles ours where (23%) of the women in Gaza were completely agree with that menopause is the stage of new diseases. (83.42%) of women were happy by menopause and did not want to have menses again, while (16.57%) of women wanted to have menses again, compared to (17.3%) who completely agreed and (33.8%) who agreed with that menopausal stage is better than the reproductive stage in Gaza Strip (Nusrat, et al., 2008). However, (36%) of women in Pakistan were happy and (33%) were unhappy with the cessation of their menstrual periods. Moreover, menopause was considered a normal event by (72%) of women while, 28% believed it to be a disease condition (Khokhar, 2013).

The results of a meta-analysis showed that 25% of Iranian women had positive attitudes compared to (29%) in Gaza, 58% had neutral attitudes compared to (71%) of Gazan women, and 17% had negative attitudes towards menopause (Bahri, et al., 2016).

4.2.12 Practice

Table (4.17A): Distribution of participants by practice towards menopause related data (N=400)

Variable	Frequency	Positive practice (%)	Mean
Did the respondent consult a physician at the onset of menopause	99	24.8 %	25%
Has the respondent shown compliance with treatment advices, if you have had any	104	26%	26%
Has the respondent undergone any physical examination /investigation at the onset of menopause	75	18.8%	19%
Has the respondent adopted favorable practices such as beginning a new project in post-menopausal years	160	40%	40%

Table (4.17B): Distribution of participants by practice towards menopause related data (N=400)

Variable	Frequency	Positive practice (%)	Mean
Did the respondent discuss menopausal symptoms with others	244	61%	61%
Does the respondent practice physical exercises after menopause	169	42.3%	42%
Has the respondent social relationships with family and friends been affected positively	263	65.8%	66%
Has the respondent adopted more healthy diet regimen	218	54.5%	55%
Has the respondent some bad habits such as smoking or consuming unhealthy diet	227	56.8%	57%
Has the respondent tried to maintain a beautiful appearance after menopause	314	78.5%	79%
Total mean score		46.82%	
Standard Deviation		24.427%	

About the healthy practices toward menopause, our study results showed that the mean percentage of applying healthy practices in relation to menopausal issues was (46.82%) +/- (24.42%) indicating poor to moderate application of healthy issues. The mean of applying the different practices ranged from 19% to 79%. Physical examination /investigation at the onset of menopause was practiced by a mean score of (19%), while the mean score of practice of (79%) was obtained for trying to maintain a beautiful appearance by the women after menopause. Moderate mean scores of practice were obtained for the positive social relationships with family and friends after menopause (66%). In Qatar, Postmenopausal women were found to be more socially active than before and were more able to participate in religious activities than before (Murphy, et al., 2013).

(61%) was the mean score for the respondents discussion about menopausal symptoms with others, (57%), and (55%) were the mean practice scores for the respondents' quitting of some bad habits such as smoking or consuming unhealthy diet, and for the respondents' adoption of more healthy diet regimens respectively. Low mean scores of practice were obtained for physical exercise practicing after menopause (42%), and for the respondent' adoption of favorable practices such as beginning a new project in post-menopausal years (40%). Very low mean practice scores were obtained for the respondent' compliance with treatment advices, if they have had any advice (26%), and for the respondent' consultation of a physician at the onset of their menopause (25%).

The mean score of knowledge about menopause in the current study was found to be (59.8%) +/- (11.254%). This indicates that the knowledge is moderate among menopausal women in the Gaza Strip. The attitude score about menopause was found to be (60.3%) +/- (9.58%) indicating a negative to moderately positive attitude among the women in Gaza. And the practice score was found to be (47%) +/- (24.42%), and this also indicates poor healthy practice regarding menopause.

4.2.13 Quality of Life (QoL)

Table (4.18): Distribution of participants by quality of life related data (N=400)

Variable	Not at all Bothered		Not Bothered		Moderately Bothered		Bothered		Extremely bothered		Mean	
	F	%	F	%	F	%	F	%	F	%	Likert	%
To which extent does the respondent bothered from hot flushes and sweating	50	12.5	80	20	79	19.8	69	17.3	122	30.5	3.33	66.6%
To which extent the respondent is bothered from any heart problems	154	38.5	103	25.8	84	21	40	10	19	4.8	2.17	43.4%
To which extent is the respondent bothered from any sleep problems	81	20.3	94	23.5	135	33.8	60	15	30	7.5	2.66	53.2%
To which extent is the respondent bothered from depressive mood	80	20	106	26.5	117	29.3	61	15.3	36	9	2.67	53.4%
To which extent is the respondent bothered from irritability	51	12.8	58	14.5	107	26.8	136	34	48	12	3.18	63.6%
To which extent is the respondent bothered from anxiety feelings	52	13	84	21	123	30.8	103	25.8	38	9.5	2.98	59.6%
To which extent the respondent is bothered from any urinary problems	167	41.8	112	28	80	20	25	6.3	16	4	2.03	40.6%
To which extent is the respondent bothered from any decrease in her physical or mental abilities	40	10	76	19	126	31.5	105	26.3	53	13.3	3.14	62.8%
To which extent is the respondent bothered from dryness or burning in the vagina	183	45.8	92	23	86	21.5	24	6	15	3.8	1.99	39.8%
To which extent the respondent is bothered from any muscular and joint discomfort	47	11.8	55	13.8	99	24.8	94	23.5	105	26.3	3.39	67.8%
Mean score											2.752	44.9%
Standard Deviation											0.639	12.78%

The quality of life score for the women in Gaza was found to be (44.9%) +/- (12.78%), indicating a moderate percentage of different symptoms suffering and moderate quality of life. The quality of life part in this study presented the different symptoms the women were suffering from after menopause. It was found that (20%) of women in Gaza suffered from severe symptoms, (76.5%) suffered from moderate symptoms, and (3.5%) suffered from mild symptoms.

We can see in table (4.22) that the highest mean score of bothering symptoms was for muscular and joint discomfort (67.8%), followed by hot flushes and night sweating (66.6%), (63.6%) for irritability, (62.8%) for physical and mental exhaustion, (59.6%) for anxiety feelings, (53.6%) for depressive mood, (53.2%) for sleep problems, (43.4%) for heart problems, (40.6%), and (39.8%) for bladder and urinary problems, and for vaginal dryness and burning respectively.

The symptoms of menopause among women in Gaza would be compared with different symptoms among women in other regions. In Saudi Arabia (68.51%) suffered from hot flushes and excessive sweating, (37.7%) suffered from vaginal dryness (Al-Olayet, et al., 2010); these results resembles ours to a large extent, where the women in Gaza suffered from vaginal dryness (39.8%) less than hot flushes (66.6%). In Al-Ain city, only (53%) of women had symptoms (Hamid, et al., 2014). In Hyderabad, (36.84%) of women were bothered by menopausal symptoms; backache was reported by (75.66%), body aches reported by (66.74%). By the same way, women in Gaza were bothered by muscular and joint pain by (67.8%). Hot flushes and night Sweats were reported by (59.4%) and (45.19%) respectively, while women in Gaza were bothered by hot flushes and night sweating by (66.6%). And in the US, the prevalence of vasomotor symptoms among postmenopausal women in the US was (65%) (Williams, et al., 2008). And insomnia reported by (63.44%) of women, while women in Gaza suffered less from sleep problems by (53.2%) (Nusrat, et al., 2008).

Jordanian women suffered by (15.7%), (66.9%) and (17.4%) of severe, moderate, and mild menopausal symptoms, respectively (Gharaibeh, et al., 2010). However, (20%) of women in Gaza suffered from severe symptoms, (76.5%), and (3.5%) suffered from severe, moderate, and mild menopausal symptoms respectively. The most bothering symptoms were hot flushes and night sweats among Jordanian women, while these were the least suffered by Gazan women. In Southern Jordan, the most frequently reported symptoms

among menopausal women were joint aches/stiffness (89%), bone pains (74%); these results coincide with the results found by our study to some extent (67.8%); hot flushes (62%) compared to (66.6%) in Gaza; irritability and mood changes (62%) compared to (63.6%) suffered from irritability, and (53.4%) suffered from depressive mood in Gaza; urinary incontinence (30%) compared to (40.6%) of women suffered from urinary problems in Gaza Strip, urinary tract infection (18%); and reproductive tract infection (14%) compared to (39.8%) suffered from vaginal burning in Gaza (Shakhatreh & Mas, 2006). Resembled results to those in Southern Jordan, were found among Omani women, where muscle and joint pain was the most common symptom (73.3%), followed by mental and physical exhaustion (47.2%) and anxiety (46.6%) (El Shafie, et al., 2011). In Erbil, the most common symptom was tiredness by (83.2%) compared to (62.8%) suffered from physical and mental exhaustion in Gaza Strip (Mustafa & Sabir, 2012)

In Tripoli city, the most frequent symptoms were hot flushes and aching in muscles and joints (74.4%), which is also consistent with the results found in the present study; 87.2% reported physical symptoms, 83.7% reported psychosocial symptoms, 76.6% reported vasomotor symptoms, and 48.8% reported sexual symptoms (Taher, et al., 2012).

Among Taiwanese women, the most common acute menopausal symptoms in postmenopausal women was insomnia (42%) compared to (53.2%) suffered from sleep problems in Gaza, hot flushes (38%) compared to (66.6%) in Gaza, heart palpitation (34%) compared to (43.4%) suffered from heart problems, depression (20%) compared to (53.4%) suffered from depressive mood in Gaza, and loss of bladder control (16%) compared to (40.6%) suffered from urinary problems in Gaza (Pan, et al., 2002).

In a rural area in Minia governorate, Egypt, the most common menopausal symptoms reported by the participants were, joint and muscle pain (82.1%), physical and mental exhaustion (69.6%), compared to (62.8%) in Gaza and hot flushes and sweating (49.2%) compared to (66.6%) in Gaza (Kamal, & Seedhom, 2017). However, in Alexandria, Egypt, the most frequently recalled symptoms were tiredness (96.0%), hot flushes (90.7%) (Loutfy, et al., 2006).

4.3 Inferential statistics

This part includes the discussion of the results of the different relationships including women's knowledge, attitude, practice, quality of life scores, and the menopausal age with the study variables. Also, the results of the relationships between knowledge and attitude, knowledge and practice by correlation tests would be discussed. The inferential statistical tests would be applied, such as T-test and one way ANOVA in order to find out the statistically significant affecting factors on the menopause related study dependent variables. P-value of 0.05 and less would be considered as statistically significant. Moreover, comparisons with results of other previous studies would be presented.

4.3.1 Menopausal age

Table (4.19): The relationship between the menopausal age and socio-demographic related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Marital status	Single	25	47.760	F	1.186	0.315
	Married	295	47.23			
	Divorced	20	45.90			
	Widowed	60	46.71			
Employment status	Un-employed	343	47.06	F	3.665	0.026*
	Employed	48	46.89			
	Retired	9	50.55			
Educational level	Un-educated	36	47.69	F	.427	0.653
	Primary-secondary	293	47.07			
	Bachelor's and high studies	71	47.02			
Citizenship	Non-refugee	239	47.146	t	.134	0.893
	Refugee	161	47.093			

The only significant relationship with the menopausal age, in relation to the women's personal information was the women's employment status for women; it was found by one way ANOVA test that the menopausal age was not affected by the marital status, the refugee status, and the educational status; however, the menopausal age was found to be affected by the educational level in Erbil (Mustafa & Sabir, 2012), and it was affected by

the marital status in Lebanon, where single women had an earlier menopause (Reynolds & Obermeyer, 2001). The same was found by Abdul-Halim, et al. (2018). The effect of the employment status on the menopausal age may be related to the recall bias by the retired women, as the Scheffe post hoc test showed that the menopausal age for the retired women is significantly different with that for the unemployed and the employed women; it was found that the mean menopausal age for the retired women was 50.5 years, while it was 47 and 46.8 years for the unemployed and the employed respectively.

Table (4.20): The relationship between the menopausal age and the BMI (N=400)

Variables		N	Mean	Factor	Value	Sig.
BMI	18.5-24.9	43	45.55	F	3.962	.020*
	25-29.9	126	47.32			
	30 and over	231	47.30			

Regarding the BMI measures, the normal weight women entered the menopausal stage at a smaller age (45.5) years than the overweight and the obese ones (47.3) years, where the Scheffe test showed that the menopausal age for the normal weight women differed significantly with that for the overweight and the obese ones.

Table (4.21): The relationship between the menopausal age and socio-economic related variables (N=400)

Variables	N	Mean	Factor	Value	Sig.	Menopausal age
Family members	1-6 members	186	47.08	F	1.973	.140
	7-12 members	200	47.02			
	13-18 members	14	49.14			
Family members who work	Zero	60	46.51	F	1.931	0.146
	One only	210	46.99			
	More than one	130	47.62			
Monthly income (NIS)	Less than 1000	200	46.78	F	1.869	0.156
	1000-3000	186	47.40			
	3001-5000	14	48.28			
Is the respondent considered as the main breadwinner	No	318	47.323	t	2.020	0.044*
	Yes	82	46.353			

Regarding the family members and their employment status, and the monthly income for the women families, none of those factors were found to be affecting the menopausal age for them. However, the women who are the main breadwinner for their families, had a lower menopausal age (46.3) years than others (47.3) years as shown by the independent t-test (p=0.04).

Table (4.22): The relationship between the menopausal age and menstrual period related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age of menarche	10-12 years	79	46.97	F	3.516	.031*
	13-15 years	286	47.36			
	16-19 years	35	45.54			
Regularity of the respondent's menstrual period	Who said yes	315	47.34	F	2.521	.082
	Who said no	67	46.35			
	Who do not know	18	46.05			
Number of the respondent's menstrual period days	less than a week	186	47.20	F	.082	.921
	for a week	186	47.05			
	more than a week	28	47.03			
The pain degrees of the respondent's menstrual period	not painful	54	46.92	F	2.331	.074
	mild pain	165	47.72			
	moderate pain	118	46.71			
	severe pain	63	46.50			
Spotting or bleeding between periods	No	274	47.146	t	0.163	0.874
	Yes	126	47.079			

It was that the menopausal age is affected by the menarcheal age; the women who were 13-15 years at their menarche, were the oldest at their menopause (47.3) years, however,

women aged (16-19) years at their menarche, were the youngest at their menopause (45.5) years, and the women who were the youngest at their menarche (10-12) years, reached to their menopausal stage at a mean age of (46.9) years. The Scheffe test showed that the only significant difference was between the menarcheal age of (13-15) years and (16-19) years groups. The other factors of the menstrual period issues such as the longevity, regularity, the pain degrees of dysmenorrhea, and spotting between periods were not found to be affecting the menopausal age. In contrast, it was found that women who had menstrual bleeding longer than 5 days, were bigger at their menopause in Lebanon (Reynolds & Obermeyer, 2001).

Table (4.23A): The relationship between the menopausal age and the pregnancy related variables (N=375)

Variables			N	Mean	Factor	Value	Sig.
Birth control use	Yes		207	47.067	t	0.082	0.935
	No		168	47.101			
Birth control methods	Pills	Yes	95	47.231	t	-0.427	0.670
		No	280	47.032			
	IUD	Yes	147	47.095	t	-.050	.960
		No	228	47.074			
	Injectable hormones	Yes	31	47.00	t	.122	.903
		No	344	47.090			
	Implanted hormones	Yes	2	51.00	t	-1.415	.158
		No	373	47.061			
	Condom	Yes	32	46.625	t	.688	.492
		No	343	47.125			
	Natural family planning	Yes	22	46.681	t	.492	.623
		No	353	47.107			
	Other	Yes	3	50.333	t	-1.440	.151
		No	372	47.056			

Table (4.23B): The relationship between the menopausal age and the pregnancy related variables (N=359)

Variables		N	Mean	Factor	Value	Sig.
Pregnancy times	Zero	16	46.37	F	1.736	.159
	1-6 times	113	46.53			
	7-12 times	211	47.27			
	13-19 times	35	48.00			
Age at first pregnancy	from 14-21	251	47.095	F	.118	.888
	from 22-29	90	47.07			
	from 30-37	18	47.55			
Age at last pregnancy	from 17-28	23	46.17	F	6.711	.001*
	from 29-40	275	46.83			
	from 41-50	61	48.73			
Pregnancy complications	Yes	55	47.018	T	0.196	0.845
	No	304	47.131			

Pregnancy times, pregnancy complications, birth control use regardless of the method, and age at first pregnancy were not associated with the mean menopausal age for the women, however, the age at last pregnancy is associated with the mean menopausal age; women who were between 41 to 50 years at their last pregnancy, had a menopausal age of 48.7 years, women who were 29-40 years old at their last pregnancy, had a menopausal age of (46.8) years, and the women who were the youngest at their last pregnancy (17-28) years, they were also the youngest at their menopause (46.1) years; the age group (41-50) differed significantly from the other two groups according to Scheffe test.

Table (4.24): The relationship between the menopausal age and births related variables (N=375)

Variables		N	Mean	Factor	Value	Sig.
Full-term births	None	19	46.78	F	3.573	.014*
	from 1-5	125	46.36			
	from 6-10	202	47.31			
	from 11-15	29	48.79			
Pre-mature births	None	291	47.144	F	.429	.652
	one only	47	47.148			
	more than one	37	46.51			
Abortions	None	152	47.098	F	.030	.971
	one or two	168	47.107			
	more than	55	46.96			
Living children	None	18	46.66	F	5.111	.002*
	from 1-5	129	46.37			
	from 6-10	198	47.23			
	from 11-15	30	49.36			

In relation to the number of full term births, premature births, abortions, and living children for the women; it was found that the menopausal age was affected by the number of full term births, and the number of living children; when the full term births were classified to none, (1-5), (6-10), and (11-15) births; the menopausal age for the women according to this classification was (46.7), (46.3), (47.3), and (48.7) years. The post hoc test showed that the only different relationship is between (1-5) and (11-15) full term births groups. The same for the number of living children; table (4.24) shows that the women having more children (11-15), were the oldest at menopause (49.3) years, and Scheffe test showed that the differences are between the (11-15) group with the (1-5) group, and between the (11-15) group with (6-10) group.

Table (4.25): The relationship between the menopausal age and life style related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Does the respondent practice an exercise	No	202	46.950	t	-.905	.366
	Yes	198	47.303			
How often does the respondent practice an exercise	Daily	78	47.28	F	.671	.571
	Weekly	62	47.67			
	Monthly	16	47.62			
	Rarely	42	46.66			
For how long does the respondent exercise	less than 30 min	14	47.21	F	.205	.815
	from 30-60 min	166	47.25			
	more than 60 min	18	47.83			
How many meals does the respondent consume daily	less than 3 meals	204	47.25	F	.284	.753
	three meals	188	47			
	more than 3 meals	8	46.62			

Practicing exercise, along with the duration, and the frequency of physical exercise were not associated with the menopausal age. Also diet habits were not found to affect the menopausal age except herbal drinking factor (p=.001); the menopausal age for women who do not consume any herbal drink was (46.5) years, and for women who reported that they consume herbal drinks daily, weekly, monthly, and rarely was (48.49), (48.15), (47.5), and (44.66) years respectively.

Table (4.26): The relationship between the menopausal age and the life style related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Servings of fruits daily	Zero	42	47.14	F	.322	.725
	One	212	46.98			
	More than one	146	47.32			
Servings of vegetables daily	Zero	13	48.76	F	1.201	.302
	One	215	47.07			
	More than one	172	47.05			
How many times does the respondent consume herbal drinks daily	None	233	46.53	F	4.934	.001*
	Daily	51	48.49			
	Weekly	64	48.15			
	Monthly	46	47.5			
	Rarely	6	44.66			
How many times does the respondent consume caffeine drinks daily	No	41	46.48	F	1.437	.239
	1-2 drinks	216	47.41			
	More than 2	143	46.87			

Fruits, vegetables, and caffeinated drinks were found to be not affecting the menopausal age, while the frequency of drinking herbal beverages found to be an affecting factor of the menopausal age (p=.001), the menopausal age for women who reported that they do not consume herbal drinks was 46.35, while it was 44.6 for those who consumed herbal drinks rarely; however, the menopausal age for women who drink herbs daily and weekly was around 48.5, and 48.15 respectively, and it was 47.5 for women drinking herbs by monthly frequency. We can conclude that herbal drinks may increase the menopausal age, where the only difference was between non-drinkers and daily drinkers.

Table (4.27): The relationship between the menopausal age and stressors related variables (N=400)

Variables			N	Mean	Factor	Value	Sig.
How does the respondent evaluate her health	Poor		55	46.83	F	.203	.894
	Fair		170	47.22			
	Good		163	47.07			
	very good		12	47.58			
Stressors effect	no effect		3	45	F	.580	.628
	to a small extent		61	46.86			
	to a moderate extent		193	47.06			
	to a large extent		143	47.36			
Stress handling	Poorly		31	47.12	F	.459	.711
	Moderately		135	47.37			
	Well		205	46.91			
	very well		29	47.44			
Life stressors	Money deficit	Yes	195	46.876	t	1.244	.214
		No	205	47.361			
	Children problems	Yes	259	47.065	t	.413	.680
		No	141	47.234			
	House-work	Yes	184	47.217	t	-.442	.659
		No	216	47.046			
	Job burden	Yes	30	47.900	t	-1.134	.257
		No	370	47.062			

In relation to the stressors in the women's life, the menopausal age was not related to any of the mentioned life stress factors in table (4.27).

Table (4.28): The relationship between the menopausal age and the women's view about menopause (N=400)

Variables		N	Mean	Factor	Value	Sig.
How does the respondent view menopause	Positively	264	47.1	F	.477	.621
	Negatively	134	47.19			
	Other	2	44.50			

How the women viewed menopause did not affect their menopausal age (p=0.477) as we can see in table (4.28).

4.3.2 Knowledge

Table (4.29): The relationship between the knowledge score and the socio-demographic variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age groups	40-49	112	57.1%	F	4.611	0.010*
	50-55	170	61.1%			
	56-60	118	60.3%			
Marital status	Single	25	62.4%	F	4.019	0.008*
	Married	295	58.6%			
	Divorced	20	62.2%			
	Widowed	60	63.5%			
Employment status	Un-employed	343	59.2%	F	3.529	0.030*
	Employed	48	62.9%			
	Retired	9	65.5%			
Educational level	Un-educated	36	58.7%	F	5.006	0.007*
	Primary-secondary	293	59.0%			
	Bachelor's and high	71	63.5%			
Citizenship	Non-refugee	239	58.4%	t	-3.041	0.003*
	Refugee	161	61.8%			

We can see from table (4.29) that the knowledge score towards menopause was affected by the age group of the participants, where this relationship was found to statistically

significant (p=0.01). And there was a difference between the knowledge score (57.1%) for the age group (40-49) years and the age groups (50-55) according to the post hoc test. This could be attributed to that younger women could have entered the menopausal stage recently, in contrast with the other age groups who could have learned about menopause from their personal experiment.

Regarding the marital status for the participants, we found that the married women had the lowest knowledge score (58.6%) compared with the single, divorced, and widowed women whom knowledge scores found to be (62.4%), (62.2%), and (63.5%) respectively. By operating the Scheffe test, the only significantly different relationship was between the widowed and the married women.

It was found also by applying independent t-test that refugee women had a higher knowledge score (61.8%) than non-refugee women (58.4%). In relation to the employment status, the un-employed women had the lowest score of knowledge (59.2%) compared with employed (62.9%) and retired women (65.5%); however, the post hoc test showed that there is no statistically significant difference between any of the different categories.

Regarding the educational level, it was found that the knowledge score was affected by the educational level in a statistically significant relationship, where the highly educated women (Bachelor's and high studies) had the highest score of knowledge (63.5%), compared with the un-educated (58.7%) and the primary-secondary educated women (59%); it was confirmed by the Scheffe test that there is a significant difference between the Bachelor and high studies and the primary-secondary education.

The same results was shown by Noroozi, et al. (2003) study in Isfahan test showed that knowledge score is related to the education level (Noroozi, et al., 2013). Moreover, it was found in Alexandria that women's knowledge about menopause was related to marital status, education, and employment status (Loutfy, et al., 2006).

Table (4.30): The relationship between the knowledge score and the socio-economic variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Family members	1-6 members	186	60.1%	F	.195	0.823
	7-12 members	200	59.4%			
	13-19 members	14	60.3%			
Family members who work	Zero	60	60.0%	F	.012	0.988
	One only	210	59.7%			
	More than one	130	59.7%			
Monthly income (NIS)	Less than 1000	200	59.4%	F	.428	0.652
	1000-3000	186	60.0%			
	3001-5000	14	62.1%			
Is the respondent considered as the main breadwinner of the family	No	318	58.9%	T	-3.017	0.003*
	Yes	82	63.1%			

On the other hand, number of family members, number of working family members, and monthly income for the family were not found to be affecting factors on the knowledge score for the participated women. On the other hand, the knowledge score was found to be affected by the economic status in Isfahan (Noroozi, et al., 2003). However, being the main breadwinner for the family in relation to women was an affecting factor on the knowledge score. The knowledge score, for those who reported that they are the main breadwinner for their families, was (63.1%), while the knowledge score for those who were not considered as the main breadwinner for their families was (58.9%).

Table (4.31): The relationship between the knowledge score and the menopausal variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age of menopause	Age of menopause from 30-39	6	53.3%	F	1.653	0.193
	Age of menopause from 40-49	270	59.4%			
	Age of menopause from 50-59	124	60.8%			
Menopausal status	Spontaneous	343	60.2%	F	3.000	0.031*
	Surgical	45	56.0%			
	chemotherapy or radiation	10	64.5%			
	Other	2	50.0%			

The age of menopause for the participating women was not found to be affecting their knowledge score, while the menopausal status for them affected their knowledge score. Table (4.31) shows that women who entered their menopausal status by due to chemotherapy or radiation had a mean knowledge score of (64.5%), while the mean knowledge score for those who entered the menopause status due to other reasons rather than surgical or normal menopause was (50%), compared with (56%), and (60.2%) respectively. However, the post hoc test showed that there is not any difference between any of the subgroups.

Table (4.32): The relationship between the knowledge score and the rated knowledge by the participants about menopause (N=400)

Variables		N	Mean	Factor	Value	Sig.
How does the respondent rate her knowledge about menopause	Poor	52	55.4%	F	4.319	.005*
	Moderate	143	60.9%			
	Good	168	60.7%			
	very good	37	57.03%			

Regarding the rating of the women's knowledge level about menopause by the women themselves, we can see that the women who rated their knowledge about menopause as being poor, had a mean score of (55.4%) and those who rated their knowledge as being moderate had a score of (60.9%); however, women who expected that they have very good knowledge about menopause, they had, in fact, a low mean knowledge score (57%); this was lower score than the score of women who expected that they have a moderate(60.9%) or good knowledge score (60.7%). The same comparison was for women who reported that they have moderate and good knowledge. These results indicate that the women may think that they have knowledge about some issues in the right way while this could be wrong in many times. Moreover, the Scheffe post hoc test showed that the significant difference was between the poor knowledge group, with the moderate group, and between the poor knowledge groups, with the good knowledge group.

4.3.3 Attitude

Table (4.33): The relationship between the attitude score and the socio-demographic variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age groups	40-49	112	61.8%	F	2.065	0.128
	50-55	170	59.5%			
	56-60	118	59.8%			
Marital status	Single	25	61.5%	F	.467	0.706
	Married	295	60.2%			
	Divorced	20	58.2%			
	Widowed	60	60.5%			
Employment status	Un-	343	60%	F	2.603	0.075
	Employed	48	62.7%			
	Retired	9	56.2%			
Educational level	Un-	36\	60.9%	F	4.796	0.009*
	Primary-	293	59.4%			
	Bachelor's	71	63.2%			
Citizenship	Non-	239	59.2%	t	-2.477	0.014*
	Refugee	161	61.7%			

Regarding the factors affecting attitude score about menopause among the studied women, we found that the statistically significant relationships were for the citizenship, and the educational level. The mean attitude score for the refugees was 61.7%, while for the non-refugees, it was 59.2%. and in regard to the educational level, the Bachelor's and high studies educated women had the most positive attitude towards menopause where the mean attitude score for this category was (63.2%), while the uneducated women, and the primary-secondary educated women had a mean attitude score of (60.9%), and (59.4%) respectively. Resembled result showed by Noroozi, et al. (2003), where the attitude score was affected by the educational level. The post hoc test showed that the bachelor group differed from the primary-secondary group. The other remaining factors in the table (4) were not found to be affecting (not statistically significant) with the women's attitude score. A study in Qatar found that the attitude of women towards menopause depended on the husband's level of support (Murphy, et al., 2013).

Table (4.34): The relationship between the attitude score and the socio-economic variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Family members	1-6 members	186	60.8%	F	.699	.498
	7-12 members	200	59.7%			
	13-19 members	14	59.1%			
Family members who work	Zero	60	59.6%	F	.506	.603
	One only	210	60%			
	More than one	130	60.9%			
Monthly income (NIS)	Less than 1000	200	60.3%	F	.263	0.769
	1000-3000	186	60%			
	3001-5000	14	62%			
Is the respondent	No	318	60.1%	t	-.623	0.533
	Yes	82	60.8%			

After applying one way ANOVA and independent t-test, the results showed that factors of family members' number, conditions of family members working, the monthly income of the family, and consideration of the women as being the main breadwinner for their

families were not statistically significant with the attitude mean score. However, the economic status affected the attitude score in Isfahan (Noroozi, et al., 2003).

Table (4.35): The relationship between the attitude score and the BMI variable (N=400)

Variables		N	Mean	Factor	Value	Sig.
BMI	18.5-24.9 (normal wt.)	43	59.3%	F	.618	0.539
	25-29.9 (over wt.)	126	61%			
	30 and over (obese)	231	60%			

When the effect of the BMI on the women's attitude was tested by ANOVA test, it was found that it did not have a significant effect on the attitude (p=0.539).

Table (4.36): The relationship between the attitude score and the menstrual period related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age of menarche	10-12 years	79	60.7%	F	1.581	0.207
	13-15 years	286	60.4%			
	16-19 years	35	57.5%			
Regularity of the respondent's menstrual period	Who said yes	315	60.6%	F	1.526	.219
	Who said no	67	58.4%			
	Who do not know	18	59.7%			
Number of the respondent's menstrual period days	less than a week	186	59.8%	F	1.249	.288
	for a week	186	60.9%			
	more than a week	28	58.4%			
The pain degrees of the respondent's menstrual period	not painful	54	60.2%	F	.396	.756
	mild pain	165	60.4%			
	moderate pain	118	60.6%			
	severe pain	63	59%			
Spotting or bleeding between periods	No	274	60.6%	t	1.349	0.178
	Yes	126	59.3%			

In relation to the effect of menstrual period factors on the women's attitude mean score, one way ANOVA test and independent t-test showed that menstrual related factors such as menstrual period days and regularity, or dysmenorrhea did not affect the attitude mean score.

Table (4.37A): The relationship between the attitude score and the dysmenorrheal related variables (N=400)

Variables			N	Mean	Factor	Value	Sig.
Mood swings	Pre-period	Yes	86	60.8%	t	-0.599	0.550
		No	314	60.1%			
	During period	Yes	84	58.8%	t	1.877	0.062
		No	316	60.6%			
	Post-period	Yes	9	56.4%	t	1.210	0.227
		No	391	60.3%			
Headache	Pre-period	Yes	56	58.8%	t	1.216	0.225
		No	344	60.5%			
	During period	Yes	66	59.6%	t	0.611	0.542
		No	334	60.3%			
	Post-period	Yes	24	56.8%	t	1.814	0.07
		No	376	60.4%			
Bloating	Pre-period	Yes	101	60.5%	t	-0.327	0.744
		No	299	60.1%			
	During period	Yes	98	59.7%	t	0.654	0.513
		No	302	60.4%			
	Post-period	Yes	10	58.8%	t	0.489	0.625
		No	390	60.3%			

As dysmenorrhea among women does not affect the attitude mean score. All the different symptoms of dysmenorrhea that can affect women during their menstrual periods were found to be not related to the women's attitude towards menopause.

Table (4.37B): The relationship between the attitude score and the dysmenorrheal related variables (N=400)

Variables			N	Mean	Factor	Value	Sig.
Abdominal pain	Pre-period	Yes	163	60.9%	t	-1.204	0.230
		No	237	59.7%			
	During period	Yes	234	60.4%	t	-0.338	0.735
		No	166	60%			
	Post-period	Yes	24	59.5%	t	0.403	0.687
		No	376	60.3%			
Low backache	Pre-period	Yes	158	60.6%	t	-0.727	0.468
		No	242	59.9%			
	During period	Yes	174	61.1%	t	-1.580	0.115
		No	226	59.6%			
	Post-period	Yes	43	59.8%	t	0.371	0.712
		No	357	60.3%			

The other two dysmenorrheal symptoms in table (4.37B) were not affecting the women's attitude about menopause.

Table (4.38): The relationship between the attitude score and the pregnancy related variables (N=375)

Variables		N	Mean	Factor	Value	Sig.
Pregnancy times	Zero	16	57%	F	1.056	.368
	1-6 times	113	60.1%			
	7-12 times	211	60.6%			
	13-19	35	58.6%			
Pregnancy complications	Yes	55	59.7%	T	0.478	0.633
	No	304	60.4%			

Regarding pregnancy issues among women, it was found that pregnancy times, and the presence of any pregnancy complications were not associated with the women's attitude towards menopause.

Table (4.39): The relationship between the attitude score and the menopausal related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age of menopause	Age of menopause	6	53%	F	1.885	.153
	Age of menopause	270	60.5%			
	Age of menopause	124	60%			
Menopausal status	Spontaneous	343	60.4%	F	1.091	.353
	Surgical	45	58.2%			
	chemotherapy or radiation	10	63.6%			
	Other	2	60%			

In relation to the age of menopause and menopausal status, those factors were also not related to the attitude score towards menopause.

Table (4.40): The relationship between the attitude score and the life style related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Does the respondent practice an	No	202	59.1%	t	-2.260	0.024*
	Yes	198	61.3%			
How often does the respondent practice an exercise	Daily	78	62.3%	F	1.205	.309
	Weekly	62	61.7%			
	Monthly	16	61.1%			
	Rarely	42	59%			

About the effect of life style factors on the attitude score, it was found that those who reported that they practice physical exercise had a higher attitude score towards menopause, reflecting more positive attitude than that for women who do not practice physical exercise. However, the frequency of doing an exercise did not affect the attitude score.

Table (4.41): The relationship between the attitude score and the rated knowledge by the participants about menopause and their view about menopause (N=400)

Variables		N	Mean	Factor	Value	Sig.
How does the respondent rate her knowledge about menopause	Poor	52	58.6%	F	3.015	.030*
	Moderate	143	59.6%			
	Good	168	60.3%			
	very good	37	64.4%			
How does the respondent view menopause	Positively	264	61.8%	F	12.204	.000*
	Negatively	134	57%			
	Other	2	67%			

Women who evaluated their knowledge about menopause to be very good, had the most positive attitude score (64.4%) about menopause; women who said that their knowledge about menopause is poor, moderate, and good had (58.6%), (59.6%), and (60.3%) respectively. However, there was not any statistically significant difference among the four different categories, when tested by the Scheffe post hoc test. The respondents who viewed the menopause status by positive way had a mean attitude score of (61.8%), while the women who viewed the menopausal status negatively, had a mean attitude score of (57%); by operating the Scheffe post hoc test, there was a statistical difference between those two categories; however, women who reported other views about menopause, had a mean attitude score of (67%).

Table (4.42): The relationship between the attitude score and the stressors related variables (N=400)

Variables			N	Mean	Factor	Value	Sig.
How does the respondent evaluate her health	Poor		55	55.7%	F	9.184	.000*
	Fair		170	59.2%			
	Good		163	62.6%			
	very good		12	64.1%			
Stressors effect	no effect		3	58.6%	F	1.962	.119
	to a small extent		61	62.9%			
	to a moderate extent		193	59.8%			
	to a large extent		143	59.7%			
Stress handling	Poorly		31	56.1%	F	2.989	.031*
	Moderately		135	59.6%			
	Well		205	60.9%			
	very well		29	62.4%			
Life stressors	Money deficit	Yes	195	59.6%	t	1.313	.190
		No	205	60.8%			
	Children problems	Yes	259	59.7%	t	1.362	.174
		No	141	61.1%			
	House-work	Yes	184	58.8%	t	2.687	.008*
		No	216	61.4%			
	Job burden	Yes	30	64.7%	t	-2.675	.008*
		No	370	59.9%			

Women who evaluated their health as poor, fair, good, and very good were statistically significant in regard to their attitude about menopause, where their attitude mean scores were (55.7%), (59.2%), (62.6%), and (64.1%) respectively showing that women who have positive attitude towards life in general and specifically towards their health, they also have positive attitudes towards menopause. We found also that there is a significant difference between the following relationships; poor health evaluated category with good health evaluated category, and poor health evaluated category with very good evaluated category; and fair health evaluated category with good health evaluated. The different life stressors showed different results in relation to their effect on the attitude mean score; the stressors resulted from money deficiency and from children showed no statistically significant effect; however, women who said that the housework do not cause stress to them, had a

mean attitude score of (61.4%) in comparison with those who were stressed from house work (58.8%); on the other hand, the women who said that their job increases their stress, had a higher mean score of attitude (64.7%), in comparison with those who do not have job or are not stressed by their job (59.9%). The effect of the stressors on the women's life from their perspective was not a significant factor on their attitude. However, how the women can treat with the different stressors and to which degree they can handle their stress was a significant effect on their attitude; but there was not a significant difference among the different categories according to the Scheffe test.

4.3.4 Practice

Table (4.43): The relationship between the practice score and the socio-demographic related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age groups	40-49	112	47.3%	F	1.134	0.323
	50-55	170	48.4%			
	56-60	118	44%			
Marital status	Single	25	44.4%	F	3.004	0.030*
	Married	295	45.9%			
	Divorced	20	62.5%			
	Widowed	60	47%			
Employment status	Un-employed	343	44.6%	F	10.721	0.000*
	Employed	48	61.2%			
	Retired	9	54.4%			
Educational level	Un-educated	36	42.2%	F	6.574	0.002*
	Primary-secondary	293	45.1%			
	Bachelor's	71	56%			
Citizenship	Non-refugee	239	45.7%	t	-1.049	0.295
	Refugee	161	48.3%			

Regarding the different factors affecting the practice score towards menopause, women's age, and being refugee or non-refugee were found to be not statistically significant with the practice score. On the other hand, the marital status, the employment status, and the educational level for the women were found to be factors affecting the practice score.

In relation to the marital status, divorced women were the most women doing healthy practices towards menopause (62.5%), while un-married, married, and widowed women had lower practice scores, which were (44.4%), (45.9%), and (47%) which seems to be related to un-expected reasons. And the only significant difference was between the divorced women with the married women.

The same was found for the employment status, there was a difference in the practice score for the un-employed (44.6%) women when compared with the employed (61.2%) and the retired women (54.4%), with the only significant relationship being between the employed with the un-employed according to the post hoc multiple comparisons, which sounds logic.

The same results were found regarding the educational level, where the more educated women had a statistically significant different score with the less educated women; Bachelor's and high studies obtaining women had a practice score of (56%), compared with (42.2%) for un-educated women, and (45.1%) for primarily- secondarily educated women.

The practice score for the highest educated women, who reached to the bachelor or to higher studies, differed significantly with the practice score for the two other categories when the post hoc multiple comparisons was analyzed.

Table (4.44): The relationship between the practice score and the socio-economic related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Family members	1-6 members	186	48.8%	F	1.922	.148
	7-12 members	200	44.5%			
	13-19 members	14	52.8%			
Family members who work	Zero	60	51.3%	F	1.204	.301
	One only	210	46%			
	More than one	130	46.08%			
Monthly income (NIS)	Less than 1000	200	46.2%	F	.128	0.880
	1000-3000	186	47.3%			
	3001-5000	14	48.5%			
Is the respondent considered as the main	No	318	44.4%	t	-3.562	.001*
	Yes	82	56.2%			

Regarding the family members and income factors, it was found that the statistically significant affecting factors were only; being the main breadwinner for the family where the practice mean score in this case was found to be (56.2%), while the other women who are not the main breadwinner for their families had a practice mean score of (44.4%). However, in Alexandria, Egypt, it was found that women practices are affected by their income (Loutfy, et al., 2006).

Table (4.45): The relationship between the practice score and the BMI variable (N=400)

Variables		N	Mean	Factor	Value	Sig.
BMI	18.5-24.9	43	53.2%	F	3.781	0.024*
	25-29.9 (over	126	49.6%			
	30 and over	231	44.1%			

Regarding the women's BMI; those who were obese (44.1%), had the lowest practice score, followed by the overweight women (49.6%) and normal weight women (53.2%) showing that the women who have healthier weight, were more tend able to show healthier practices in their whole life; than others, but the hoc test multiple comparisons showed that there is not any significant difference between any of the three categories.

Table (4.46): The relationship between the practice score and the rated knowledge by the respondents about menopause (N=400)

Variable		N	Mean	Factor	Value	Sig.
How does the respondent rate her knowledge about menopause	Poor	52	36.9%	F	12.942	.000*
	Moderate	143	41.6%			
	Good	168	50.7%			
	very good	37	62.9%			

Women, who reported that their knowledge about menopause is poor, had the least practice mean score (36.9%), followed by those who said that their knowledge is moderate (41.6%), then women who said that they have good knowledge (50.7%), and the highest practice score was for those who reported very good knowledge towards menopause (62.9%). Analysis of the multiple comparisons by the post hoc test showed different statistical significant relationships; poor rated knowledge with good and very good rated knowledge, moderate rated knowledge with good and very good rated knowledge, and good with very good rated knowledge. The knowledge about menopause was an important factor affecting how the women deal with the menopause related health practices.

4.3.5 Quality of Life

Table (4.47): The relationship between the QoL score and the socio-demographic related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age groups	40-49	112	44.9%	F	1.514	0.221
	50-55	170	46.1%			
	56-60	118	43.5%			
Marital status	Single	25	48.6%	F	2.842	0.038*
	Married	295	45.6%			
	Divorced	20	41.3%			
	Widowed	60	41.6%			
Employment status	Un-employed	343	45%	F	4.495	0.012*
	Employed	48	47%			
	Retired	9	33.2%			
Educational level	Un-educated	36	43.7%	F	.775	0.461
	Primary-secondary	293	45.5%			
	Bachelor's and high studies	71	43.7%			
Citizenship	Non-refugee	239	45.8%	t	1.517	0.130
	Refugee	161	43.8%			

The age did not affect the quality of life for women, while in Oman; it was found that the progression of menopausal stage, old age versus young age affected the QoL for women (El Shafie, et al., 2011). The marital status and the employment status were found to be factors with statistically significant relationship with the QoL for women. Single women had the highest QoL mean score (48.6%); married women had a QoL score of (45.6%); and divorced and widowed women had the two lowest QoL scores by (41.3%), (41.6%) respectively; however, the multiple comparisons did not show any statistically significant difference between the different categories. In Oman, it was found that married women had a better quality of life score than single women (El Shafie, et al., 2011).

And in relation to the employment status, the retired women had the lowest QoL score by (33.2%), while employed women had the highest QoL score by (47%), and the un-

employed women had a QoL mean score of (45%). By the same context, a previous study showed that the vasomotor and physical quality-of-life scores were significantly higher among housewives (Yanikkerem, et al., 2012). The Scheffe post hoc test revealed that the retired women had a mean QoL score which is different by a statistically significant comparison with the mean QoL score for the employed women and with the mean QoL score for the unemployed women.

However, age of women, being refugee or not, and the educational level for women were not associated with a statistically significant relationship with QoL mean score. However, the educated had a better quality of life than uneducated women in Oman (El Shafie, et al., 2011), but in Tripoli, the uneducated women were found to have a better quality of life (Taher et al., 2012). And it was found by Ghazanfarpour, et al. (2015) that the marital status and educational level of the husband were affecting the severity of menopausal symptoms (Ghazanfarpour, et al., 2015).

Table (4.48): The relationship between the QoL score and the socio-economic related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Family members	1-6 members	186	45.6%	F	.461	.631
	7-12 members	200	44.4%			
	13-18 members	14	45.6%			
Family members who work	Zero	60	42.8%	F	2.093	.125
	One only	210	44.6%			
	More than one	130	46.6%			
Monthly income (NIS)	Less than 1000	200	43.5%	F	2.755	0.065
	1000-3000	186	46.6%			
	3001-5000	14	44.9%			
Is the respondent considered as the main breadwinner of the family	No	318	45.7%	t	2.153	.032*
	Yes	82	42.3%			

Family members' number and income for the women's families did not affect their QoL mean score.

However, women who are considered as the main breadwinner for their families differed by a statistically significant relationship from those who are not the main breadwinner for their families in relation to the QoL mean score. The main breadwinner women had a QoL score of (42.3%), while the others had a QoL score of (45.7%).

Table (4.49): The relationship between the QoL score and the BMI variable (N=400)

Variables		N	Mean	Factor	Value	Sig.
BMI	18.5-24.9 (normal wt.)	43	45.1%	F	.030	0.971
	25-29.9 (over wt.)	126	44.8%			
	30 and over (obese)	231	45.1%			

The BMI for the women did not affect their QoL mean score; however, Lu, et al. (2007) found that women who had a lower body mass index reported fewer and less severe symptoms (Lu, et al., 2007).

Also, a significant relationship was found between the number of menopausal symptoms and body mass index (Abou-Raya, et al., 2016).

Table (4.50): The relationship between the QoL score and the menstrual period related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age of menarche	10-12 years	79	45.8%	F	1.070	.344
	13-15 years	286	45.1%			
	16-19 years	35	42.1%			
Regularity of the respondent's menstrual period	Who said yes	315	45%	F	.033	.967
	Who said no	67	45.2%			
	Who do not know	18	44.4%			
Number of the respondent's menstrual period days	less than a week	186	46%	F	4.404	.013*
	for a week	186	44.9%			
	more than a week	28	38.4%			
The pain degrees of the respondent's menstrual period	not painful	54	47.3%	F	3.089	.027*
	mild pain	165	45.2%			
	moderate pain	118	45.8%			
	severe pain	63	40.8%			
Spotting or bleeding between periods	No	274	45.6%	t	-1.390	0.165
	Yes	126	43.7%			

By analyzing the menstrual period related issues in regard to their relationship with the QoL score, we found that the duration of the menstrual period days, along with the degree of dysmenorrhea, or pain during the menstrual period for the women affected the women's QoL. Women who were having menstrual period of more than a week had the least

positive QoL score (38.4%), a menstrual period of a week, and less than a week were associated with (44.9%), and (46%) QoL score. The mean QoL score for more than a week category was statistically different with the week and less than a week categories according to the Scheffe test. The same for dysmenorrheal pain degrees; the following results were found according to the different degrees of pain: not painful (47.3%), mild pain (45.2%), moderate pain (45.8%), and severe pain (40.8%). However, none of the four categories was statistically different from each other according to the post hoc multiple comparisons. Age of menarche, regularity of the menstrual period and the presence of any spotting or bleeding between periods were not affecting the QoL score by statistically significant relationships.

Table (4.51): The relationship between the QoL score and the menopausal related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Age of menopause	Age of menopause from 30-39	6	48%	F	1.817	.164
	Age of menopause from 40-49	270	45.7%			
	Age of menopause from 50-59	124	43.2%			
Menopausal status	Spontaneous	343	45.1%	F	.205	.893
	Surgical	45	44.5%			
	chemotherapy or radiation	10	43.8%			
	Other	2	39%			

Factors which are related to the menopause such as the menopausal age, and the menopausal status are not associated with the quality of life for women, as table (4.51) shows.

Table (4.52): The relationship between the QoL score and the pregnancy related variables (N=375)

Variables			N	Mean	Factor	Value	Sig.
Birth control use	Yes		207	45%	t	0.494	0.622
	No		168	44.4%			
Birth control methods	Pills	Yes	95	45%	t	0.254	0.8
		No	280	44.8%			
	IUD	Yes	147	44.8%	t	0.021	0.983
		No	228	44.7%			
	Injectable hormones	Yes	31	45.4%	t	0.298	0.766
		No	344	44.8%			
	Implanted hormones	Yes	2	55%	t	1.154	0.249
		No	373	44.8%			
	Condom	Yes	32	49.2%	t	2.045	0.042*
		No	343	44.4%			
	Natural family	Yes	22	49.6%	t	1.820	0.070
		No	353	44.6%			
	Other	Yes	3	26%	t	-2.589	0.010*
		No	372	45%			
Pregnancy complications	Yes		55	45.4%	t	-1.462	0.145
	No		304	42.6%			
Pregnancy times	Zero		16	42.4%	F	.973	.405
	1-6 times		113	44.8%			
	7-12 times		211	45.4%			
	13-19		35	41.8%			
Age at first pregnancy	from 14-21		251	44.6%	F	.366	.694
	from 22-29		90	45.8%			
	from 30-37		18	44.6%			
Age at last pregnancy	from 17-28		23	48.8%	F	1.749	.176
	from 29-40		275	45%			
	from 41-50		61	42.9%			

In relation to the factors related to the use of birth control and birth control methods; it was found that whether the women used any birth control method or not, is not associated with the QoL mean score. However, it was found that only women who reported using condoms by their husbands as a birth control method, and those who reported that they used other than the mentioned family planning methods in table (4.52) had a significantly different QoL score of (49.2%), and (26%) respectively in comparison with those who reported that they did not follow condom use by their husbands as a birth control method and those who

have not used any other method (44.4%), and (45%) respectively. Number of pregnancies, the age at first and last pregnancies, and the presence of pregnancy complications were not associated with the QoL mean score of the women.

Table (4.53): The relationship between the QoL score and the births related variables (N=375)

Variables		N	Mean	Factor	Value	Sig.
Full-term births	None	19	43.8%	F	.223	.880
	from 1-5	125	45.4%			
	from 6-10	202	44.6%			
	from 11-15	29	43.6%			
Pre-mature births	None	291	45.6%	F	5.035	.007*
	one only	47	44.8%			
	more than one	37	38.6%			
Abortions	None	152	45.6%	F	0.852	.427
	one or two	168	43.8%			
	more than two	55	45.2%			
Living children	None	18	43%	F	1.339	.262
	from 1-5	129	45.4%			
	from 6-10	198	45.2%,			
	from 11-15	30	40.6%			

Women who experienced more than pre-mature births had the lowest QoL score (38.6%) when compared with women who had experienced only one pre-mature birth (44.8%), and those who did not gave birth to any pre-mature baby (45.6%), with a statistical difference between the QoL score for none and more than one premature births categories; and unexpectedly, number of abortions for the women were not related with the QoL score. Number of children did not affect the QoL; however, the opposite result was found by Abou-Raya, et al. (2016).

Table (4.54): The relationship between the QoL score and the life style related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Does the respondent practice an exercise	No	202	44.4%	t	.882	.378
	Yes	198	45.6%			
How often does the respondent practice an exercise	Daily	78	45.8%	F	.268	.849
	Weekly	62	44.5%			
	Monthly	16	45.9%			
	Rarely	42	46.7%			
For how long does the respondent exercise	less than 30 min	14	45.9%	F	.393	.676
	from 30-60 min	166	45.3%			
	more than 60 min	18	48%			
How many meals does the respondent consume daily	less than 3 meals	204	44.4%	F	4.950	.008*
	three meals	188	46.2%			
	more than 3 meals	8	32.5%			

In relation to the life style factors for the women, it was found that physical exercise was not related to the quality of life, while the diet style affected the quality of life for the women; for example, the number of meals that the respondents consume daily had a statistically significant difference, where the women consuming more than three meals had a QoL score of (32.5%), and women consuming three meals, and less than three meals daily had a QoL mean score of (46.2%), and (44.4%) respectively. The category of more than three meals unexpectedly had the least QoL score with a statistical difference with the other two categories according to the Scheffe test; this could be attributed to other health related problems associated with the importance of eating more than three meals, and the

best QoL score which is associated with eating three meals could be attributed to living in a better familial context where the whole family eat together for three times.

Table (4.55): The relationship between the QoL score and the life style related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
Servings of fruits daily	Zero	42	38.1%	F	7.565	.001*
	One	212	45.2%			
	More than one	146	46.7%			
Servings of vegetables daily	Zero	13	44.2%	F	.195	.823
	One	215	44.7%			
	More than one	172	45.4%			
How many times does the respondent consume herbal drinks daily	None	233	46.6%	F	4.384	.002*
	Daily	51	41.4%			
	Weekly	64	44.3%			
	Monthly	46	40.5%			
	Rarely	6	54.7%			
How many times does the respondent consume caffeine drinks daily	No	41	46.6%	F	5.787	.003*
	1-2 drinks	216	43%			
	More than 2	143	47.5%			

Moreover, women consuming more than one serving of fruits had a (46.7%) QoL score in comparison with women taking only one serving of fruits daily (45.2%) or not taking any serving of fruits (38.1%), with a statistically significant difference between the QoL for zero serving category with one serving category and with more than one serving category. On the other hand, number of servings of vegetable consumption was not found to be affecting the quality of life. Herbal drinks consumption was found to be related to the quality of life in a statistically significant relationship; the women who reported that they do not consume any herbal drink, had a (46.6%) QoL score, those who said that they take a

herbal drink daily had a (41.4%) QoL score, weekly consumption of herbal drinks was associated with a QoL mean score (44.3%), monthly consumption and rarely consumption were associated with (40.5%), and (54.7%) respectively. When the multiple comparisons were analyzed, there was not statistical difference between any of the categories. By the same way, QoL score was related to the caffeine consumption. Women consuming no caffeine containing beverages, drinking 1-2 caffeine drinks, and drinking more than 2 beverages or more than 2 times of caffeine drinks had a (46.6%), (43%), and (47.5%) QoL score respectively. The more than two caffeinated beverages drinkers had a statistically significant difference with the 1-2 caffeinated beverages drinkers as what was revealed by the Scheffe test. This result is the same as that found in Tripoli city, which showed that increased tea or coffee consumption resulted in fewer symptoms (Taher et al., 2012).

Table (4.56): The relationship between the QoL score and the stressors related variables (N=400)

Variables			N	Mean	Factor	Value	Sig.
How does the respondent evaluate her health	Poor		55	37.2%	F	8.870	.000*
	Fair		170	45.5%			
	Good		163	46.8%			
	very good		12	48.5%			
Stressors effect	no effect		3	58%	F	9.088	.000*
	to a small extent		61	49.2%			
	to a moderate extent		193	46.4%			
	to a large extent		143	41%			
Stress handling	Poorly		31	37.9%	F	7.477	.000*
	Moderately		135	42.7%			
	Well		205	47.4%			
	very well		29	45.8%			
Life stressors	Money deficit	Yes	195	43%	t	-3.083	.002*
		No	205	46.9%			
	Children problems	Yes	259	43.9%	t	-2.425	.016*
		No	141	47.1%			
	House-work	Yes	184	46.9%	t	2.868	.004*
		No	216	43.3%			
	Job burden	Yes	30	47%	t	.914	.361
		No	370	44.8%			

About stressors in life, women who rated their health as being poor had the least score for their QoL (37.2%), when compared with women who rated their health as being fair, good, and very good who had a (45.5%), (46.8%), and (48.5%) respectively.

The women who evaluated their health as being poor had a statistically significant QoL mean score with the other three categories. In relation to the difference of the mean QoL mean score between any two categories of the four, it was found that there is a difference between the effect to a large extent with both, the effect to a small extent and to a moderate extent. When separating the type of life stressors for the women of the study; who said that the economic stressors affected their life had a lower QoL score (43%) than those who considered that the money deficit was not a stressor in their life (46.9%). The same was for the women who considered that their children are a major stressor in their life (43.9%) compared with those who said that the children are not a major stressor (47.1%). On the other hand, the women who said that the house-work put more stress on them had a better quality of life score (46.9%) in comparison with the others (43.3%). When the stress of jobs, for working women, was analyzed by the independent t-test, it was found that there was no statistically significant difference (p=.361) between women who said that the job forms a stress on them and the others by its effect on the QoL score.

Regarding to how the women are affected by their life stressors; women who said that the stressors they face in their life do not affect their life esteem, the women who said that they are not affected by the life stressors, or affected to a small effect, to a moderated effect, and to a large extent had different QoL scores; (58%), (49.2%), (46.4%), and (41%) respectively which showed a statistically significant difference. As it was expected, the women who said that they are not affected by stressors had the best QoL score. The same result was obtained for the effect of women's stress handling on their QoL score; it was found that the women who reported that they can treat poorly with life stressors, had the lowest QoL score (37.9%), followed by (42.7%) QoL score for those who said that they treat moderately with stressors, but the women who said or they may have expected that they can treat very well with stressors, had a lower score (45.8%) than those who said that they can treat well with life stressors (47.4%). The post hoc test showed a statistically significant difference between the QoL score for those who handled stress well with those who handled stress poorly and moderately.

Table (4.57): The relationship between the QoL score and the rated knowledge and view about menopause related variables (N=400)

Variables		N	Mean	Factor	Value	Sig.
How does the respondent view menopause	Positively	264	46.5%	F	7.324	.001*
	Negatively	134	41.8%			
	Other	2	58%			
How does the respondent rate her knowledge about menopause	Poor	52	42.7%	F	1.288	.278
	Moderate	143	44.9%			
	Good	168	45.1%			
	very good	37	48.1%			

Regarding the women's attitude about menopause which was evaluated by them; women with more positive attitude had (46.5%) a better score than those who said that they have a negative attitude towards menopause (41.8%), however, the women who said that they have other opinion towards menopause rather than positive or negative attitude, had the best QoL mean score (58%). The post hoc Scheffe test showed that there is a statistically significant difference between the QoL score for those who viewed menopause by a positive way and those who viewed the menopausal status negatively.

4.3.6 Correlations between KAP components

Table (4.58): The correlation between the knowledge score, and the attitude and practice scores

Correlation components	r	P value
Knowledge score-Attitude score	-.071	.155
Knowledge score-Practice score	.107	.032*
Attitude score-Practice score	.046	.361

Correlation is significant at the 0.05 level (2-tailed).

In relation to the relationships between the knowledge score and the attitude score, we found by the correlation test that the knowledge and the attitude scores in our study are not correlated, meaning that the knowledge about menopause did not affect the attitude score towards this phenomenon. However**,** the practice score was related to the knowledge score in this study, where the correlation test showed a significant relationship (p=.032), and the pearson correlation factor was (.107); however, the knowledge and the attitude were not related (p=.155). The relationship between the attitude and the practice scores was not significant (p=.361).

4.3.7 Correlations between QoL and KAP

Table (4.59): The correlation between the QoL score, and the knowledge, attitude, and practice scores

Correlation components	r	P value
QoL-Knowledge score	.207	.000*
QoL-Attitude score	-.266	.000*
QoL-Practice score	.071	.155

Correlation is significant at the 0.01 level (2-tailed).

The QoL score was related to the knowledge score and to the attitude score; however, it was not related to the practice score or to the menopausal age. Also, Ghazanfarpour, et al. (2015), found that the attitude towards menopause is affected by the menopausal symptoms, such as night sweats, poor memory, and sleeplessness (Ghazanfarpour, et al., 2015). The same result was found by (Yanikkerem, et al., 2012).

Chapter five

Conclusion and Recommendations

5.1 Conclusion

This study was conducted to explore the major perceptions about menopause among post-menopausal women in the Gaza Strip who are aged 40-60 years; this was the first time in Gaza that this topic being discussed. Different tools were used to explore the main characteristics of the socio-demographic and economic factors for the participating women, along with the KAP and QoL tools. This chapter will conclude the main results of this study and the suggested recommendations which resulted from this study.

Regarding the main socio-demographic and economic results; The mean age for the participating women was 52.47 +/- 4.65 years; around 60% of the women were non-refugees; it was found that most of the women were educated to the secondary education or less, and around half of the participants' families contained more than six members; and regarding the economic conditions, most of the women were unemployed with an income of less than 1000 NIS for half of the women. The bad economic conditions for the Gazan people was confirmed by this study, where more than half of the women reported that they only consume one serving of fruits due to their bad economic conditions; however, more than half of the women were found to be obese, according to the standard BMI regarding obesity classification, this should grab the attention for obesity among this category of women.

The mean age of menarche was 13.71 +/- 1.4 years and the mean age of menopause was 47.12 +/- 3.89 years indicating no correlation between these two continuous variables among women in the GS. The results of this study coincided with the results of the different surveys in GS, regarding the high fertility rate and the early marriage, where the mean number of children born for the participated women was around six, and only 55.2% of the women have used birth control methods at one point in their life; unfortunately, the reported number of premature babies and the high number of abortions should be taken into consideration.

The lifestyle factors were also studied showing low indicators regarding diet and physical exercise, and high quality indicators in relation to tobacco and water-pipe smoking.

The knowledge about hormone RT was poor and the use of this therapy by the menopausal women was very low, where only eight women have used hormone RT, and only two of them still use it currently. Most of the women rated their knowledge about menopause to be moderately good, while the result showed by the knowledge part of the KAP survey showed a mean of (59.8%) +/- (11.25%) knowledge score towards menopause. (66%) viewed the menopause positively, while the mean attitude score was found to be (60.3%) +/- (9.5%); and those who said that they viewed the menopause positively, had more positive attitude score. The mean practice score towards menopause was found to be (46.8%) +/- (24.4%).

The inferential statistics revealed that the menopausal age was affected by the BMI, where the women who were classified as being obese, were older at their menopause; unemployed women were also older at their menopause than the employed women; however, the retired women reported the highest menopausal age, this could be related to some type of recall bias regarding their menopausal age as they are around sixty years old. The women, who were between 16-19 years at their menarche, were the youngest at their menopause. It is expected that women who were pregnant for 11-15 times and those who have 11-15 living children were the oldest at their menopause. In relation to the diet, women who were drinking herbs daily were the oldest at their menopause as it is known that herbal drinks contain normal estrogen.

Regarding the knowledge towards menopause; it was showed that there is a relationship between the knowledge score with the different socio-demographic and economic variables; women aged 50-55 years were found to have the best knowledge score, married women had the lowest knowledge score, the refugee status where refugees had a higher knowledge score. Moreover, it was found that the retired women had the highest knowledge score which may be related to their best experience in life. It was normal to find that the educational level can affect the knowledge score, where the highest educated women had the best knowledge score. Other results showed that being the main breadwinner for the family, and the menopausal status also affected the knowledge score of the women.

The attitude score was found to be affected by the refugee status where it was more positive among those refugee descendants; the educational level where it was the most positive among the highest educated women; practicing physical exercise also was an

affecting factor, showing more positive attitude among those who are more physically active.

The women who rated their health as being very good had the most positive attitude score. The women who said that they can handle life stressors very well, had the most positive attitude. On the other hand, women who were more stressed by housework had more negative attitude while those who are more stressed by their jobs, had a more positive attitude score showing the positive effect of working on the women's attitude.

In relation to the factors affecting the practice score towards menopause, divorced women, employed women, and the highest educated women had the highest practice score. Also, normal weight women, and being the main breadwinner for the family were factors associated with higher practice score

The mean score of the QoL for the participating women was (44.9%) +/- (12.7%). The most bothering menopausal symptoms among women were muscular pain followed by hot flushes, followed by irritability and decrease in the physical and mental abilities. On the other hand the mildest symptoms were vaginal dryness followed by urinary problems and heart problems, which was found to be different with the results of other studies in other regions. The inferential statistics showed that single women had the best QoL score; the retired women had the lowest QoL score. Being the main breadwinner was associated with a worse QoL score, women who were not experiencing dysmenorrhea, and those who were having menses for less than a week, had the best QoL score after menopause.

Regarding lifestyle factors, women who had three meals and those who eat more than one serving of fruits daily had the best QoL score, drinking more than two caffeinated drinks daily. Women who evaluated their health as being very good and women who were not affected by life stressors or those who can handle their life stressors well showed to have better QoL scores; however, women who were stressed by house work or by their jobs in case of employed women, had a best QoL score than others; however, women who were stressed by their children or by the bad economic conditions were having lower QoL score.

Knowledge score and practice score were positively correlated. Also, QoL score was found to be correlated to the knowledge and the attitude scores which were logical results.

This study showed the general aspects of the women's life after menopause, which was needed to be highlighted for encouraging special awareness programs and campaigns regarding the women's needs and the emotional support for the different premenopausal, perimenopausal, and post-menopausal stages. This study could be the baseline for future studies regarding this topic in the GS. Some limitations hindered the quick progress of this project, such as low response of women to participate which was around 33% in this study; this is hoped to be tackled for the next future studies.

5.2 Recommendations

The following will be the researcher suggested recommendations which evolved from the main results of this study. These are addressed to the policy makers and to every influential person in the community, favorably those who are in the field of this study. This can help in planning for effective program priorities to promote women's health during menopause, by addressing those issues of menopause.

Symptomatic relief is one that's attained through the social and psychological expression of internalized cultural attitudes toward aging. Culture is a source of both language and images about aging from which individuals learn to describe their experience. Despite the tangible marker of aging and the impact on identity, many women welcome the end of reproduction as a relief to their bodies and an opportunity for new experiences.

5.2.1 General recommendations

- The number of females who are holding graduate and post-graduate certificates is increasing in the last decades in our society; however, it was found that only 17.8% of those women were educated to more than the secondary level; this was related to the targeted age group for this study; therefore, improving the opportunities of cultural and work empowerment is recommended for upcoming female generations.
- Raising awareness towards the complications of early marriage and early pregnancy, where it was found in this study that 63% of the participants were 14-21 years old at their first pregnancy.
- Raising awareness about the required interval between pregnancies, and encouraging family planning is recommended as we found that 49.8% of the participating women have 6-10 children, and 7.5% have 11-15 children.

- Taking pregnancy complications into consideration, where 13.8% in the present study suffered from some type of pregnancy complications.
- Drawing attention towards premature births and abortion cases is highly recommended by following the required analyses in case of development of any of these cases to be avoided in the future; where it was found that (11.8%), and (9.5%) experienced one premature birth, and more than one respectively. Moreover, (42%) experienced one or two abortions, and (13.8%) experienced more than 2 abortions respectively indicating high percentages of abortions.
- Establishing awareness programs that shed light on negative health outcomes of obesity; obesity indicators showed a high percentage of obese and overweight women.
- Highlighting the benefits and necessity of physical activity among women before and after menopause; where the percentage of women practicing physical activity daily was (19.5%), and (15.5%) for weekly practice.
- Highlighting the benefits of fruits and vegetables consumption; where we found that (53.8%) of women consume only one serving of vegetables daily, (53%) of women consume only one serving of fruits, and (10.5%) of them do not consume any serving of fruits; however, the recommended number of servings of fruits consumption daily is five.
- Offering general lifestyle recommendations regarding diet types, number of meals, and patterns; physical exercises are required for this category of women. Moreover, increasing awareness towards the negative impacts of tobacco and water-pipe consumption is recommended; although the percentage of smoking among the study participants was very low. However, that's important in terms of keeping this percentage to be further lower in the future and for the coming generations.
- Establishing biochemistry laboratory measurements is required periodically for women before and after menopause, where it was found that there is a big number of women who did not take some biochemistry tests through the previous year.
- Increasing the awareness towards menopause and hormone RT knowledge is highly recommended, through different programs and training campaigns, where the knowledge score towards menopause was (59.8%), and only (15.8%) of the participants have heard about hormone RT.

- Empowering women through their premenopausal and perimenopausal periods is required to positively enhance their attitude towards menopause, where we found that attitude score was (60.3%).
- Training women to do more healthy practices during their climacteric phase is highly recommended to avoid unrequired bad health outcomes; this study showed that excercises mean score towards menopause was only (44.9%) indicating low healthy practices among the participated women.
- The QoL score for the women was found to be (55.1%) showing the suffering from the different menopausal symptoms in different degrees; therefore facilitating the periodic follow up for menopausal women is strongly recommended from the different biological and psychological aspects.
- The different factors which were revealed by this study to be affecting on the menopausal age, knowledge, attitude, practice, and QoL should be taken into consideration in order to follow the correct dimensions of the women's health after menopause.
- Arrangements of awareness and training programs for women could be helpful to be carried out in the PHCs.

5.2.2 Recommendations for future studies

- More detailed studies concerning the different parts of this study are recommended, where this study revealed the major picture of this topic.
- Qualitatively in-depth based measures are required for deep understanding of the women's perspectives about menopause.
- Studying the menopausal perspectives among women in wider geographic distribution for the different regions of Palestine, such as a study containing participants from the WB and GGs is recommended.
- Participating in menopausal studies in the different areas including the Arab world and the Western world is suggested to build helpful comparisons based on the geographic residency of menopausal women in order to have the capacities for more improvements and empowerment for women.

References

Abalos, E., Cuesta, C., Carroli, G., Qureshi, Z., Widmer, M., Vogel, J., & Souza, J. (2014). Preeclampsia, eclampsia and adverse maternal and perinatal outcomes: a secondary analysis of the World Health Organization Multicountry Survey on Maternal and Newborn Health. *BJOG: An International Journal of Obstetrics & Gynaecology*, *121*, 14-24.

Abbas, S., Linseisen, J., Slanger, T., Kropp, S., Mutschelknauss, E., Flesch-Janys, D., & Chang-Claude, J. (2007). Serum 25-hydroxyvitamin D and risk of post-menopausal breast cancer—results of a large case–control study. *Carcinogenesis*, *29*(1), 93-99.

Abd-Alhameed, I., Saba, E., & Darwish, M. (2010). Prevalence and awareness of osteoporosis among postmenopausal Palestinian women. *Archives of Osteoporosis*, *5*(2), 111-118.

AbdulHalim, F., Mehras, A., Assabri, A., Alkobaty, M., & Albourhi, A. (2018). Menopause among Yemen Women. *Advances in Aging Research*, *7*(04), 65.

Abdul Rahim, H., Husseini, A., Giacaman, R., Jervell, J., & Bjertness, E. (2001). Diabetes mellitus in an urban Palestinian population: prevalence and associated factors.

Abed, Y., El Kishawi, R., Soo, K., & Muda, W. A. (2014). Obesity and overweight: prevalence and associated socio demographic factors among mothers in three different areas in the Gaza Strip-Palestine: a cross-sectional study. *BMC obesity*, *1*(1), 7.

Abou-Raya, S., Sadek, S., AbelBaqy, M., ElSharkawy, O., Bakr, L., Ismail, K., & Abou-Raya, A. (2016). Relationship between sociodemographic, reproductive, and lifestyle factors and the severity of menopausal symptoms among Egyptian women in Alexandria. *Menopause*, *23*(8), 888-893.

Abramson, J., Jurkovitz, C., Vaccarino, V., Weintraub, W., & Mcclellan, W. (2003). Chronic kidney disease, anemia, and incident stroke in a middle-aged, community-based population: the ARIC Study. *Kidney international*, *64*(2), 610-615.

Abuelaish, B. (2018). Urban Land Use Change Analysis and Modeling: A Case Study of the Gaza Strip. In *Geomatic Approaches for Modeling Land Change Scenarios* (pp. 271-291). Springer, Cham

Abu-Hamad B., Courbage Y., & Zagha A. (2016). *Palestine 2030 Demographic Change: Opportunities for Development*. Palestine: Prime Minister's Office – State of Palestine, United Nations Population Fund: UNFPA.

Abu-Mugesieb, R. (2007). Risk factors associated with Helicobacter pylori infection in Gaza, Palestine. *Risk Factors Associated with Helicobacter pylori Infection in Gaza, Palestine*.

Abu Shomar, R., Lubbad, I., El Ansari, W., Khatib, I., & Alharazin, H. (2014). Smoking, awareness of smoking-associated health risks, and knowledge of national tobacco legislation in Gaza, Palestine.

Afana, A., Dalgard, O., Bjertness, E., Grunfeld, B., & Hauff, E. (2002). The Prevalence and Associated Socio- demographic Variables of Post- traumatic Stress Disorder among Patients attending Primary Health Care Centres in the Gaza Strip. *Journal of Refugee Studies*, *15*(3), 283-295.

Afridi, I. (2017). Psychological and Social Aspects of Menopause. In *A Multidisciplinary Look at Menopause*. InTech. pp, 50-59. Accessed on 23 February, 2018: https://www.intechopen.com/books/a-multidisciplinary-look-at-menopause/psychological-and-social-aspects-of-menopause. DOI: 10.5772/intechopen.69078.

Ahmed, A., Joakimsen, M., Berntsen, K., Fønnebø, V., & Schirmer, H. (2006). Diabetes mellitus and the risk of non-vertebral fractures: the Tromsø study. *Osteoporosis International*, *17*(4), 495-500.

Ahmed, A., Mohamed, A., Guled, I., Elamin, H., & Abou-Zeid, A. (2014). Knowledge translation in Africa for 21st century integrative biology: The "know-do gap" in family planning with contraceptive use among Somali women. *Omics: a journal of integrative biology*, *18*(11), 696-704.

Akl, C., Akik, C., Ghattas, H., & Obermeyer, C. (2017). Gender disparities in midlife hypertension: a review of the evidence on the Arab region. *Women's Midlife Health*, *3*(1), 1.

Akl, E., Gunukula, S., Aleem, S., Obeid, R., Jaoude, P., Honeine, R., & Irani, J. (2011). The prevalence of waterpipe tobacco smoking among the general and specific populations: a systematic review. *BMC public health*, *11*(1), 244.

Aktaş, D. (2015). Prevalence and factors affecting dysmenorrhea in female university students: effect on general comfort level. *Pain Management Nursing*, *16*(4), 534-543.

Al-Hindi, A., Al-Helou, T., & Al-Helou, Y. (2010). Seroprevalence of Toxoplasma gondii, cytomegalovirus, rubella virus and Chlamydia trachomatis among infertile women attending in vitro fertilization center, Gaza strip, Palestine. *Journal of the Egyptian Society of Parasitology*, *40*(2), 451-458.

Al-Kadri, H., Al-Awami, S., & Madkhali, A. (2004). Assessment of risk factors of uterine cancer in Saudi patients with postmenopausal bleeding. *Saudi medical journal*, *25*(7), 857-861.

Al-Olayet, A., Al-Qahtani, I., Al-Essa, D., Al-Saleek, F., Al-Moutary, R., Al-Mudimeg, L., ... & Al-Shemari, S. S. (2010). Severity of menopausal symptoms, and knowledge attitude and practices towards menopause among Saudi women. *Scientific Research and Essays*, *5*(24), 4077-4079.

Al Shahrani, A., El-Metwally, A., Al-Surimi, K., Salih, S., Saleh, Y., Al-Shehri, A., & Ali, A. (2016). The epidemiology of thyroid diseases in the Arab world: A systematic review. *Journal of Public health and Epidemiology*, *8*(2), 17-26.

Aljefree, N., & Ahmed, F. (2015). Prevalence of cardiovascular disease and associated risk factors among adult population in the Gulf region: a systematic review. *Advances in Public Health*, *2015*.

Al Sallout, R., & Sharif, F. (2010). Polymorphisms in NOS3, ACE and PAI-1genes and risk of spontaneous recurrent miscarriage in the Gaza Strip. *Medical Principles and Practice*, *19*(2), 99-104.

AlKasseh, A. S., Zaki, N., Aljeesh, Y., & Soon, L. (2013). Risk factors of gestational diabetes mellitus in the refugee population in Gaza Strip: a case--control study. *Risk factors of gestational diabetes mellitus in the refugee population in Gaza Strip: a case--control study.*, *19*.

Al-Krenawi, A., Lev-Wiesel, R., & Sehwail, A. (2007). Psychological symptomatology among Palestinian male and female adolescents living under political violence 2004–2005. *Community Mental Health Journal*, *43*(1), 49-56.

Al-Sahab, B., Hamadeh, M., Ardern, C., & Tamim, H. (2010). Early menarche predicts incidence of asthma in early adulthood. *American Journal of Epidemiology*, *173*(1), 64-70.

Al-Sejari, M. (2005). *Age at natural menopause and menopausal symptoms among Saudi Arabian women in Al-Khobar* (Doctoral dissertation, The Ohio State University).

Altaweel, W., & Alharbi, M. (2012). Urinary incontinence: prevalence, risk factors, and impact on health related quality of life in Saudi women. *Neurourology and urodynamics*, *31*(5), 642-645.

Altermatt, R., & Pomerantz, M. (2003). The development of competence-related and motivational beliefs: An investigation of similarity and influence among friends. *Journal of Educational Psychology*, *95*(1), 111-120.

Anan, H. (2010). Clients Centeredness of the Governmental Primary Health Care Services: Gaza Governorates (Master's dissertation, Al-Quds University), Palestine.

André, F. (2000). Hepatitis B epidemiology in Asia, the middle East and Africa. *Vaccine*, *18*, S20-S22.

Arab, M., Khayamzadeh, M., Tehranian, A., Tabatabaeefar, M., Hosseini, M., Anbiaee, R., ... & Akbari, M. E. (2010). Incidence rate of ovarian cancer in Iran in comparison with developed countries. *Indian journal of cancer*, *47*(3), 322.

ARABIA, S. (2017). The level of visual and musculoskeletal disorders among office workers in palestine.

Astrup, A. (1999). Physical activity and weight gain and fat distribution changes with menopause: current evidence and research issues. *Medicine and science in sports and exercise*, *31*(11 Suppl), S564-7.

Atsma, F., Bartelink, M., Grobbee, D., & van der Schouw, Y. (2006). Postmenopausal status and early menopause as independent risk factors for cardiovascular disease: a meta-analysis. *Menopause*, *13*(2), 265-279.

Attaallah, H. (2018, June). Modeling of built-up lands expansion in Gaza Strip, Palestine using Landsat data and CA-Markov model. In *IOP Conference Series: Earth and Environmental Science* (Vol. 169, No. 1, p. 012035). IOP Publishing.

Avis, E., & McKinlay, M. (1991). A longitudinal analysis of women's attitudes toward the menopause: results from the Massachusetts Women's Health Study. *Maturitas, 13*(1), 65-79.

Aydin, D. (2010). Determinants of age at natural menopause in the Isparta Menopause and Health Study: premenopausal body mass index gain rate and episodic weight loss. *Menopause*, *17*(3), 494-505.

Ayers, B., Forshaw, M., & Hunter, S. (2010). The impact of attitudes towards the menopause on women's symptom experience: a systematic review. *Maturitas, 65*(1), 28-36.

Azizi, M., Fooladi, E., Masoumi, M., Orimi, T., Elyasi, F., & Davis, S. (2018). Depressive symptoms and their risk factors in midlife women in the Middle East: a systematic review. *Climacteric*, *21*(1), 13-21.

Badran, M., & Laher, I. (2012). Type II diabetes mellitus in Arabic-speaking countries. *International journal of endocrinology, 2012.*

Bahri, N., Latifnejad Roudsari, R., Tohidinik, H., & Sadeghi, R. (2016). Attitudes towards menopause among Iranian women: A systematic review and meta-analysis. *Iran Red Crescent Med J*, *18*(10), e31012.

Baik, S., Strauss, M., Speizer, E., & Feskanich, D. (2010). Reproductive factors, hormone use and risk of lung cancer in postmenopausal women, the Nurses' Health Study. *Cancer Epidemiology and Prevention Biomarkers*, cebp-0450, 1220(19), 2525-2533.

Barnard, D., Scialli, R., Turner-McGrievy, G., Lanou, J., & Glass, J. (2005). The effects of a low-fat, plant-based dietary intervention on body weight, metabolism, and insulin sensitivity. *The American Journal of Medicine*, *118*(9), 991-997.

Bates, K., Leone, T., Ghandour, R., Mitwalli, S., Nasr, S., Coast, E., & Giacaman, R. (2017). Women's health in the occupied Palestinian territories: Contextual influences on subjective and objective health measures. *PloS one*, *12*(10), e0186610.

Bello, F., & Daramola, O. (2016). Attitude to the menopause and sex amongst middle-aged women in a family medicine clinic in Ibadan, Nigeria. *Obstetrics and Gynecology International*, *2016*(2), 1-5.

Benamer, H., Deleu, D., & Grosset, D. (2010). Epidemiology of headache in Arab countries. *The journal of headache and pain*, *11*(1), 1.

Benamer, H., & Grosset, D. (2009). Stroke in Arab countries: a systematic literature review. *Journal of the neurological sciences*, *284*(1-2), 18-23.

Bener, A., Ghuloum, S., & Abou-Saleh, M. (2012). Prevalence, symptom patterns and comorbidity of anxiety and depressive disorders in primary care in Qatar. *Social psychiatry and psychiatric epidemiology*, *47*(3), 439-446.

Bhavnani, R., & Strickler, C. (2005). Menopausal Hormone Therapy. *Journal of Obstetrics and Gynaecology Canada*, *27*(2), 137-162.

Bhutani, J., Kalra, S., Bhutani, S., & Kalra, B. (2013). Hypoglycemia perception: Cross-cultural differences in Punjabi and Hindi speaking postmenopausal women. *Indian Journal of Endocrinology and Metabolism*, *17*(Suppl1), S286.

Bittar, T., de Macêdo, O., Neto, P., da Silva, G., Pfeiffer, A., Padilha, A., ... & Cirilo-Sousa, M. (2017). The Benefits of Physical Activity on Climacteric Women. In *A Multidisciplinary Look at Menopause*. InTech, pp, 112-121. Accessed on 24 February, 2018: https://www.intechopen.com/books/a-multidisciplinary-look-at-

menopause/the-benefits-of-physical-activity-on-climacteric-women. DOI: 10.5772/intechopen.68829.

Boardman, M., Hartley, L., Eisinga, A., Main, C., Roqué M., Bonfill, X., ... & Knight, B. (2015). Hormone therapy for preventing cardiovascular disease in post- menopausal women. *The Cochrane Library*. DOI: 10.1002/14651858.CD002229.pub4.

Boutayeb, A., Lamlili, M., Boutayeb, W., Maamri, A., Ziyyat, A., & Ramdani, N. (2012). The rise of diabetes prevalence in the Arab region. *Open Journal of Epidemiology*, *2*(02), 55.

Burnham, M., Shults, J., Weinstein, R., Lewis, D., & Leonard, B. (2006). Childhood onset arthritis is associated with an increased risk of fracture: a population based study using the General Practice Research Database. *Annals of the Rheumatic Diseases*, *65*(8), 1074-1079.

Canetti, D., Galea, S., Hall, B., Johnson, R., Palmieri, P., & Hobfoll, S. (2010). Exposure to prolonged socio-political conflict and the risk of PTSD and depression among Palestinians. *Psychiatry: Interpersonal and Biological Processes*, *73*(3), 219-231.

Canonico, M., Plu-Bureau, G., O'Sullivan, J., Stefanick, L., Cochrane, B., Scarabin, Y., & Manson, E. (2014). Age at menopause, reproductive history and venous thromboembolism risk among postmenopausal women: The Women's Health Initiative Hormone Therapy clinical trials. *Menopause (New York, NY)*, *21*(3), 214.

Carolan, M., Davey, M., Biro, M., & Kealy, M. (2012). Maternal age, ethnicity and gestational diabetes mellitus. *Midwifery*, *28*(6), 778-783.

Carter, M. (2001). Depression and emotional aspects of the menopause. *British Columbia Medical Journal*, *43*(8), 463-467.

Cauley, J., Greendale, G., Ruppert, K., Lian, Y., Randolph, J., Lo, J., ... & Finkelstein, J. (2015). Serum 25 hydroxyvitamin D, bone mineral density and fracture risk across the menopause. *The Journal of Clinical Endocrinology & Metabolism*, *100*(5), 2046-2054.

Cavadas, L., Nunes, A., Pinheiro, M., & Silva, P. (2010). Management of menopause in primary health care. *Acta Medica Portuguesa*, *23*(2), 227-36.

Chao, T., Wade, C., Kronenberg, F., Kalmuss, D., & Cushman, F. (2006). Women's reasons for complementary and alternative medicine use: racial/ethnic differences. *Journal of Alternative & Complementary Medicine*, *12*(8), 719-720.

Chen, Y., Xiang, J., Wang, Z., Xiao, Y., Zhang, D., Chen, X., ... & Zhang, Q. (2015). Associations of bone mineral density with lean mass, fat mass, and dietary patterns in postmenopausal Chinese women: a 2-year prospective study. *PloS one*, *10*(9), e0137097.

Chen, Y., Chien-Chang Wu, K., Yousuf, S., & Yip, P. (2011). Suicide in Asia: opportunities and challenges. *Epidemiologic reviews*, *34*(1), 129-144.

CIA, U. (2016). Central Intelligence Agency-The World Factbook. *New Zealand*.

Chernoff, R. (2001). Nutrition and health promotion in older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *56*(suppl_2), 47-53.

Ceylan, B., & Özerdoğan, N. (2014). Menopausal symptoms and quality of life in Turkish women in the climacteric period. *Climacteric*, *17*(6), 705-712.

Chiou, M., & Wang, H. (2008). Predictors of dysmenorrhea and self-care behavior among vocational nursing school female students. *Journal of Nursing Research*, *16*(1), 17-25.

Cody, D., Jacobs, L., Richardson, K., Moehrer, B., & Hextall, A. (2012). Oestrogen therapy for urinary incontinence in post- menopausal women. *The Cochrane Library*. DOI: 10.1002/14651858.CD001405.pub3.

Cohen, S., Soares, N., Vitonis, F., Otto, W., & Harlow, L. (2006). Risk for new onset of depression during the menopausal transition: the Harvard study of moods and cycles. *Archives of General Psychiatry*, *63*(4), 385-390.

Colli, C., Bracht, A., Soares, A., de Oliveira, L., Bôer, G., de Souza, M., & Peralta, M. (2012). Evaluation of the efficacy of flaxseed meal and flaxseed extract in reducing menopausal symptoms. *Journal of Medicinal Food*, *15*(9), 840-845.

Daley, A., Stokes-Lampard, H., & MacArthur, C. (2011). Exercise for vasomotor menopausal symptoms. *Cochrane Database Syst Rev*, *5*. DOI: 10.1002/14651858.CD006108.pub3.

Daley, A., Stokes- Lampard, H., Thomas, A., & MacArthur, C. (2014). Exercise for vasomotor menopausal symptoms. *The Cochrane Library*. DOI: 10.1002/14651858.CD006108.pub4.

Dambhare, D., Wagh, S., & Dudhe, J. (2012). Age at menarche and menstrual cycle pattern among school adolescent girls in Central India. *Global journal of health science*, *4*(1), 105.

Danforth, K., Townsend, M., Lifford, K., Curhan, G., Resnick, N., & Grodstein, F. (2006). Risk factors for urinary incontinence among middle-aged women. *American journal of obstetrics and gynecology*, *194*(2), 339-345.

Davis, S., Castelo-Branco, C., Chedraui, P., Lumsden, M., Nappi, R., Shah, D., ... & Writing Group of the International Menopause Society for World Menopause Day 2012. (2012). Understanding weight gain at menopause. *Climacteric*, *15*(5), 419-429.

De, P., Jiménez, A., Alvarado, M., Jiménez, P., & Inchausti, F. (2007). Menopause and physical activity. *Revista de enfermeria (Barcelona, Spain)*, *30*(3), 42-46.

De Kleijn, M., van der Schouw, Y., Wilson, P., Grobbee, D., & Jacques, P. (2002). Dietary intake of phytoestrogens is associated with a favorable metabolic cardiovascular risk profile in postmenopausal US women: the Framingham study. *The Journal of nutrition*, *132*(2), 276-282.

De Marco, R., Pesce, G., Marcon, A., Accordini, S., Antonicelli, L., Bugiani, M., ... & Pirina, P. (2013). The coexistence of asthma and chronic obstructive pulmonary disease (COPD): prevalence and risk factors in young, middle-aged and elderly people from the general population. *PloS one*, *8*(5), e62985.

Demir, B., Haberal, A., Geyik, P., Baskan, B., Ozturkoglu, E., Karacay, O., & Deveci, S. (2008). Identification of the risk factors for osteoporosis among postmenopausal women. *Maturitas*, *60*(3), 253-256.

Dennerstein, L., Lehert, P., Guthrie, R., & Burger, G. (2007). Modeling women's health during the menopausal transition: a longitudinal analysis. *Menopause*, *14*(1), 53-62.

Derakhshi, B., Esmailnasab, N., Ghaderi, E., & Hemmatpour, S. (2014). Risk factor of preterm labor in the west of iran: a case-control study. *Iranian journal of public health*, *43*(4), 499.

Derawi, A., & Alabed, S. (2009). Anti Thyroid Antibodies Among Palestinian Women Suffering from Recurrent Abortion in Gaza Strip. *Anti Thyroid Antibodies Among Palestinian Women Suffering from Recurrent Abortion in Gaza Strip*.

Di Prospero, F., Luzi, S., & Iacopini, Z. (2004). Cigarette smoking damages women's reproductive life. *Reproductive Biomedicine Online*, *8*(2), 246-247.

Dodin, S., Asselin, G., Blanchet, C., Thiebaut, C., Gravel, K., Marc, I., ... & Wu, T. (2008). Acupuncture for menopausal hot flushes. *Cochrane Database Syst Rev*, *4*. DOI: 10.1002/14651858.CD007410.

Donati, S., Hamam, R., & Medda, E. (2000). Family planning KAP survey in Gaza. *Social science & medicine*, *50*(6), 841.

Donato, G., Fuchs, S., Oppermann, K., Bastos, C., & Spritzer, P. (2006). Association between menopause status and central adiposity measured at different cutoffs of waist circumference and waist-to-hip ratio. *Menopause*, *13*(2), 280-285.

Dormire, S., & Howharn, C. (2007). The effect of dietary intake on hot flashes in menopausal women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, *36*(3), 255-262.

Dreisler, E., Sorensen, S., Ibsen, P., & Lose, G. (2009). Prevalence of endometrial polyps and abnormal uterine bleeding in a Danish population aged 20–74 years. *Ultrasound in Obstetrics and Gynecology*, *33*(1), 102-108.

Duffy, O., Iversen, L., & Hannaford, P. (2011). The menopause 'It's somewhere between a taboo and a joke'. A focus group study. *Climacteric*, *14*(4), 497-505.

Dunneram, Y., Greenwood, D., Burley, V., & Cade, J. (2018). Dietary intake and age at natural menopause: results from the UK Women's Cohort Study. *J Epidemiol Community Health*, jech-2017.

Ebong, A., Watson, E., Goff, C., Bluemke, A., Srikanthan, P., Horwich, T., & Bertoni, G. (2014). Age at menopause and incident heart failure: the Multi-Ethnic Study of Atherosclerosis. *Menopause (New York, NY)*, *21*(6), 585-591.

Edition, F. (2013). *Diagnostic and Statistical Manual of Mental Disorders*. American Psychiatric Publishing, Arlington, VA.

Eichling, P., & Sahni, J. (2005). Menopause related sleep disorders. *Journal of Clinical Sleep Medicine*, *1*(03), 291-300.

Elavsky, S. (2009). Physical activity, menopause, and quality of life: the role of affect and self-worth across time. *Menopause (New York, NY)*, *16*(2), 265-270.

Elavsky, S., & McAuley, E. (2005). Physical activity, symptoms, esteem, and life satisfaction during menopause. *Maturitas*, *52*(3), 374-385.

Elavsky, S., & McAuley, E. (2007). Physical activity and mental health outcomes during menopause: a randomized controlled trial. *Annals of Behavioral Medicine*, *33*(2), 132-142.

Elias, G., van Noord, A., Peeters, H., den Tonkelaar, I., & Grobbee, E. (2003). Caloric restriction reduces age at menopause: the effect of the 1944–1945 Dutch famine. *Menopause*, *10*(5), 399-405.

El Bilbeisi, A., Hosseini, S., & Djafarian, K. (2018). Prevalence of Metabolic Syndrome and its Components Using Two Proposed Criteria among Patients with Type 2 Diabetes in Gaza Strip, Palestine. *BAOJ Nutrition*, *4*, 054.

El-Kharoubi, A. (2004). Sleep disorders and excessive daytime sleepiness in the Palestinian population. *Neurosciences (Riyadh, Saudi Arabia)*, *9*(1), 46-48.

El Khawaja, M. (2003). The Fertility of Palestinian Women in Gaza, the West Bank, Jordan and Lebanon. *Population*, *58*(3), 273-302

El-Khwsky, F., Maghraby, H., Rostom, Y., & Abd El-Rahman, A. (2006). Multivariate analysis of reproductive risk factors for ovarian cancer in Alexandria, Egypt. *J Egypt Natl Canc Inst*, *18*(1), 30-34.

Eloul, L., Ambusaidi, A., & Al-Adawi, S. (2009). Silent epidemic of depression in women in the Middle East and North Africa Region: Emerging tribulation or fallacy?. *Sultan Qaboos university medical journal*, *9*(1), 5.

El Rhazi, K., Nejjari, C., Zidouh, A., Bakkali, R., Berraho, M., & Gateau, P. (2011). Prevalence of obesity and associated sociodemographic and lifestyle factors in Morocco. *Public health nutrition*, *14*(1), 160-167.

El Saghir, N., Khalil, M., Eid, T., El Kinge, A., Charafeddine, M., Geara, F., ... & Shamseddine, A. (2007). Trends in epidemiology and management of breast cancer in developing Arab countries: a literature and registry analysis. *International journal of surgery*, *5*(4), 225-233.

El-Sakka, M., Jabal, E. M., & Nasser, L. (2013). The role of Helicobacter pylori infection, and malnutrition among type 2 diabetic medical services patients in the Gaza Strip. *International Journal of Clinical Medicine*, *4*(12), 556.

El Shafie, K., Al Farsi, Y., Al Zadjali, N., Al Adawi, S., Al Busaidi, Z., & Al Shafaee, M. (2011). Menopausal symptoms among healthy, middle-aged Omani women as assessed with the Menopause Rating Scale. *Menopause*, *18*(10), 1113-1119.

Emara, A., Beshay, M., & Gado, M. (2018). The demographic profile, clinical presentation & angiographic prevalence and pattern of coronary artery disease in women undergoing coronary angiography. *Zagazig University Medical Journal*, *24*(5).

Emaus, A., Dieli-Conwright, C., Xu, X., Lacey, V., Ingles, A., Reynolds, P., ... & Henderson, D. (2013). Increased long-term recreational physical activity is associated with older age at natural menopause among heavy smokers: the California Teachers Study. *Menopause (New York, NY)*, *20*(3), 282-290.

Erbil, N., & Gümüşay, M. (2018). Relationship Between Perceived Social Support and Attitudes Towards Menopause among Women and Affecting Factors. *Middle Black Sea Journal of Health Science*, *4*(2), 7-18.

Eskelinen, M., Ngandu, T., Tuomilehto, J., Soininen, H., & Kivipelto, M. (2009). Midlife coffee and tea drinking and the risk of late-life dementia: a population-based CAIDE study. *Journal of Alzheimer's Disease*, *16*(1), 85-91.

Estrada-Camarena, E., López-Rubalcava, C., Valdés-Sustaita, B., Azpilcueta-Morales, S., & González-Trujano, M. (2017). Use of Phytoestrogens for the Treatment of Psychiatric Symptoms Associated with Menopause Transition. In *A Multidisciplinary Look at Menopause*. InTech, pp, 82-97. Accessed on 1 March, 2018: https://www.intechopen.com/books/a-multidisciplinary-look-at-menopause/use-of-phytoestrogens-for-the-treatment-of-psychiatric-symptoms-associated-with-menopause-transition. DOI: 10.5772/intechopen.69541.

Faber, A., & van den Berg, P. B. (2006). HRT use in 2001 and 2004 in The Netherlands—a world of difference. *Maturitas*, *54*(2), 193-197.

Fabres, C., Arriagada, P., Fernández, C., MacKenna, A., Zegers, F., & Fernández, E. (2005). Surgical treatment and follow-up of women with intermenstrual bleeding due to cesarean section scar defect. *Journal of minimally invasive gynecology*, *12*(1), 25-28.

Fadl, H., & Simmons, D. (2016). Trends in diabetes in pregnancy in Sweden 1998–2012. *BMJ Open Diabetes Research and Care*, *4*(1), e000221.

Fraser, I., Critchley, H., Broder, M., & Munro, M. (2011, September). The FIGO recommendations on terminologies and definitions for normal and abnormal uterine bleeding. In *Seminars in reproductive medicine* (Vol. 29, No. 5, p. 383).

Freeman, W., & Sherif, K. (2007). Prevalence of hot flushes and night sweats around the world: a systematic review. *Climacteric*, *10*(3), 197-214.

Freeman, E. (2010). Associations of depression with the transition to menopause. *Menopause*, *17*(4), 823-827.

Freedman, R., & Roehrs, T. (2007). Sleep disturbance in menopause. *Menopause*, *14*(5), 826-829.

Freedman, D., Lacey, V., Hollenbeck, R., Leitzmann, F., Schatzkin, A., & Abnet, C. (2010). The association of menstrual and reproductive factors with upper gastrointestinal tract cancers in the NIH- AARP cohort. *Cancer*, *116*(6), 1572-1581.

Furness, S., Roberts, H., Marjoribanks, J., & Lethaby, A. (2012). Hormone therapy in postmenopausal women and risk of endometrial hyperplasia. *The Cochrane Library*. DOI: 10.1002/14651858.CD000402.pub4.

Gaete, X., Vivanco, M., Eyzaguirre, F., López, P., Rhumie, H., Unanue, N., & Codner, E. (2010). Menstrual cycle irregularities and their relationship with HbA1c and insulin dose in adolescents with type 1 diabetes mellitus. *Fertility and sterility*, *94*(5), 1822-1826.

Gallagher, J. (2007). Effect of early menopause on bone mineral density and fractures. *Menopause*, *14*(3), 567-571.

García-Ríos, I., Mora-Pérez, A., & Soria-Fregozo, C. (2017). Depression and Serotonergic Changes during the Climacteric and Postmenopausal Stages: Hormonal Influences. In *A Multidisciplinary Look at Menopause*. InTech, pp, 64-74. Accessed on 3 March, 2018: https://www.intechopen.com/books/a-multidisciplinary-look-at-menopause/depression-and-serotonergic-changes-during-the-climacteric-and-postmenopausal-stages-hormonal-influe. DOI: 10.5772/intechopen.69786.

Gerber, L. M., Mamtani, R., Chiu, Y. L., Bener, A., Murphy, M., Cheema, S., & Verjee, M. (2014). Use of complementary and alternative medicine among midlife Arab women living in Qatar. *Eastern Mediterranean health journal= La revue de sante de la Mediterranee orientale= al-Majallah al-sihhiyah li-sharq al-mutawassit*, *20*(9), 554.

Geukes, M., Van Aalst, M., Robroek, S., Laven, J., & Oosterhof, H. (2016). The impact of menopause on work ability in women with severe menopausal symptoms. *Maturitas*, *90*(5), 3-8.

Ghafouri, A., Alnaimi, R., Alhothi, M., Alroubi, I., Alrayashi, M., Molhim, A., & Shokeir, A. (2014). Urinary incontinence in Qatar: A study of the prevalence, risk factors and impact on quality of life. *Arab Journal of Urology*, *12*(4), 269-274.

Gharaibeh, M., Al-Obeisat, S., & Hattab, J. (2010). Severity of menopausal symptoms of Jordanian women. *Climacteric*, *13*(4), 385-394.

Ghazanfarpour, M., Kaviani, M., Abdolahian, S., Bonakchi, H., Najmabadi Khadijeh, M., Naghavi, M., & Khadivzadeh, T. (2015). The relationship between women's attitude towards menopause and menopausal symptoms among postmenopausal women. *Gynecological Endocrinology*, *31*(11), 860-865.

Giacaman, R., Abu-Rmeileh, N., Mataria, A., & Wick, L. (2008). Palestinian women's pregnancy intentions: analysis and critique of the Demographic and Health Survey 2004. *Health Policy*, *85*(1), 83-93.

Giacaman, R., Abdul-Rahim, H., & Wick, L. (2003). Health sector reform in the Occupied Palestinian Territories (OPT): targeting the forest or the trees?. *Health Policy and Planning*, *18*(1), 59-67.

Gold, B., Sternfeld, B., Kelsey, L., Brown, C., Mouton, C., Reame, N., ... & Stellato, R. (2000). Relation of demographic and lifestyle factors to symptoms in a multi-racial/ethnic population of women 40–55 years of age. *American Journal of Epidemiology*, *152*(5), 463-473.

Goluch-Koniuszy, S. (2016). Nutrition of women with hair loss problem during the period of menopause. *Przeglad Menopauzalny. Menopause Review*, *15*(1), 56-61.

Gordon, L., Girdler, S., Meltzer-Brody, E., Stika, S., Thurston, C., Clark, T., ... & Wisner, L. (2015). Ovarian hormone fluctuation, neurosteroids, and HPA axis dysregulation in perimenopausal depression: a novel heuristic model. *American Journal of Psychiatry*, *172*(3), 227-236.

Grady, D., Herrington, D., Bittner, V., Blumenthal, R., Davidson, M., Hlatky, M., ... & Newby, K. (2002). Cardiovascular disease outcomes during 6.8 years of hormone

therapy: Heart and Estrogen/progestin Replacement Study follow-up (HERS II). *Jama*, *288*(1), 49-57.

Greenwood, J., & Levin, M. (2006). *Introduction to action research: Social Research for Social Change*. SAGE publications, pp, 2-27.

Gudmundsdottir, L., Flanders, D., & Augestad, B. (2012). Physical activity and age at menopause: the Nord-Trøndelag population-based health study. *Climacteric*, *16*(1), 78-87.

Guise, J., McDonagh, M., Osterweil, P., Nygren, P., Chan, B., & Helfand, M. (2004). Systematic review of the incidence and consequences of uterine rupture in women with previous caesarean section. *Bmj*, *329*(7456), 19.

Gunaid, A. (2002). Prevalence of known diabetes and hypertension in the Republic of Yemen.

Hamid, S., Al-Ghufli, F., Raeesi, H., Al-Dhufairi, K., Al-Dhaheri, N., Al-Maskari, F., ... & Shah, S. (2014). Women's knowledge, attitude and practice towards menopause and hormone replacement therapy: a facility based study in Al-Ain, United Arab Emirates. *Journal of Ayub Medical College Abbottabad*, *26*(4), 448-54.

Hammoudeh, D., Coast, E., Lewis, D., van der Meulen, Y., Leone, T., & Giacaman, R. (2017). Age of despair or age of hope? Palestinian women's perspectives on midlife health. *Social Science & Medicine*, *184*(7), 108-115.

Hammoudeh, W. (2014). Addressing family planning delivery gaps in the Palestinian Territory. *Washington, DC: Population Reference Bureau.*

Hannestad, S., Rortveit, G., Sandvik, H., & Hunskaar, S. (2000). A community-based epidemiological survey of female urinary incontinence:: The Norwegian EPINCONT Study. *Journal of Clinical Epidemiology*, *53*(11), 1150-1157.

Hardy, R., & Kuh, D. (2002). Does early growth influence timing of the menopause? Evidence from a British birth cohort. *Human Reproduction*, *17*(9), 2474-2479.

Harlow, D., Gass, M., Hall, E., Lobo, R., Maki, P., Rebar, W., ... & STRAW+ 10 Collaborative Group. (2012). Executive summary of the Stages of Reproductive Aging Workshop+ 10: addressing the unfinished agenda of staging reproductive aging. *The Journal of Clinical Endocrinology & Metabolism*, *97*(4), 1159-1168.

Hegarty, V., May, H., & Khaw, K. (2000). Tea drinking and bone mineral density in older women–. *The American journal of clinical nutrition*, *71*(4), 1003-1007.

Heianza, Y., Arase, Y., Kodama, S., Hsieh, S., Tsuji, H., Saito, K., ... & Sone, H. (2013). Effect of postmenopausal status and age at menopause on type 2 diabetes and prediabetes in Japanese individuals: Toranomon Hospital Health Management Center Study 17 (TOPICS 17). *Diabetes Care*, DC_131048.

Heidari, B. (2011). Knee osteoarthritis prevalence, risk factors, pathogenesis and features: Part I. *Caspian journal of internal medicine*, *2*(2), 205.

Holmberg, A., Johnell, O., Nilsson, P., Nilsson, J., Berglund, G., & Åkesson, K. (2006). Risk factors for fragility fracture in middle age. A prospective population-based study of 33,000 men and women. *Osteoporosis international*, *17*(7), 1065-1077.

Hooton, T., Vecchio, M., Iroz, A., Tack, I., Dornic, Q., Seksek, I., & Lotan, Y. (2018). Effect of increased daily water intake in premenopausal women with recurrent urinary tract infections: a randomized clinical trial. *JAMA internal medicine*.

Hodsman, B., Hanley, A., & Josse, R. (2002). Do bisphosphonates reduce the risk of osteoporotic fractures? An evaluation of the evidence to date. *Canadian Medical Association Journal*, *166*(11), 1426-1430.

Hong, H., Kim, E., & Lee, J. (2013). Effects of calcium intake, milk and dairy product intake, and blood vitamin D level on osteoporosis risk in Korean adults: analysis of the 2008 and 2009 Korea National Health and Nutrition Examination Survey. *Nutrition research and practice*, *7*(5), 409-417.

Hong, S., Yi, W., Kang, C., Jee, H., Kang, G., Bayasgalan, G., & Ohrr, H. (2007). Age at menopause and cause-specific mortality in South Korean women: Kangwha Cohort Study. *Maturitas*, *56*(4), 411-419.

Hu, L., Zhu, L., Lyu, J., Zhu, W., Xu, Y., & Yang, L. (2017). Benefits of walking on menopausal symptoms and mental health outcomes among Chinese postmenopausal women. *International Journal of Gerontology*, *11*(3), 166-170.

Huang, K., Xu, L., Nasri, N., & Jaisamrarn, U. (2010). The Asian Menopause Survey: knowledge, perceptions, hormone treatment and sexual function. *Maturitas*, *65*(3), 276-283.

Hubacher, D., Chen, P., & Park, S. (2009). Side effects from the copper IUD: do they decrease over time?. *Contraception*, *79*(5), 356-362.

Hunskaar, S., Lose, G., Sykes, D., & Voss, S. (2004). The prevalence of urinary incontinence in women in four European countries. *BJU international*, *93*(3), 324-330.

Husseini, A. (2000). Prevalence of diabetes mellitus and impaired glucose tolerance in a rural Palestinian population.

Hwalla, N., & El Khoury, D. T. (2008). Lebanese traditional diets and health effects. In *Wild-type food in health promotion and disease prevention* (pp. 493-498).

Hyde, E., Inui, S., Kleinman, K., & Connelly, T. (2004). Differential association of modifiable health behaviors with hot flashes in perimenopausal and postmenopausal women. *Journal of General Internal Medicine*, *19*(7), 740-746.

Ibrahim, O., & Hussein, R. (2016). Knowledge, attitude, and prevalence of use of hormone replacement therapy among women in United Arab Emirates. *Asian J Pharm Clin Res*, *9*(3), 1-5.

Ibrahim, Z., Sayed Ahmed, W., & El-Hamid, S. (2015). Prevalence of menopausal related symptoms and their impact on quality of life among Egyptian women. *Clinical and Experimental Obstetrics and Gynecology*, *42*(2), 161-167.

Jaber, R., Khalifeh, S., Bunni, F., & Diriye, M. (2017). Patterns and severity of menopausal symptoms among Jordanian women. *Journal of women & aging*, *29*(5), 428-436.

Jack-Ide, I., Emelifeonwu, E., & Adika, A. (2014). Psychological effects and experiences of menopausal women in a rural community in Niger Delta region of Nigeria. *International Journal of Nursing and Midwifery*, *6*(6), 74-79.

Jacobs, S. (2000). Hormone replacement therapy and breast cancer. *Endocrine-Related Cancer*, *7*(1), 53-61.

Jaradat, N., Zaid, A., Al-Ramahi, R., Alqub, M., Hussein, F., Hamdan, Z., ... & Ali, I. (2017). Ethnopharmacological survey of medicinal plants practiced by traditional healers and herbalists for treatment of some urological diseases in the West Bank/Palestine.

Järvelaid, M. (2005). The effect of gynecologic age, body mass index and psychosocial environment on menstrual regularity among teenaged females. *Acta obstetricia et gynecologica Scandinavica*, *84*(7), 645-649.

Jassim, A., & Al-Shboul, Q. (2008). Attitudes of Bahraini women towards the menopause: implications for health care policy. *Maturitas*, *59*(4), 358-372.

Jassim, A., & Al-Shboul, Q. (2009). Knowledge of Bahraini women about the menopause and hormone therapy: implications for health-care policy. *Climacteric*, *12*(1), 38-48.

Jaspers, L., Daan, N., Van Dijk, G., Gazibara, T., Muka, T., Wen, X., ... & Laan, E. (2015). Health in middle-aged and elderly women: a conceptual framework for healthy menopause. *Maturitas*, *81*(1), 93-98.

Jenabi, E., Shobeiri, F., Hazavehei, M., & Roshanaei, G. (2015). Assessment of questionnaire measuring quality of life in menopausal women: a systematic review. *Oman Medical Journal*, *30*(3), 151-160.

Jeyasheela, K., Ebenezer, E., Londhe, V., Paul, T., Yadav, B., & Kekre, A. (2018). Prevalence of metabolic syndrome among postmenopausal women in South India. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, *7*(6), 2364-2370.

Jin, F., Tao, M., Teng, Y., Shao, H., Li, C., & Mills, E. (2015). Knowledge and attitude towards menopause and hormone replacement therapy in Chinese women. *Gynecologic and obstetric investigation*, *79*(1), 40-45.

Joakimsen, O., Bønaa, H., Stensland-Bugge, E., & Jacobsen, K. (2000). Population-based study of age at menopause and ultrasound assessed carotid atherosclerosis: The Tromsø Study. *Journal of Clinical Epidemiology*, *53*(5), 525-530.

Jones, K., Eller, L., Parnell, J., Doyle-Baker, P., Edwards, A., & Reimer, R. (2013). Effect of a dairy-and calcium-rich diet on weight loss and appetite during energy restriction in overweight and obese adults: a randomized trial. *European journal of clinical nutrition*, *67*(4), 371.

Ju, H., Jones, M., & Mishra, G. (2013). The prevalence and risk factors of dysmenorrhea. *Epidemiologic reviews*, *36*(1), 104-113.

Jung, H., & Kim, Y. (2004). Factors affecting dysmenorrhea among adolescents. *Korean Journal of Child Health Nursing*, *10*(2), 196-204.

Jung, J., Shin, A., & Kang, D. (2015). Hormone-related factors and post-menopausal onset depression: results from KNHANES (2010–2012). *Journal of Affective Disorders*, *175*(7), 176-183.

Kamal, N., & Seedhom, A. (2017). Quality of life among postmenopausal women in rural Minia, Egypt. *Eastern Mediterranean Health Journal*, *23*(8).

Kaur, K. (2014). Anaemia 'a silent killer'among women in India: Present scenario. *European Journal of Zoological Research*, *3*(1), 32-36.

Kemmler, W., Engelke, K., Von Stengel, S., Weineck, J., Lauber, D., & Kalender, W. (2007). Long-term four-year exercise has a positive effect on menopausal risk factors: the Erlangen Fitness Osteoporosis Prevention Study. *The Journal of Strength & Conditioning Research*, *21*(1), 232-239.

Khan, A. F., Chaudhri, R., Ashraf, M., Mazaffar, M., Zawar-ul-Imam, S., & Tanveer, M. (2013). Prevalence and presentation of chronic venous disease in Pakistan: a multicentre study. *Phlebology*, *28*(2), 74-79.

Khdour, M., Hallak, H., Shaeen, M., Jarab, A., & Al-Shahed, Q. (2013). Prevalence, awareness, treatment and control of hypertension in the Palestinian population. *Journal of human hypertension*, *27*(10), 623.

Khokhar, S. (2013). Knowledge, attitude and experience of menopause. *Pakistan Journal of Medical Research*, *52*(2), 42A.

Kurzer, S. (2008). Soy consumption for reduction of menopausal symptoms. *Inflammopharmacology*, *16*(5), 227-229.

Lakatta, G. (2003). Arterial and cardiac aging: major shareholders in cardiovascular disease enterprises: Part III: cellular and molecular clues to heart and arterial aging. *Circulation*, *107*(3), 490-497.

Lambe, M., Wigertz, A., Holmqvist, M., Adolfsson, J., Bardage, C., Fornander, T., ... & Bergkvist, L. (2010). Reductions in use of hormone replacement therapy: effects on Swedish breast cancer incidence trends only seen after several years. *Breast cancer research and treatment*, *121*(3), 679-683.

Landete, M. (2012). Plant and mammalian lignans: a review of source, intake, metabolism, intestinal bacteria and health. *Food Research International*, *46*(1), 410-424.

Lacroix, A. & Whitten, R. (2017). Menarche.

Lawlor, A., Ebrahim, S., & Smith, D. (2003). The association of socio- economic position across the life course and age at menopause: the British women's heart and health study. *BJOG: An International Journal of Obstetrics & Gynaecology*, *110*(12), 1078-1087.

Lee, S., Hayashi, K., Mishra, G., Yasui, T., Kubota, T., & Mizunuma, H. (2013). Independent association between age at natural menopause and hypercholesterolemia, hypertension, and diabetes mellitus: Japan nurses' health study. *Journal of Atherosclerosis and Thrombosis*, *20*(2), 161-169.

Lethaby, A., Ayeleke, O., & Roberts, H. (2016). Local oestrogen for vaginal atrophy in postmenopausal women. *The Cochrane Library*. DOI: 10.1002/14651858.CD001500.pub3.

Lisabeth, L., & Bushnell, C. (2012). Menopause and stroke: an epidemiologic review. *Lancet Neurology*, *11*(1), 82-91.

Loh, H., Khin, W., Saw, M., Lee, J., & Gu, K. (2005). The age of menopause and the menopause transition in a multiracial population: a nation-wide Singapore study. *Maturitas*, *52*(3), 169-180.

Londono, J., Valencia, P., Santos, M., Gutiérrez, F., Baquero, R., & Valle-Oñate, R. (2013). Risk factors and prevalence of osteoporosis in premenopausal women from poor economic backgrounds in Colombia. *International Journal of Women's Health*, *5*(3), 425.

Loutfy, I., Abdel Aziz, F., Dabbous, N., & Hassan, M. H. (2006). Women's perception and experience of menopause: a community-based study in Alexandria, Egypt.

Lu, J., Liu, J., & Eden, J. (2007). The experience of menopausal symptoms by Arabic women in Sydney. *Climacteric*, *10*(1), 72-79.

Lutsey, L., Virnig, A., Durham, B., Steffen, M., Hirsch, T., Jacobs, R., & Folsom, R. (2010). Correlates and consequences of venous thromboembolism: The Iowa Women's Health Study. *American Journal of Public Health*, *100*(8), 1506-1513.

Maggio, M., de Vita, F., Lauretani, F., Bandinelli, S., Semba, D., Bartali, B., ... & Ferrucci, L. (2015). Relationship between carotenoids, retinol, and estradiol levels in older women. *Nutrients*, *7*(8), 6506-6519.

Malik, H. (2008). Knowledge and attitude towards menopause and hormone replacement therapy (HRT) among postmenopausal women. *therapy*, *11*, 12.

Manduca, P., Naim, A., & Signoriello, S. (2014). Specific association of teratogen and toxicant metals in hair of newborns with congenital birth defects or developmentally premature birth in a cohort of couples with documented parental exposure to military attacks: observational study at Al Shifa Hospital, Gaza, Palestine. *International journal of environmental research and public health*, *11*(5), 5208-5223.

Martin, A., Prior, R., Shukitt-Hale, B., Cao, G., & Joseph, J. (2000). Effect of fruits, vegetables, or vitamin E–rich diet on vitamins E and C distribution in peripheral and

brain tissues: implications for brain function. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *55*(3), B144-B151.

Massoud, K., & Nadereh, C. (Eds.). (2016). *Women, work and welfare in the Middle East and North Africa: The role of socio-demographics, entrepreneurship and public policies*. World Scientific.

Matthews, K., Crawford, S., Chae, C., Everson-Rose, S., Sowers, M., Sternfeld, B., & Sutton-Tyrrell, K. (2009). Are changes in cardiovascular disease risk factors in midlife women due to chronological aging or to the menopausal transition?. *Journal of the American College of Cardiology*, *54*(25), 2366-2373.

McKnight, K., Wellons, F., Sites, K., Roth, L., Szychowski, M., Halanych, H., ... & Safford, M. (2011). Racial and regional differences in age at menopause in the United States: findings from the Reasons for Geographic And Racial Differences in Stroke (REGARDS) study. *American Journal of Obstetrics & Gynecology*, *205*(4), 353-360.

Memon, R., Jonker, L., & Qazi, A. (2014). Knowledge, attitudes and perceptions towards menopause among highly educated Asian women in their midlife. *Post Reproductive Health*, *20*(4), 138-142.

Merom, D., Sinnreich, R., Aboudi, V., Kark, J., & Nassar, H. (2012). Lifestyle physical activity among urban Palestinians and Israelis: a cross-sectional comparison in the Palestinian-Israeli Jerusalem risk factor study. *BMC public health*, *12*(1), 90.

Mezeid, N., Shaldoum, F., Al-Hindi, A., Mohamed, F., & Darwish, Z. (2014). Prevalence of intestinal parasites among the population of the Gaza Strip, Palestine. *Annals of parasitology*, *60*(4).

Mikki, N., Abdul-Rahim, H., Shi, Z., & Holmboe-Ottesen, G. (2010). Dietary habits of Palestinian adolescents and associated sociodemographic characteristics in Ramallah, Nablus and Hebron governorates. *Public health nutrition*, *13*(9), 1419-1429.

Million Women Study Collaborators. (2003). Breast cancer and hormone-replacement therapy in the Million Women Study. *The Lancet*, *362*(9382), 419-427.

Mishra, G., Hardy, R., & Kuh, D. (2007). Are the effects of risk factors for timing of menopause modified by age? Results from a British birth cohort study. *Menopause*, *14*(4), 717-724.

Mishra, G., Carrigan, G., Brown, W., Barnett, A., & Dobson, A. (2007). Short-term weight change and the incidence of diabetes in midlife: results from the Australian Longitudinal Study on Women's Health. *Diabetes Care.*

Mohammad, K., Hashemi, S., & Farahani, F. (2004). Age at natural menopause in Iran. *Maturitas*, *49*(4), 321-326.

Morris, H., Jones, E., Schoemaker, J., McFadden, E., Ashworth, A., & Swerdlow, J. (2012). Body mass index, exercise, and other lifestyle factors in relation to age at natural menopause: analyses from the breakthrough generations study. *American Journal of Epidemiology*, *175*(10), 998-1005.

Morrison, L., Brown, D., Sievert, L., Reza, A., Rahberg, N., Mills, P., & Goodloe, A. (2014). Voices from the Hilo Women's Health Study: talking story about menopause. *Health Care for Women International*, *35*(5), 529-548.

Mourad, T. (2004). Palestinian refugee conditions associated with intestinal parasites and diarrhoea: Nuseirat refugee camp as a case study. *Public health*, *118*(2), 131-142.

Mozaffarian, D., & Rimm, E. (2006). Fish intake, contaminants, and human health: evaluating the risks and the benefits. *Jama*, *296*(15), 1885-1899.

Murphy, M., Verjee, M., Bener, A., & Gerber, L. (2013). The hopeless age? A qualitative exploration of the experience of menopause in Arab women in Qatar. *Climacteric*, *16*(5), 550-554.

Murray, A., Bennett, C., Perry, J., Weedon, M., Consortium, R., Jacobs, P., ... & Ashworth, A. (2010). Common genetic variants are significant risk factors for early menopause: results from the Breakthrough Generations Study. *Human molecular genetics*, *20*(1), 186-192.

Musaiger, A. (2011). Overweight and obesity in eastern mediterranean region: prevalence and possible causes. *Journal of obesity*, *2011*.

Musmar, S. (2012). Smoking habits and attitudes among university students in Palestine: a cross-sectional study/Etude transversale sur le tabagisme et les attitudes des etudiants de niveau universitaire en Palestine. *Eastern Mediterranean health journal*, *18*(5), 454-461.

Mustafa, G., & Sabir, J. (2012). Perception and experience regarding menopause among menopaused women attending teaching hospitals in Erbil City. *Global Journal of Health Science*, *4*(3), 170-177.

Naim, A., Al Dalies, H., El Balawi, M., Salem, E., Al Meziny, K., Al Shawwa, R., ... & Manduca, P. (2012). Birth defects in Gaza: prevalence, types, familiarity and correlation with environmental factors. *International journal of environmental research and public health*, *9*(5), 1732-1747.

Nasir, S. (2002). Acupuncture. *Primary Care: Clinics in Office Practice*, *29*(2), 393-405.

National Institutes of Health. (2018a). National Cancer Institute-NCI Dictionary of Cancer Terms: NIH.

National Institutes of Health. (2018b). National Institute of General Medical Sciences: NIH.

National Institutes of Health. (2018c). National Institutes of Arthritis and Musculoskeletal and Skin Diseases: NIH.

Nelson, H., Haney, E., Humphrey, L., Miller, J., Nedrow, A., Nicolaidis, C., ... & Nygren, P. (2005). Management of menopause-related symptoms.

Nelson, H., Humphrey, L., Nygren, P., Teutsch, S., & Allan, J. (2002). Postmenopausal hormone replacement therapy: scientific review. *Jama*, *288*(7), 872-881.

Newton, M., Buist, S., Keenan, L., Anderson, A., & LaCroix, Z. (2002). Use of alternative therapies for menopause symptoms: results of a population-based survey1. *Obstetrics & Gynecology*, *100*(1), 18-25.

Noroozi, E., Dolatabadi, N., Eslami, A., Hassanzadeh, A., & Davari, S. (2013). Knowledge and attitude toward menopause phenomenon among women aged 40–45 years. *Journal of education and health promotion*, *2*.

Nosek, M., Kennedy, P., Beyene, Y., Taylor, D., Gilliss, C., & Lee, K. (2010). The effects of perceived stress and attitudes toward menopause and aging on symptoms of menopause. *Journal of Midwifery & Women's Health*, *55*(4), 328-334.

Nusrat, N., Nishat, Z., Gulfareen, H., Aftab, M., & Asia, N. (2008). Knowledge, attitude and experience of menopause. *J Ayub Med Coll Abbottabad*, *20*(1), 56-59.

Obeidat, B., Khader, Y., Amarin, Z., Kassawneh, M., & Al Omari, M. (2010). Consanguinity and adverse pregnancy outcomes: the north of Jordan experience. *Maternal and child health journal*, *14*(2), 283-289.

Oboni, J., Marques-Vidal, P., Bastardot, F., Vollenweider, P., & Waeber, G. (2016). Impact of smoking on fertility and age of menopause: a population-based assessment. *BMJ open*, *6*(11), e012015.

Okeke, T., Anyaehie, U., & Ezenyeaku, C. (2013). Premature menopause. *Annals of Medical and Health Sciences Research*, *3*(1), 90-95.

Oliveira, J., Carvalho, A., Portincasa, P., Bonfrate, L., & Sardao, A. (2012). Fatty acid oxidation and cardiovascular risk during menopause: a mitochondrial connection?. *Journal of Lipids*, *2012*(9), 58-67.

Ortiz, M., Rangel- Flores, E., Carrillo- Alarcón, L., & Veras- Godoy, H. (2009). Prevalence and impact of primary dysmenorrhea among Mexican high school students. *International Journal of Gynecology & Obstetrics*, *107*(3), 240-243.

Ozerdogan, N., Sayiner, D., Ayranci, U., Unsal, A., & Giray, S. (2009). Prevalence and predictors of dysmenorrhea among students at a university in Turkey. *International Journal of Gynecology & Obstetrics*, *107*(1), 39-43.

Özpinar, S., & Çevik, K. (2016). Women's Menopause-Related Complaints and Coping Strategies: Manisa Sample. *International Journal of Nursing*, *3*(2), 69-78.

Padez, C. (2003). Social background and age at menarche in Portuguese university students: a note on the secular changes in Portugal. *American Journal of Human Biology*, *15*(3), 415-427.

Palacios, S., Henderson, V., Siseles, N., Tan, D., & Villaseca, P. (2010). Age of menopause and impact of climacteric symptoms by geographical region. *Climacteric*, *13*(5), 419-428.

Palestinian Central Bureau of Statistics. (2016). *Palestine in Figures 2016*. Ramallah-Palestine: PCBS.

Palestinian Central Bureau of Statistics. (2017). *Main Findings Report*. Ramallah-Palestine: PCBS.

Palestinian Central Bureau of Statistics. (2018). *Preliminary Results of the Population, Housing and Establishments Census, 2017*. Ramallah-Palestine: PCBS.

Pan, H., Wu, M., Hsu, C., Yao, B., & Huang, K. (2002). The perception of menopause among women in Taiwan. *Maturitas*, *41*(4), 269-274.

Parazzini, F. (2007). Determinants of age at menopause in women attending menopause clinics in Italy. *Maturitas*, *56*(3), 280-287.

Pérez-Alcalá, I., Sievert, L., Obermeyer, M., & Reher, S. (2013). Cross cultural analysis of determinants of hot flashes and night sweats: Latin-American immigrants to Madrid and their Spanish neighbors. *Menopause (New York, NY)*, *20*(11), 46-50.

Peyrat, L., Haillot, O., Bruyere, F., Boutin, J., Bertrand, P., & Lanson, Y. (2002). Prevalence and risk factors of urinary incontinence in young and middle- aged women. *BJU international*, *89*(1), 61-66.

Pimenta, F., Leal, I., Maroco, J., & Ramos, C. (2012). Menopausal symptoms: do life events predict severity of symptoms in peri-and post-menopause?. *Maturitas*, *72*(4), 324-331.

Prizment, E., Anderson, E., Harlow, L., & Folsom, R. (2007). Reproductive risk factors for incident bladder cancer: Iowa Women's Health Study. *International Journal of Cancer*, *120*(5), 1093-1098.

Qlalweh, K., Duraidi, M., & Brønnum-Hansen, H. (2012). Health expectancy in the occupied Palestinian territory: estimates from the Gaza Strip and the West *BMJ open*, *2*(6), e001572.

Quigley, H., & Broman, A. (2006). The number of people with glaucoma worldwide in 2010 and 2020. *British journal of ophthalmology*, *90*(3), 262-267.

Qumseya, B., Tayem, Y., Almansa, C., Dasa, O., Hamadneh, M., Al-Sharif, A., ... & DeVault, K. (2014). Irritable bowel syndrome in middle-aged and elderly Palestinians: its prevalence and effect of location of residence. *The American journal of gastroenterology*, *109*(5), 723.

Reddy, R. (2004). Role of Socio-economic status and Reproductive factors in Breast Cancer. *Acta Universitatis Tamperensis*, *1009*.

Reid, R., Abramson, L., Blake, J., Desindes, S., Dodin, S., Johnston, S., ... & Fortier, M. (2014). Managing menopause. *Journal of Obstetrics and Gynaecology Canada*, *36*(9), S1-S5.

Reynolds, R., & Obermeyer, C. (2001). Age at natural menopause in Beirut, Lebanon: the role of reproductive and lifestyle factors. *Annals of human biology*, *28*(1), 21-29.

Rizk, E., Bener, A., Ezimokhai, M., Hassan, Y., & Micallef, R. (1998). The age and symptomatology of natural menopause among United Arab Emirates women. *Maturitas*, *29*(3), 197-202.

Roberts, H., & Hickey, M. (2016). Managing the menopause: an update. *Maturitas*, *86*(1), 53-58.

Ross, C., & Mirowsky, J. (2002). Age and the gender gap in the sense of personal control. *Social Psychology Quarterly*, 17(8), 125-145.

Rosner, B., & Colditz, A. (2011). Age at menopause: imputing age at menopause for women with a hysterectomy with application to risk of postmenopausal breast cancer. *Annals of Epidemiology*, *21*(6), 450-460.

Rosemeier, P., & Schultz-Zehden, B. (2001). Psychological aspects of menopause. *Menopause-Andropause: Hormone Replacement Therapy Through The Ages. Gablitz: Krause & Pachernegg GmbH*.

Rought-Brooks, H. (2015). *Gaza: The Impact of Conflict on Women*. Norwegian Refugee Council: NRC

Rozenberg, S., Body, J., Bruyere, O., Bergmann, P., Brandi, M., Cooper, C., ... & Rizzoli, R. (2016). Effects of dairy products consumption on health: benefits and beliefs—a commentary from the Belgian Bone Club and the European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases. *Calcified Tissue International*, *98*(1), 1-17.

Rubinstein, H. (2013). *The meanings of menopause: Identifying the Bio-Psycho-Social Predictors of the Propensity for Treatment at Menopause* (Doctoral dissertation, University of Cambridge).

Sakata, R., Shimizu, Y., Soda, M., Yamada, M., Hsu, L., Hayashi, M., & Ozasa, K. (2011). Effect of radiation on age at menopause among atomic bomb survivors. *Radiation Research*, *176*(6), 787-795.

Salim, E., Moore, M., Al-Lawati, J., Al-Sayyad, J., Bazawir, A., Bener, A., ... & Mokhtar, H. (2009). Cancer epidemiology and control in the arab world-past, present and future. *Asian Pac J Cancer Prev*, *10*(1), 3-16.

Sallam, H., Galal, A., & Rashed, A. (2006). Menopause in Egypt: past and present perspectives. *Climacteric*, *9*(6), 421-429.

Sapre, S., & Thakur, R. (2014). Lifestyle and dietary factors determine age at natural menopause. *Journal of Mid-Life Health*, *5*(1), 3.

Sawalha, A., Sweileh, W., Sa'ed, H., & Jabi, S. (2008). Self-therapy practices among university students in Palestine: focus on herbal remedies. *Complementary therapies in medicine*, *16*(6), 343-349.

Schairer, C., Lubin, J., Troisi, R., Sturgeon, S., Brinton, L., & Hoover, R. (2000). Menopausal estrogen and estrogen-progestin replacement therapy and breast cancer risk. *Jama*, *283*(4), 485-491.

Schmidt, J., Luff, A., Haq, A., Vanderhoof, H., Koziol, E., Calis, A., ... & Nelson, M. (2011). Depression in women with spontaneous 46, XX primary ovarian insufficiency. *The Journal of Clinical Endocrinology & Metabolism*, *96*(2), E278-E287.

Schoenaker, A., Jackson, A., Rowlands, V., & Mishra, D. (2014). Socioeconomic position, lifestyle factors and age at natural menopause: a systematic review and meta-analyses of studies across six continents. *International Journal of Epidemiology*, *43*(5), 1542-1562.

Seibel, M. (2003). Treating hot flushes without hormone replacement therapy. *Journal of Family Practice*, *52*(4), 291-297.

Shakhatreh, F., & Mas' ad, D. (2006). Menopausal symptoms and health problems of women aged 50–65 years in Southern Jordan. *Climacteric*, *9*(4), 305-311.

Shalash, A., Alsalman, H., Hamed, A., Helo, M., Ghandour, R., Albarqouni, L., & Rmeileh, N. M. (2019). The range and nature of reproductive health research in the occupied Palestinian territory: a scoping review. *Reproductive health*, *16*(1), 41.

Sharif, F. (2012). Structural chromosome abnormality in recurrent pregnancy loss in Gaza strip: first experience. *Structural Chromosome Abnormality in Recurrent Pregnancy Loss in Gaza Strip: First Experience*, *20*(1).

Sharps, P., Phillips, J., Oguntimalide, L., Saling, J., & Yun, S. (2003). Knowledge, attitudes, perceptions and practices of African-American women toward menopausal health. *Journal of National Black Nurses' Association: JNBNA*, *14*(2), 9-15.

Sherman, S. (2005). Defining the menopausal transition. *The American Journal of Medicine*, *118*(12), 3-7.

Shifren, J., Gass, M., & NAMS Recommendations for Clinical Care of Midlife Women Working Group. (2014). The North American Menopause Society recommendations for clinical care of midlife women. *Menopause, 21*(10), 1038-1062.

Shuster, T., Rhodes, J., Gostout, S., Grossardt, R., & Rocca, A. (2010). Premature menopause or early menopause: long-term health consequences. *Maturitas*, *65*(2), 161-166.

Singh, S., Best, C., Dunn, S., Leyland, N., Wolfman, L., Wolfman, W., ... & Marcoux, V. (2013). Abnormal uterine bleeding in pre-menopausal women. *Journal of Obstetrics and Gynaecology Canada*, *35*(5), 473-475.

Skevington, S., Lotfy, M., & O'Connell, K. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A eport from the WHOQOL group. *Quality of Life Research*, *13*(2), 299-310.

Sofi, F., Cesari, F., Abbate, R., Gensini, G., & Casini, A. (2008). Adherence to Mediterranean diet and health status: meta-analysis. *Bmj*, *337*, a1344.

Steevens, J., Schouten, L., Verhage, B., Goldbohm, R., & Van Den Brandt, P. (2007). Tea and coffee drinking and ovarian cancer risk: results from the Netherlands Cohort Study and a meta-analysis. *British journal of cancer*, *97*(9), 1291.

Stepaniak, U., Szafraniec, K., Kubinova, R., Malyutina, S., Peasey, A., Pikhart, H., ... & Bobak, M. (2013). Age at natural menopause in three central and eastern European urban populations: the HAPIEE study. *Maturitas*, *75*(1), 87-93.

Svejme, O., Ahlborg, G., Nilsson, Å., & Karlsson, K. (2012). Early menopause and risk of osteoporosis, fracture and mortality: a 34- year prospective observational study in 390 women. *BJOG: An International Journal of Obstetrics & Gynaecology*, *119*(7), 810-816.

Svejme, O., Ahlborg, G., Nilsson, Å., & Karlsson, K. (2013). Low BMD is an independent predictor of fracture and early menopause of mortality in post-menopausal women–a 34-year prospective study. *Maturitas*, *74*(4), 341-345.

Sweed, S., Elawam, E., Nabeel, M., & Mortagy, K. (2012). Postmenopausal symptoms among Egyptian geripausal women. *Health Journal for the Mediterranean*, *18*(3), 214-219.

Sweileh, W., & Barham, A. (2003). Contraceptive Methods: Cost/Effectiveness Ratio from a Customerâ s Perspective in Palestine. *An-Najah University Journal for Research*, *17*(1), 43-51.

Taher, Y., Ben Emhemed, H., & Tawati, A. (2012). Menopausal age, related factors and climacteric symptoms in Libyan women. *Climacteric*, *16*(1), 179-184.

Tailakh, A., Evangelista, L., Mentes, J., Pike, N., Phillips, L., & Morisky, D. (2014). Hypertension prevalence, awareness, and control in A rab countries: A systematic review. *Nursing & health sciences*, *16*(1), 126-130.

Tao, M., Teng, Y., Shao, H., Wu, P., & Mills, E. (2011). Knowledge, perceptions and information about hormone therapy (HT) among menopausal women: a systematic review and meta-synthesis. *PloS one*, *6*(9), e24661.

Tavallaee, M., Joffres, M., Corber, S., Bayanzadeh, M., & Rad, M. (2011). The prevalence of menstrual pain and associated risk factors among Iranian women. *Journal of Obstetrics and Gynaecology Research*, *37*(5), 442-451.

Taylor, S., Klein, L., Lewis, B., Gruenewald, T., Gurung, R., & Updegraff, J. (2000). Biobehavioral responses to stress in females: tend-and-befriend, not fight-or-flight. *Psychological review*, *107*(3), 411.

Temme, E., & Van Hoydonck, P. (2002). Tea consumption and iron status. *European journal of clinical nutrition*, *56*(5), 379.

Terao, J., Kawai, Y., & Murota, K. (2008). Vegetable flavonoids and cardiovascular disease. *Asia Pacific journal of clinical nutrition*, *17*(S1), 291-293.

Thiebaud, S., Loenneke, P., Fahs, A., Rossow, M., Kim, D., Abe, T., ... & Bemben, G. (2013). The effects of elastic band resistance training combined with blood flow restriction on strength, total bone- free lean body mass and muscle thickness in

postmenopausal women. *Clinical Physiology and Functional Imaging*, *33*(5), 344-352.

Thomas, F., Renaud, F., Benefice, E., De Meeüs, T., & Guegan, J. (2001). International variability of ages at menarche and menopause: patterns and main determinants. *Human biology*, 271-290.

Thompson, J., Roberts, C., Currie, M., & Ellwood, D. (2002). Prevalence and persistence of health problems after childbirth: associations with parity and method of birth. *Birth*, *29*(2), 83-94.

Titi, I., & El Sharif, N. (2013). Prenatal and postnatal care of gestational diabetes and gestational hypertension in clinics for high-risk pregnancies in the West Bank, occupied Palestinian territory: a follow-up comparative study. *The Lancet*, *382*, S35.

Tom, E., Cooper, R., Kuh, D., Guralnik, M., Hardy, R., & Power, C. (2010). Fetal environment and early age at natural menopause in a British birth cohort study. *Human Reproduction*, *25*(3), 791-798.

Torres- Mejía, G., Cupul- Uicab, L., Allen, B., Galal, O., Salazar- Martínez, E., & Lazcano- Ponce, E. (2005). Comparative study of correlates of early age at menarche among Mexican and Egyptian adolescents. *American Journal of Human Biology: The Official Journal of the Human Biology Association*, *17*(5), 654-658.

Towfighi, A., Zheng, L., & Ovbiagele, B. (2009). Sex-specific trends in midlife coronary heart disease risk and prevalence. *Archives of internal medicine*, *169*(19), 1762-1766.

Tu, C., Niddam, D., Yeh, T., Lirng, J., Cheng, C., Chou, C., ... & Hsieh, J. (2013). Menstrual pain is associated with rapid structural alterations in the brain. *PAIN®*, *154*(9), 1718-1724.

United Nations (2012). Gaza in 2020 A liveable place. *Office of the United Nations Special coordinator for the middle East Peace Process (UNSCO)*: Jerusalem, 20.

UNdata. (2017). *Country Profiles-Palestine Statistics*. United Nations: UN.

Utian, H. (2005). Psychosocial and socioeconomic burden of vasomotor symptoms in menopause: a comprehensive review. *Health and Quality of Life outcomes*, *3*(1), 47-50.

Utian, W., & Schiff, I. (2018). NAMS-Gallup survey on women's knowledge, information sources, and attitudes to menopause and hormone replacement therapy. *Menopause*, *25*(11), 1172-1179.

Utian, H., Janata, W., Kingsberg, A., Schluchter, M., & Hamilton, C. (2002). The Utian Quality of Life (UQOL) Scale: development and validation of an instrument to quantify quality of life through and beyond menopause. *Menopause*, *9*(6), 402-410.

Van Anders, S., & Watson, N. (2006). Menstrual cycle irregularities are associated with testosterone levels in healthy premenopausal women. *American Journal of Human Biology: The Official Journal of the Human Biology Association*, *18*(6), 841-844.

Van Asselt, K., Kok, H., van der Schouw, Y., Grobbee, D., Velde, E., Pearson, P., & Peeters, P. (2004). Current smoking at menopause rather than duration determines the onset of natural menopause. *Epidemiology*, 634-639.

Van Wingen, G., Ossewaarde, L., Bäckström, T., Hermans, E., & Fernández, G. (2011). Gonadal hormone regulation of the emotion circuitry in humans. *Neuroscience*, *191*, 38-45.

Victor, T., Hu, X., Campbell, J., Buse, D., & Lipton, R. (2010). Migraine prevalence by age and sex in the United States: a life-span study. *Cephalalgia*, *30*(9), 1065-1072.

Wang, Y., Tao, Y., Hyman, M., Li, J., & Chen, Y. (2009). Osteoporosis in china. *Osteoporosis international*, *20*(10), 1651-1662.

Wei, S., Schmidt, M., Dwyer, T., Norman, R., & Venn, A. (2009). Obesity and menstrual irregularity: associations with SHBG, testosterone, and insulin. *Obesity*, *17*(5), 1070-1076.

Weickert, O., Reimann, M., Otto, B., Hall, L., Vafeiadou, K., Hallund, J., ... & Williams, M. (2006). Soy isoflavones increase preprandial peptide YY (PYY), but have no

effect on ghrelin and body weight in healthy postmenopausal women. *Journal of Negative Results in Biomedicine*, *5*(1), 11.

Weiss, M., Lacey Jr, V., Shu, O., Ji, T., Hou, L., Yang, G., ... & Chow, H. (2008). Menstrual and reproductive factors in association with lung cancer in female lifetime nonsmokers. *American Journal of Epidemiology*, *168*(11), 1319-1325.

Wellons, M., Ouyang, P., Schreiner, J., Herrington, M., & Vaidya, D. (2012). Early menopause predicts future coronary heart disease and stroke: the Multi-Ethnic Study of Atherosclerosis (MESA). *Menopause (New York, NY)*, *19*(10), 1081.

Whitaker, L., & Critchley, H. (2016). Abnormal uterine bleeding. *Best Practice & Research Clinical Obstetrics & Gynaecology*, *34*, 54-65.

Whiteley, J., DiBonaventura, D., Wagner, S., Alvir, J., & Shah, S. (2013). The impact of menopausal symptoms on quality of life, productivity, and economic outcomes. *Journal of Women's Health*, *22*(11), 983-990.

Williams, R., Kalilani, L., DiBenedetti, D., Zhou, X., Granger, A., Fehnel, S., ... & Clark, R. (2008). Frequency and severity of vasomotor symptoms among peri-and postmenopausal women in the United States. *Climacteric*, *11*(1), 32-43.

Williams, E., Levine, B., Kalilani, L., Lewis, J., & Clark, V. (2009). Menopause-specific questionnaire assessment in US population-based study shows negative impact on health-related quality of life. *Maturitas*, *62*(2), 153-159.

Wong, L., & Khoo, E. (2010). Dysmenorrhea in a multiethnic population of adolescent Asian girls. *International Journal of Gynecology & Obstetrics*, *108*(2), 139-142.

World Health Organization Scientific Group. (1981). *Research on the Menopause, WHO Technical Services Report Series 670*. Geneva: World Health Organization.

World Health Organization Scientific Group. (1996). *Menopause. WHO Technical Report Series 866, 7*(4), 36-42.

World Bank. (2003). *The World Bank* Annual Report 2003: Washington, DC.

World Bank. (2008). *The World Bank Annual Report 2008*: Washington, DC.

World Bank. (2016). *The World Bank Annual Report 2016:* Washington, DC.

Writing Group for the Women's Health Initiative Investigators. (2002). Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results from the Women's Health Initiative randomized controlled trial. *Jama*, *288*(3), 321-333.

Wu, X., Cai, H., Kallianpur, A., Li, H., Yang, G., Gao, J., ... & Shu, O. (2014). Impact of premature ovarian failure on mortality and morbidity among Chinese women. *PloS one*, *9*(3), e89597.

Wyon, Y., Wijma, K., Nedstrand, E., & Hammar, M. (2004). A comparison of acupuncture and oral estradiol treatment of vasomotor symptoms in postmenopausal women. *Climacteric*, *7*(2), 153-164.

Yanikkerem, E., Koltan, O., Tamay, G., & Dikayak, Ş. (2012). Relationship between women's attitude towards menopause and quality of life. *Climacteric*, *15*(6), 552-562.

Yasui, T., Hayashi, K., Mizunuma, H., Kubota, T., Aso, T., Matsumura, Y., ... & Suzuki, S. (2011). Association of endometriosis-related infertility with age at menopause. *Maturitas*, *69*(3), 279-283.

Yassin, K., Awad, R., Tebi, A., Queder, A., & Laaser, U. (2002). Prevalence and risk factors of HBsAg in Gaza: implications for prevention and control. *Journal of Infection*, *44*(4), 252-256.

Zegeye, D., Megabiaw, B., & Mulu, A. (2009). Age at menarche and the menstrual pattern of secondary school adolescents in northwest Ethiopia. *BMC women's health*, *9*(1), 29.

Zhao, M., Whitcomb, B., Purdue-Smithe, A., Manson, J., Hankinson, S., Rosner, B., & Bertone-Johnson, E. (2018). Physical activity is not related to risk of early menopause in a large prospective study. *Human Reproduction*, *33*(10), 1960-1967.

Zyoud, S., Abd-Alhafez, A., Hussein, A., Abu-Shehab, I., Al-Jabi, S., & Sweileh, W. (2014). Patterns of use of medications, herbal products and nutritional supplements and polypharmacy associating factors in Palestinian geriatric patients. *European Geriatric Medicine*, *5*(3), 188-194.

Annexes

Annex (1): Sample size calculation

Population survey or descriptive study
For simple random sampling, leave design effect and clusters equal to 1.

Population size:	51177
Expected frequency:	50 %
Acceptable Margin of Error:	5 %
Design effect:	1.0
Clusters:	1

Confidence Level	Cluster Size	Total Sample
80%	164	164
90%	269	269
95%	381	381
97%	467	467
99%	655	655
99.9%	1060	1060
99.99%	1471	1471

Annex (2): The study quantitative instrument-Arabic questionnaire

جامعة القدس

كلية الصحة العامة

أختي الكريمة

أنا الباحثة/ سالي محمد علي صالحة؛ أقوم بإجراء دراسة بعنوان "سن الأمل من منظور السيدات في قطاع غزة" وذلك استكمالاً للحصول على متطلبات الحصول على درجة الماجستير في جامعة القدس / كلية الصحة العامة / علم الأوبئة؛ وعليه فقد تم إعداد هذا الاستبيان بهدف جمع البيانات، إذ يضم هذا الاستبيان ثلاثة أقسام رئيسية : القسم الأول يحتوي على البيانات الشخصية (الديموغرافية) للمشتركة، و يشمل القسم الثاني المعلومات المتعلقة بالمعرفةُ، الموقف، والسلوك تجاه سن الأمل، أما القسم الثالث فيصف نوعية حياة المشتركات من حيث الأعراض المصاحبة لدخولهن سن الأمل. نأمل منكن المشاركة و الإجابة على بنود هذا الاستبيان بدقة عالية وموضوعية وصدق حيث أن الوقت اللازم لتعبئة هذا الاستبيان لا يتعدى نصف ساعة من وقتكن الثمين، مع العلم أن كافة المعلومات ستعامل بسرية تامة دون الإشارة إلى شخصياتكن الكريمة وسيتم استخدامها فقط لأغراض البحث العلمي وذلك لهدف التحسين والتطوير واخذ القرارات المبنية على الحقائق ، ولن يكون لها أي تأثير على الخدمات الصحية التي تتلقينها من هذا المركز الصحي. إننا نرحب بمشاركتك في هذا الاستبيان لذا نرجو من حضرتك الإجابة على جميع الأسئلة قدر الإمكان وفي حالة وجود أي غموض في المعنى أو القصد يرجى الاستفسار. وفي حالة الرغبة في التوقف عن المشاركة أو عدم الرغبة في الاجابة عن أي من الأسئلة فلكِ كامل الحرية في ذلك.

شكراً جزيلاً لحسنِ تعاونك

الطالبة: سالي محمد علي صالحة

جامعة القدس

شهادة موافقة

لقد قرأت المعلومات السابقة، أو قد قرئت لي. لقد أتيحت لي الفرصة لطرح الأسئلة حول هذا الموضوع وأي أسئلة قمت بطرحها قد تم الرد عليها كما يجب.

أوافق طوعًا على المشاركة في هذا البحث.

اسم المشتركة----------

توقيع المشتركة----------

التاريخ----------

اليوم/ الشهر/ السنة

سن الأمل من منظور السيدات في قطاع غزة

الرقم التسلسلي		التاريخ			
1- المعلومات الأساسية					
أ- المعلومات الشخصية					
1	الاسم (اختياري)				
2	العنوان				
3	العمر		1-3 تاريخ الميلاد		
4	رقم الجوال				
5	الحالة الاجتماعية	* انسة	* متزوجة	* مطلقة	* أرملة
6	المواطنة			لاجئة	غير لاجئة
7	الوظيفة	* ربة بيت	* عاملة	* متقاعدة	اذا كنت عاملة المهنة : .....
8	المستوى التعليمي	غير متعلمة	اساسي – ثانوي	جامعي	دراسات عليا
9	عدد أفراد العائلة	العدد:.....	1-9 عدد العاملين منهم		العدد:.....
10	الدخل – بالشيكل	أقل من 1000	3000-1000	5000-3000	أكثر من 5000
11	هل انت المعيل الوحيد او الاساسي للعائلة			* نعم	* لا
ب – معلومات الطول والوزن					
1	الطـــــول		2- الـــوزن		

ج- التـــاريـــخ الطـــــبي					
-1	هل سبق وعانيتي من أحد الأعراض الصحية التالية				
	صداع نصفي	سلس البول او البراز	فقدان في الطول	زيادة او فقدان بالوزن	قلق
	اكتئاب	توتر	ارهاق	الام في الظهر	كسل او خمول
	الام في الصدر	سيولة الدم	مشاكل بالنوم	زيادة او قلة نمو الشعر	عدم توازن
	سوء الهضم	قيئ وغثيان مستمر	اسهال	امساك	دم في البراز
	تشنجات	تفكير بالانتحار	اعتلال في النظر	تقلبات في المزاج	الام بالمفاصل
-2	هل سبق وعانيتي من أحد الأمراض التالية				
	ارتفاع الكوليسترول في الدم	ضغط الدم	دوالي	التهابات في المفاصل	الربو
	اعتلال في الغدة الدرقية	سكتة دماغية	اعتلال في الرحم	هشاشة عظام	تجلطات في الدم
	اعتلال في الكبد	عقم	اعتلال في العين	التهاب الكيد	المرارة
	تليفات أخرى	مشاكل باللثة والاسنان	سكري	التهاب في القولون	انيميا
	مشاكل في الجلد	سرطان	امراض صدرية غير الربو	نوبات قلبية	كسور بالعظام
-3	هل سبق وقمت بعمل أي من الفحوصات التالية				
3-1	سكر الدم	التاريخ : النتيجة : * طبيعي * غير طبيعي * لا أعرف			لا
3-2	ضغط الدم	التاريخ : النتيجة : * طبيعي * غير طبيعي * لا أعرف			لا
3-3	الكوليسترول	التاريخ : النتيجة : * طبيعي * غير طبيعي * لا أعرف			لا
3-4	الهيموغلوبين	التاريخ : النتيجة : * طبيعي * غير طبيعي * لا أعرف			لا

د- التـــاريـــخ النـســـائـــي					
1	سن البلوغ				
2	هل كانت الدورة الشهرية منتظمة	* نعم	* لا	* لا اعرف	
3	كم كان عدد ايام الدورة الشهرية	*اقل من اسبوع	*اسبوع	*اكثر من اسبوع	
4	هل كانت الدورة مؤلمة	* نعم	* لا	4-1 درجة الألم	*خفيف *متوسط * شديد
5	هل كان يحدث نزيف خلال الايام بين الدورات الشهرية	* نعم	* لا		
6	هل كانت تحدث عندك أي اعراض قبل، خلال او بعد ايام الدورة الشهرية				
	6-1 قبل الدورة : *تقلبات في المزاج * صداع	6-2 خلال الدورة : * تقلبات في المزاج	6-3 بعد الدورة : * تقلبات في المزاج		
7	كم كان عمرك عند انقطاع الطمث				
8	هل كان انقطاع الطمث	*طبيعي	* جراحي (استئصال المبايض)	* بسبب العلاج الكيميائي او اشعاعي	* آخر .....

هـ - تاريخ الولادة						
1	هل كنتي تستخدمي أي وسيلة لمنع الحمل؟	* نعم	* لا	من فضلك حددي وسيلة منع الحمل المستخدمة:	الوسيلة	
					أقراص	
					حقن بالهرمونات	
					هرمون تحت الجلد	
					عازل طبي	
					لولب	
					تنظيم طبيعي للحمل	
					آخر	
2	كم مرة سبق لك الحمل؟					
3	كم عدد	الولادات الطبيعية مكتملة النمو	الولادات الغير مكتملة النمو	حالات الاجهاض ( )	الاطفال الاحياء	
4	كم كان عمرك عند ولادة اول طفل					
5	كم كان عمرك عند ولادة آخر طفل					
6	هل كانت لديك أي مضاعفات خلال	* نعم	* لا	6-1 اذا نعم ما هي المضاعفات		

<table>
<tr><th colspan="8">و – التاريخ الدوائـــي</th></tr>
<tr><td>1</td><td colspan="3">هل سمعت عن العلاج التعويضي بالهرمونات</td><td colspan="2">* نعم</td><td colspan="2">* لا</td></tr>
<tr><td>2</td><td colspan="3">هل سبق لك استخدام العلاج التعويضي بالهرمونات</td><td colspan="2">* نعم</td><td colspan="2">* لا</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">هل تتناولين العلاج التعويضي بالهرمونات للسيطرة على اعراض انقطاع الطمث</td><td rowspan="3">* نعم</td><td rowspan="3">* لا</td><td rowspan="3">3-1 اذا نعم</td><td colspan="2">سبب الاستخدام .....</td></tr>
<tr><td colspan="2">أنواع الهرمونات المستخدمة .....</td></tr>
<tr><td>تاريخ البدء .....</td><td>تاريخ التوقف .....</td></tr>
<tr><td rowspan="3">4</td><td rowspan="3">هل استخدمت أي من الادوية او من المكملات الغذائية</td><td rowspan="3">* نعم</td><td rowspan="3">* لا</td><td rowspan="3">4-1 اذا نعم</td><td colspan="2">سبب الاستخدام .....</td></tr>
<tr><td colspan="2">أنواع الأدوية-المكملات المستخدمة .....</td></tr>
<tr><td>تاريخ البدء .....</td><td>تاريخ البدء .....</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">هل تستخدمي أي علاج اخر للسيطرة على اعراض انقطاع الطمث مثل اليوغا او الوخز يالابر الصينية</td><td rowspan="2">* نعم</td><td rowspan="2">* لا</td><td rowspan="2">5-1 اذا نعم</td><td colspan="2">ماذا تستخدمين حاليا .....</td></tr>
<tr><td colspan="2">هل هذا العلاج فعال
* نعم
* لا</td></tr>
<tr><th colspan="8">ي – التاريخ الوراثي</th></tr>
<tr><td rowspan="4">1-</td><td colspan="7">حددي من فضلك اذا كان أي من أفراد عائلتك يعاني من التالي</td></tr>
<tr><td>ارتفاع ضغط الدم</td><td>نوبات قلبية</td><td>سكتات دماغية</td><td>مشاكل في الدم</td><td colspan="2">تجلطات</td></tr>
<tr><td>نزيف</td><td>مياه العين الزرقاء</td><td>هشاشة العظام</td><td>كسور في الحوض</td><td colspan="2">سكري</td></tr>
<tr><td>سرطان الثدي</td><td>أي سرطان اخر</td><td>اكتئاب</td><td>زهايمر</td><td colspan="2">انيميا</td></tr>
</table>

ز - العـــادات الشـــخصيــة					
-1	هل تمارسين التمارين الرياضية	* نعم	* لا	اذا نعم	يوميا – اسبوعيا – شهريا – نادرا نوع الرياضة:..... القترة الزمنية:.....
-2	كم عدد الوجبات التي تتناولينها يوميا				
-3	هل تحاولين ان تاكلي نوع غذائي خاص	قليل الدهون	قليل النشويات	غني بالبروتين	غني بالخضروات
-4	هل تتناولين مشتقات الألبان	* نعم			* لا
-5	كم حصة تتناولين من الفواكه يوميا				
-6	كم حصة تتناولين من الخضروات يوميا				
-7	كم حصة تتناولين من الاسماك اسبوعيا او شهريا				
-8	هل تتناولين أي مشروبات عشبية	* نعم	* لا	اذا نعم	يوميا – اسبوعيا - شهريا
-9	هل تدخنين	* نعم	* لا	اذا نعم	اذا لا
				كم سيجارة يوميا	هل سبق ودخنتي *نعم * لا
				متى بدأتي التدخين	كم كانت مدة التدخين .....
-10	هل تستخدمي نوع اخر من التبغ	* نعم	* لا	اذا نعم، نوع التبع	مدة التدخين .....
-11	هل تقومين باستهلاك مشروبات تحتوي على الكافيين مثل القهوة او الشاي او المشروبات الغازية	* نعم	* لا	اذا نعم، النوع	كم مشروب .....

ع – التوجهات الشخصية					
1	كيف تقيمين صحتك العامة	*ممتازة	* جيدة	* متوسطة	* فقيرة
2	ما هي اهم الضغوطات في حياتك	*النقود	* الابناء	*عمل المنزل	* العمل
3	الى أي مدى تؤثر هذه الضغوطات على حياتك	*الى حد كبير	*متوسط	* قليل	* لا تؤثر
4	كيف تتعاملين مع الضغوطات	* بشكل جيد جدا	* بشكل جيد	* بشكل متوسط	* بشكل ضعيف
5	كيف تقيمين معرفتك السابقة بمرحلة سن الامل	* جيدة جدا	* جيدة	* متوسطة	* ضعيفة
6	كيف تحصلين على المعلومات الخاصة بهذه المرحلة	* من الكتب والمجلات	* من التلفزيون والانترنت	* من العائلة والاصدقاء	* من الاطباء
7	كيف تنظرين الى هذه المرحلة	بشكل ايجابي بمعنى ان سن الأمل راحة من الدورة الشهرية ووسائل منع الحمل	بشكل سلبي بمعنى ان سن اليأس يعني عدم القدرة على الانجاب وخسارة مرحلة الشباب	آخر، اشرحي	
8	كيف تنظرين نحو العلاج التعويضي بالهرمونات	بشكل ايجابي، بمعنى ان هذا النوع من العلاج ملائم لبعض السيدات	بشكل سلبي، مثلا انا لا احبذ تناول أي هرمونات		

المعرفة – الموقف – السلوك			
أ- المعرفة تجاه سن الأمل			
1	العوامل الوراثية تؤثر على توقيت سن الأمل	* نعم	* لا
2	يحدث سن الأمل كنتيجة لارتفاع الهرمونات الجنسية عند النساء	* نعم	* لا
3	يحدث الجفاف المهبلي في هذه المرحلة	* نعم	* لا
4	معظم النساء يتعرضن لتغيرات في طبيعة الدورة الشهرية قبل حصول الانقطاع التام لها	* نعم	* لا
5	أعراض هذه المرحلة، يمكن الوقاية منها ويمكن علاجها	* نعم	* لا
6	التدخين يؤثر على توقيت حدوث سن الأمل	* نعم	* لا
7	التدخين لا يؤثر على حدة أعراض هذه المرحلة	* نعم	* لا
8	التمارين الرياضية تعتبر ممارسات مفيدة بعد هذه المرحلة	* نعم	* لا
9	يزيد مستوى التوتر والاكتئاب بعد هذه المرحلة	* نعم	* لا
10	خلال سنة واحدة بعد الانقطاع التام للدورة الشهرية، استخدام وسائل منع الحمل ضروري	* نعم	* لا
11	معظم السيدات يعانين من الهبات الحارة في هذه المرحلة	* نعم	* لا
12	تردد وحدة الهبات الحارة يزداد مع الوقت خلال هذه المرحلة	* نعم	* لا
13	انقطاع الدورة الشهرية يقلل من حدوث الالتهابات المصاحبة للعدوى في الأجهزة التناسلية	* نعم	* لا
14	يزيد وزن النساء في هذه المرحلة وتزيد نسبة تعرضهن للسمنة	* نعم	* لا
15	تقل نسبة حدوث أمراض القلب والأوعية الدموية عند النساء بعد هذه المرحلة	* نعم	* لا
16	تزيد نسبة ترقرق العظام عند النساء بعد هذه المرحلة	* نعم	* لا
17	يزيد الجفاف وانكماش الجلد عند النساء في هذه المرحلة	* نعم	* لا
18	تسبب هذه المرحلة أنواع مختلفة من السرطان	* نعم	* لا
19	تحدث مشاكل التبول في هذه المرحلة	* نعم	* لا
20	يحدث سلس البول في هذه المرحلة	* نعم	* لا

ب – الموقف						
	البيـــــــان	لا اوافق كليا	لا اوافق	الى حد ما	أوافق	اوافق كليا
1	تعتبر هذه المرحلة، مرحلة الوحدة عند النساء	*	*	*	*	*
2	هذه المرحلة هي مرحلة التخلص من مشاكل الدورة الشهرية ووسائل منع الحمل	*	*	*	*	*
3	كل امرأة تقدر على العناية بنفسها من خلال التدريب ومن خلال ايمانها بهذه الضرورة	*	*	*	*	*
4	تعتبر هذه المرحلة بداية لتعطيل وإعاقة المرأة	*	*	*	*	*
5	حياة المرأة خلال هذه الفترة أسعد من حياتها خلال الفترة السابقة	*	*	*	*	*
6	انقطاع الطمث يقلل من جمال مظهر المرأة	*	*	*	*	*
7	تعتبر هذه المرحلة بداية لحياة جديدة ولفترة نضج ثانية خلال حياة المرأة	*	*	*	*	*
8	يُنظر لهذه المرحلة على انها خسارة لمرحلة الشباب	*	*	*	*	*
9	الأعراض النفسية المرتبطة بهذه المرحلة تؤثر على جودة حياة المرأة	*	*	*	*	*
10	تعتبر هذه المرحلة بداية لفترة أمراض جديدة في حياة المرأة	*	*	*	*	*

ج- الســـــلـوك			
1	هل قمتِ باستشارة الطبيب في بداية هذه المرحلة	* نعم	* لا
2	هل أبديتِ تجاوباً مع العلاج والنصائح المرتبطة بهذه المرحلة	* نعم	* لا
3	هل خضعتِ لأية فحوصات فيزيائية أو طبية في بداية هذه المرحلة	* نعم	* لا
4	هل بدأتِ بممارسة نشاطات محببة اليكِ بعد وصولك لهذه المرحلة	* نعم	* لا
5	هل تتناقشين في أعراض سن الأمل مع الآخرين	* نعم	* لا
6	هل تقومين بممارسة الرياضة بعد وصولك لهذه المرحلة	* نعم	* لا
7	هل تأثرت علاقاتك الاجتماعية مع الآخرين بشكل إيجابي بعد سن الأمل	* نعم	* لا
8	هل تبنيتِ نظام غذائي صحياً أكثر بعد دخولك هذه المرحلة	* نعم	* لا
9	هل أقلعتِ عن بعض العادات الصحية السيئة بعد هذه المرحلة	* نعم	* لا
10	هل حاولتِ الحفاظ على مظهرك الجميل بعد هذه المرحلة	* نعم	* لا

جودة الحيـــــاة						
	أي من هذه الاعراض تزعجك حاليا	لا تزعجني	قليل	متوسط	كثير	تزعجني جدا
1	الهبات الحارة، التعرق	*	*	*	*	*
2	مشاكل في القلب (تغير في ضربات القلب، ضيق تنفس،---)	*	*	*	*	*
3	مشاكل في النوم (في الوقوع في النوم، في استمرار النوم، الاستيقاظ مبكرا،----)	*	*	*	*	*
4	الشعور بالاكتئاب (الاحباط، الحزن، تقلب المزاج، الرغبة في البكاء،---)	*	*	*	*	*
5	الشعور بالعصبية (الحساسية الزائدة، قلة الصبر، عدم تحمل الاخرين،---)	*	*	*	*	*
6	الشعور بالقلق (الارتباك، عدم الراحة الداخلية،--- -)	*	*	*	*	*
7	الانهاك الجسدي و العقلي (ضعف الأداء العام، ضعف التركيز، النسيان،---)	*	*	*	*	*
8	مشاكل في المثانة (صعوبة في التبول، الحاجة المستمرة للتبول، سلس البول،----)	*	*	*	*	*
9	جفاف في منطقة المهبل (شعور بالحرقان أو الحكة،---)	*	*	*	*	*
10	مشاكل في العضلات و المفاصل (الام في المفاصل، روماتيزم،----)	*	*	*	*	*

Annex (3): The study quantitative instrument - English Study questionnaire

Al-Quds University

School of Public Health

Dear participant; I am Sally Mohammed Salha, studying at Al-Quds University. I am planning to conduct a research study on the menopause, which I invite you to take part in. The study aims to explore the women's perceptions regarding menopause. I am going to give you information and invite you to be part of this research.

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you receive at this clinic will continue and nothing will change. The information that we collect from this research project will be kept confidential. Information about you that will be collected during the research will be put away and no-one but the researcher will be able to see it. Any information about you will have a number on it instead of your name. Only the researcher will know what your number is. It will not be shared with or given to anyone. This study is self-funded and findings will be used only for the research purpose.

You do not have to take part in this research if you do not wish to do so. There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain.
You may feel emotional or upset when answering some of the questions. Tell the interviewer at any time if you wish to take a break or stop the interview. It is your choice and all of your rights will still be respected.

Thanks a lot for your participation

Sally Mohammed Salha

Al-Quds University

Certificate of Consent

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.

Name of Participant_____

Signature of Participant _____

Date _____

Day/month/year

WOMEN'S PERSPECTIVES ABOUT MENOPAUSE IN GAZA STRIP

DATA COLLECTION QUESTIONNAIRE

Serial Number		**Date of Data collection**			
(1) BASIC INFORMATION					
A- PERSONAL INFORMATION					
1	**Name (optional)**				
2	**Address**				
3	**Age**		**3.1- Date of Birth**		
5	**Phone number**				
6	**Marital status**	□ Single	□ Married	□ Divorced	□ Widowed
7	**Citizenship**			Non-refugee	Refugee
8	**Employment status:**	□ Unemployed	□ Employed	□ Retired	**8.1 If employed, Occupation:** _____ _____ ____
9	**Educational status:**	□ None	□ Primary/ Secondary school	□ College/ University degree	□ Post Graduate degree (Diploma, Master, Ph.d)
10	**How many members does your family contain?**	Number:_____ ___	**10.1 How many of them works?**		Number: _____ ____
11	**Income (Shekel)**	□ <1000	□ 1000-3000	□ 3,000-5,000	□ > 5,000
12	**Are you considered as the main breadwinner in your family?**			□ Yes	□ No

B-	**Height and Weight Information *(Please provide information by Meters for Height and KGs for Weigh)***			
1	**What is your current height?**			
2	**What is your maximum remembered height?**		**2.1 How old were you then?**	
3	**What is your current weight?**			
4	**What is your maximum remembered weight?**		**4.1 How old were you then?**	
5	**What is your lowest remembered weight as an adult?**		**5.1 How old were you then?**	

C-	**MEDICAL HISTORY**				
1	**Have you experienced any of the following symptoms? *(Please check all possible answers)***				
	□ Migraines	□ Incontinence (urine or feces)	□ Losing height	□ Weight loss or gain	□ Anxiety
	□ Depression	□ Stress	□ Fatigue	□ Back pain	□ Dizziness
	□ Chest pain	□ Easy bruising	□ Sleeping	□ Hair loss or growth	□ Frequent falling (disorientation)
	□ Indigestion	□ Frequent nausea or vomiting	□ Diarrhea	□ Constipation	□ Bloody or black bowel movement
	□ Seizures	□ Suicidal thoughts	□ Eyesight	□ Mood swings	□ Muscle or joint pain
2	**Have you had any of the following diseases? *(Please check all possible answers)***				
	□ Cholesterol	□ Blood pressure	□ Varicose veins	□ Arthritis	□ Asthma
	□ Hypothyroidism	□ Stroke	□ Endometriosis	□ Osteoporosis	□ Blood clots
	□ Liver disease	□ Infertility	□ Cataracts	□ Hepatitis	□ Gallbladder
	□ Macular degeneration	□ Teeth or gums disease	□ Diabetes	□ Colitis	□ Lactose intolerance
	□ Skin disease	□ Breast disease	□ Broken bones	□ Cancer	□ Heart attack
	□ Hyperthyroidism	□ Fibroids	□ Anemia		

3	**Have you ever tested any of the following? *(If yes, please provide date and result of last testing)***			
3.1	**Blood sugar**	□ Yes Date: - _____ □ Normal □ Abnormal □ Do not know		□ No
3.2	**Blood pressure**	□ Yes Date: - _____ □ Normal □ Abnormal □ Do not know		□ No
3.3	**Hemoglobin**	□ Yes Date: - _____ □ Normal □ Abnormal □ Do not know		□ No
3.4	**Cholesterol**	□ Yes Date: - _____ □ Normal □ Abnormal □ Do not know		□ No

D-	**GYNECOLOGY HISTORY**					
1	**How old were you when you got your first period?**				_____ _____	
2	**Were your periods usually regular?**		□ Yes		□ No	□ Do not know
3	**How many days does your period last?**		□ Less than a week		□ A week	□ More than a week
4	**Were your periods painful?**	□ Yes	□ No	**4.1 If yes, how painful?**		□ Mild □ Moderate □ Severe
5	**Did you have spotting or bleeding between periods?**				□ Yes	□ No
6	**Did you have any problems in the days before, during or post your period with any of the following? (*Please mark all possible options)***					
	6.1 Pre-menstrual □ Mood swings □ Headache □ Bloating □ Abdominal cramps □ Lower back pain		***6.2 During period*** □ Mood swings □ Headache □ Bloating □ Abdominal cramps □ Lower back pain		***6.3 Post-menstrual*** □ Mood swings □ Headache □ Bloating □ Abdominal cramps □ Lower back pain	
7	**What was your age when you had your last period?**				- _____	

				_____	
8	**Was your menopause**	□ Spontaneous (natural)	□ Surgical (removal of both ovaries)	□ Due to chemotherapy or radiation therapy	□ Other, explain: _____ _____ _____ _____ _____ _____ _

E- OBSTETRICAL HISTORY						
1	**Have you ever used any birth control method**	□ Yes	□ No	**If yes, please indicate your birth control methods**	***Method***	
					□ Pills	
					□ IUD	
					□ Injectable Hormone	
					□ Implanted Hormone	
					□ Condom	
					□ Natural family planning	
					□ Others, specify	
2	**How many times have you been pregnant?**				Number: _____ _____	
3	**What is the number of your**	Full term births: Number: _____		Premature births: Number: _____	Miscarriage/ Abortions: Number: _____	Living children: Number: _____ ___
4	**How old were you when your first child was born**				_____ ___	
5	**How old were you when your last child was born?**					
6	**Any complications during pregnancy, delivery or postpartum ?**	□ Yes	□ No	**6.1 If yes, please explain**		
F- MEDICATION HISTORY						
1	**Have you ever listened about hormone replacement therapy?**				□ Yes	□ No
2	**Have you ever used hormone replacement therapy?**				□ Yes	□ No

3	**Have you used hormone therapy for menopause?**	□ Yes	□ No	**3.1 If yes, please indicate**	For what reasons?	
					Type of hormones you are currently use?	
					Date started? _____ ___	Date stopped ?
4	**Have you used any other medications and supplements (such as vitamins, calcium, herbs)?**	□ Yes	□ No	**4.1 If yes, please indicate**	For what reasons? _____ _____	
					Type of hormones you are currently use? _____ _____	
					Date started? _____ ___	Date stopped ? _____
5	**Have you used any other therapy for menopause (such as acupuncture or yoga)?**	□ Yes	□ No	**5.1 If yes, please indicate**	Of these, what are you currently using? _____ _____	
					Is this therapy helpful? □ Yes □No	

G- FAMILY HISTORY

1	**Please indicate if any of your family members (mother, father, sister, brother, grandparent) have had any of the following?**				
	□ High blood pressure	□ Heart attack	□ Stroke	□ Blood problems	□ Blood clots
	□ Bleeding tendency	□ Glaucoma	□ Osteoporosis	□ Hip fracture	□ Diabetes
	□ Breast cancer	□ Other cancer	□ Depression	□ Alzheimer	□ Anemia

H- PERSONAL HABITS

1	**Do you exercise?**	□ Yes	□ No	**1.1 If yes, please indicate**	□ Almost daily □ 3 times per week □ Occasionally □ Rarely	
					What do you practice?	
					For how long?	
2	**How many meals do you consume daily?**				Number of meals: _____	
3	**Do you try special diet?**	Low-fat	Low carbohydrate -		High protein	Vegetarian
4	**Do you consume dairy products?**				□ Yes	□ No
5	**How many servings of fruits do you consume daily?**				Number: _____	
6	**How many servings of vegetables do you consume daily?**				Number: _____	
7	**How many servings of fish do you consume weekly? Or monthly?**				Number: _____	
8	**Do you consume any herbal drinks?**	□ Yes	□ No	**8.1 If yes, please indicate frequency**	□ Daily □ Weekly □ Monthly	
9	**Do you currently smoke cigarettes?**	□ Yes	□ No	**9.1 If Yes:**	**10.2 If No:**	
				How many per day? Number: _____	Have you ever smoked? □ Yes □ No	
				When did you start? Date: _____	For how long? Years: _____	
10	**Do you use any other type of tobacco**	□ Yes	□ No	**10.1 If yes, please indicate frequency**	Type: _____	
11	**Do you consume drinks with caffeine (coffee, tea, soda drinks)?**	□ Yes	□ No	**11.1 If yes, please indicate daily cups?**	Number: _____	
I- PERSONAL PERCEPTION						
1	**How do you consider your health?**	□ Excellent	□ Good	□ Fair	□ Poor	
2	**What are the current major stressors in your life**	□ Money	□ Children	□ Housewo	□ Work	

				rk	
3	**How do you classify the effect of your stressors on your life**	□ Severe	□ Moderate	□ Minor	□ Minimal
4	**How do you handle stress**	□ Very well	□ Well	□ Moderate	□ Poorly
5	**How would you rate your knowledge about menopause?**	□ Very good	□ Good	□ Fair	□ Little knowledge
6	**How do you get your information about menopause?**	□ Books & Magazines	□ TV & Internet	□ Family & Friends	□ Healthcare Provider
7	**How do you view menopause?**	□ Positive. No more periods. No more worry about contraception.	□ Negative. Loss of fertility. Loss of youth		□ Other views, Please explain: _____ _____
8	**What is your current view regarding hormone replacement therapy for menopause?**	□ Positive. Hormone therapy is appropriate for some women			□ Negative. I do not support the use of hormone therapy

(2) KNOWLEDGE, ATTITUDE & PRACTICE						
A. KNOWLEDGE ABOU MENOPOSE						
1	**Menopause occurrence is affected by hereditary background**			□ Yes		□ No
2	**Menopause occurs due to increasing sexual hormones**			□ Yes		□ No
3	**Menopause causes different types of cancer**			□ Yes		□ No
4	**Menopause occurrence is preceded by menstruation disorder**			□ Yes		□ No
5	**Menopause symptoms are preventable and curable**			□ Yes		□ No
6	**Menopause time occurrence is affected by smoking affects the time of**			□ Yes		□ No
7	**Severity of symptoms and complications of menopause are not affected by smoking**			□ Yes		□ No
8	**Physical exercises are beneficial practices after menopause**			□ Yes		□ No
9	**Menopause increases the level of stress and depression feelings**			□ Yes		□ No
10	**Most of the women experience hot flushes in the menopause period**			□ Yes		□ No
11	**The frequency and severity of hot flushes increases by time**			□ Yes		□ No
12	**Menopause decreases genital infections**			□ Yes		□ No
13	**Menopause causes vaginal dryness and skin shrivel**			□ Yes		□ No
14	**Menopause decreases cardiovascular diseases**			□ Yes		□ No
15	**Menopause increases osteomalacia**			□ Yes		□ No
16	**Menopause increases weight and obesity**			□ Yes		□ No
17	**Menopause causes dysuria**			□ Yes		□ No
18	**Menopause causes urinary frequency**			□ Yes		□ No
19	**Menopause causes dryness and skin shrivel in women**			□ Yes		□ No
20	**During one year after complete stop of menstruation, pregnancy prevention is necessary**			□ Yes		□ No
B. ATTITUDE						
	Attitudes	**Completely Do Not Agree**	**Don not Agree**	**Moderately Agree**	**Agree**	**Completely Agree**
1	**Menopause is the period of woman's loneliness**	□	□	□	□	□
2	**Menopause is the period of eradicating the problems of**	□	□	□	□	□

	menstruation and preventing pregnancy					
3	**Menopause means the beginning of a life with different diseases**	□	□	□	□	□
4	**Menopause is the beginning of the period of women's disablement**	□	□	□	□	□
5	**Woman's life in the menopause period is more delightful than before menopause**	□	□	□	□	□
6	**Menopause decreases the grace of woman's appearance**	□	□	□	□	□
7	**Menopause is the beginning of another life and second maturity of women**	□	□	□	□	□
8	**Menopause is perceived as loss of youth**	□	□	□	□	□
9	**Menopausal psychological symptoms affect quality of life**	□	□	□	□	□
10	**Every woman can care for herself through training and self-confidence after menopause**					

C. PRACTICE			
1	**Did you consult a physician at the onset of menopause?**	□ Yes	□ No
2	**Have you shown compliance with treatment /advices, if you have had any?**	□ Yes	□ No
3	**Have you undergone any physical examination /investigation at the onset of menopause?**	□ Yes	□ No
4	**Have you adopted favorable practices such as beginning a new project in post-menopausal years?**	□ Yes	□ No
5	**Did you discuss menopausal symptoms with others?**	□ Yes	□ No
6	**Do you practice physical exercises after menopause?**	□ Yes	□ No
7	**Have your social relationships with family and friends been affected positively?**	□ Yes	□ No
8	**Have you adopted more healthy diet regimen?**	□ Yes	□ No
9	**Have you quitted some bad habits such as smoking or consuming unhealthy diet?**	□ Yes	□ No
10	**Have you tried to maintain a beautiful appearance after menopause?**	□ Yes	□ No

(3) QUALITY OF LIFE						
A. MENOPOSE REATING SCALE						
Which of the following symptoms apply to you at this time?		**None**	**Mild**	**Moderate**	**Severe**	**Very Severe**
1	**Hot flushes, sweating (episodes of sweating)**	□	□	□	□	□
2	**Heart discomfort (unusual awareness of heart beat, heart skipping, heart racing, tightness)**	□	□	□	□	□
3	**Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early)**	□	□	□	□	□
4	**Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings)**	□	□	□	□	□
5	**Irritability (feeling nervous, inner tension, feeling aggressive)**	□	□	□	□	□
6	**Anxiety (inner restlessness, feeling panicky)**	□	□	□	□	□
7	**Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration,**	□	□	□	□	□
8	**Bladder problems (difficulty in urinating, increased need to urinate, bladder incontinence)**	□	□	□	□	□
9	**Dryness of vagina (sensation of dryness or burning in the vagina, difficulty with sexual intercourse)**	□	□	□	□	□
10	**Joint and muscular discomfort (pain in the joints, rheumatoid complaints)**	□	□	□	□	□

Annex (4): An official letter of approval from the Helsinki Committee in the Gaza Strip

المجلس الفلسطيني للبحث الصحي
Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار
Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee
For Ethical Approval

Date: 04/06/2018 Number: PHRC/HC/402/18

Name: Sally Mohammed Salha الاسم:

We would like to inform you that the committee had discussed the proposal of your study about: نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:

Women's Perspectives about Menopause in the Gaza Strip

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/402/18 in its meeting on 04/06/2018 و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

Signature

Member Member

Chairman

Genral Conditions:-
1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-

E-Mail:pal.phrc@gmail.com

Gaza - Palestine غزة - فلسطين
شارع النصر - مفترق العيون

Annex (5): MOH Approval

State of Palestine
Ministry of health

دولة فلسطين
وزارة الصحة

السيد : المحترم

التاريخ:08/08/2018

رقم المراسلة 235221

مدير عام بالوزارة /الإدارة العامة لتنمية القوى البشرية ـ /وزارة الصحة

السلام عليكم ,,,

الموضوع/ تسهيل مهمة الباحثة//سالي صالحة

التفاصيل //
بخصوص الموضوع أعلاه،يرجي تسهيل مهمة الباحثة/ **سالي محمد صالحة**
الملتحق ببرنامج ماجستير الصحة العامة – تخصص علم الأوبئة – كلية الصحة العامة- جامعة القدس أبوديس في إجراء بحث بعنوان:-
"Women's Perspectives about Menopause in the Gaza Strip"
حيث الباحثة بحاجة لعقد مجموعات بؤرية وتعبئة استبانة من عدد من النساء في سن اليأس من المراجعات لعيادات الرعاية في محافظة خانيونس وغزة وشمال غزة.
نأمل توجيهاتكم لذوي الاختصاص بضرورة الحصول على الموافقة المستنيرة من النساء اللاتى هن على استعداد للمشاركة في الدراسة ومن ثم تمكين الباحثة من التواصل معهن، بما لا يتعارض مع مصلحة العمل وضمن أخلاقيات البحث العلمي، ودون تحمل الوزارة أي أعباء أو مسئولية.
وتفضلوا بقبول التحية والتقدير،،،
ملاحظة / تسهيل المهمة الخاص بالدراسة أعلاه صالح لمدة 6 شهر من تاريخه.

محمد ابراهيم محمد السرساوي
مدير دائرة/الإدارة العامة لتنمية القوى البشرية ـ

التحويلات

▪ محمد ابراهيم محمد السرساوي(مدير دائرة)	← رامي عيد سليمان العبادله(مدير عام بالوزارة)	إجراءاتكم بالخصوص(08/08/2018)
▪ رامي عيد سليمان العبادله(مدير عام بالوزارة)	← ماهر محمود عبد الهادي شامية(مدير عام بالوزارة)	إجراءاتكم بالخصوص(09/08/2018)
▪ ماهر محمود عبد الهادي شامية(مدير عام بالوزارة)	← صلاح الدين علي عبد الحفيظ الرنتيسي(مدير دائرة)	لعمل اللازم(12/08/2018)
▪ ماهر محمود عبد الهادي شامية(مدير عام بالوزارة)	← خليل محمد محمود صيام(مدير دائرة)	لعمل اللازم(12/08/2018)
▪ ماهر محمود عبد الهادي شامية(مدير عام بالوزارة)	← عبد الكريم سعيد العبد النجار(مدير دائرة)	لعمل اللازم(12/08/2018)
▪ ماهر محمود عبد الهادي شامية(مدير عام بالوزارة)	← مجدي ابراهيم اشتيوي اضهير(مدير دائرة)	لعمل اللازم(12/08/2018)
▪ ماهر محمود عبد الهادي شامية(مدير عام بالوزارة)	← محمد أحمد محمود ابوسمعان(مدير دائرة)	لعمل اللازم(12/08/2018)
▪ محمد أحمد محمود ابوسمعان(مدير دائرة)	← نضال صلاح محمد المصري(رئيس قسم اداري)	لعمل اللازم(15/08/2018)

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عنوان الدراسة: سن الأمل من منظور النساء في قطاع غزة

إعداد: سالي محمد علي صالحة

إشـراف: د. يحـيـى عـابـد

مـلخص الدراســـة

سن الأمل أو الأمان هو موضوع مهم للغاية بالنسبة للنساء ، حيث تواجه جميع النساء هذه المرحلة خلال حياتهن، وفي معظم الحالات يُنظر إليها على أنها عملية طبيعية للشيخوخة ؛ ومع ذلك ، لم تتم مناقشة المخاوف والأعراض الرئيسية المرتبطة بهذه العملية من قبل في مجتمعنا. هدفت هذه الدراسة إلى استكشاف المعرفة والموقف والسلوك تجاه هذه المرحلة إلى جانب دراسة نوعية حياة النساء المستهدفات.

كانت هذه الدراسة دراسة مقطعية تحليلية، وقد أجريت على 400 امرأة في سن الأمل، تتراوح أعمارهن بين 40 و 60 عامًا ويقمن في غزة لأكثر من عامين، وقد تم العثور عليهن بشكل عشوائي في ثلاثة من مراكز الرعاية الصحية الأولية الرئيسية في قطاع غزة. كانت أداة جمع البيانات عبارة عن استبيان جرت الإجابة عنه من خلال مقابلة أجريت مع جميع السيدات المشتركات، و يحتوي هذا الاستبيان على ثلاثة أجزاء تتعلق بالمعلومات الشخصية للمشتركات، وجزء يتعلق بالمعلومات الخاصة بالمعرفة والموقف والسلوك تجاه سن الأمل، أمل الجزء الأخير فيتعلق بالمعلومات الخاصة بنوعية حياة المشتركات.

أظهرت النتائج الرئيسية لهذه الدراسة أن متوسط عمر النساء كان 52.47 سنة، و 17.8٪ فقط تلقين تعليماً أعلى من المرحلة الثانوية؛ 50٪ لديهم دخل شهري أقل من 1000 شيكل. فيما يتعلق بالصفات الشخصية ، كان 57.8 ٪ يعانون من السمنة المفرطة و 31.5 ٪ يعانون من زيادة الوزن. كان متوسط سن البلوغ 13.7 سنة، بينما كان متوسط سن انقطاع الطمث 47.12 +/- 3.89 سنة ؛ استخدم 55.2 ٪ وسائل تنظيم الأسرة في مرحلة ما من حياتهن. كان متوسط عدد مرات الحمل بالنسبة للمشتركات 7.73 مرة، و14.7٪ عانين من حدوث الإجهاض لأكثر من مرتين في حياتهن. 70٪ كانت تتراوح أعمارهن بين 14-21 سنة في الحمل الأول ، 13.8٪ عانين من حدوث مضاعفات للحمل. فيما يتعلق بعوامل نمط الحياة، استخدمت 35٪ من المشتركات المكملات الغذائية، و 82.8٪ يحاولن اتباع نوع خاص من النظام الغذائي، و 81.5٪ يستهلكن منتجات الألبان. 53٪ يأكلن حصة واحدة من الفواكه يوميًا بينما لا تأكل 10.5٪ من المشتركات أي حصة من الفواكه؛ 53.8٪ يأكلن وجبة واحدة من الخضروات يوميا؛ 36.3٪ يأكلن السمك شهريًا. و 15.3٪ يأكلن

السمك أسبوعيًا. 49.5٪ تقمن بممارسة التمارين الرياضية؛ 19.5 ٪ يقمن بممارستها يوميا، و 15.5٪ يقمن بممارسة التمارين أسبوعيا. 98.75٪ لا يمارسن التدخين. قيمت 42.5٪ من المشتركات صحتهن بأنها متوسطة، و 40.8٪ قيمن صحتهن بأنها جيدة؛ 51.2٪ يتعاملن بشكل جيد مع الضغوطات. قالت 42٪ أن لديهن معرفة جيدة بسن الأمل، وقالت 75.3٪ إن مصدر معلوماتهن حول مرحلة سن الأمل كانت من أفراد العائلة والأصدقاء.

66٪ينظرن إيجابيا لسن الأمل، في حين أن 56.8٪ ينظرن سلبيا للعلاج بالهرمونات البديلة. 84.3٪ لم يسمعن عن العلاج بالهرمونات البديلة من قبل ، ولم يستخدمه منهن سوى 2٪، و 5٪ فقط يستخدمنه حاليًا. كان متوسط درجات المعرفة والموقف والسلوك تجاه سن الأمل، 59.8٪ و60.3٪، و 46.8٪ على التوالي، وبلغ متوسط نوعية الحياة لهن44.9%.

أظهرت الإحصاءات الاستنتاجية أن سن الأمل يتأثر بمؤشر كتلة الجسم ، والحالة الوظيفية ، و عدد مرات الحمل، وشرب الأعشاب، و سن البلوغ إذا كان أكثر من 16 سنة؛ ارتبطت .وقد تبين أن درجة المعرفة تجاه سن الأمل ارتبط بسن المرأة، والحالة الاجتماعية، وحالة اللجوء، والحالة التعليمية، وكونها المعيل الرئيسي للأسرة. أما درجة الموقف فقد تأثرت بحالة اللجوء، والمستوى التعليمي وممارسة التمارين الرياضية؛ النساء اللواتي قيّمن صحتهن على أنها جيدة وأبلغن عن أنهن يمكنهن التعامل مع التوتر بشكل جيد للغاية ، كان لديهن موقف إيجابي أكثر من الأخريات. أما درجة السلوك تجاه سن الأمل فقد تأثرت بالحالة الزوجية، والمستوى التعليمي، وحالة العمل، ومؤشر كتلة الجسم، وكون المرأة المعيل الرئيسي لأسرتها. درجة نوعية الحياة. تأثرت درجة نوعية الحياة للنساء بالحالة الزوجية، والحالة الوظيفية، بكون المرأة المعيل الرئيسي للأسرة أم لا، عدد أيام الحيض، وشدة الأعراض المصحوبة بالطمث، وعدد وجبات الطعام اليومية، و تناول المشروبات العشبية و الكافيين، و مختلف الضغوطات الحياتية.

بالإضافة إلى ما سبق، فقد وجد أن درجة الممارسة مرتبطة بشكل إيجابي بدرجة المعرفة، في حين أن المعرفة والموقف لا يرتبطان. وارتبطت درجة نوعية الحياة بكل من درجة المعرفة و درجة الموقف.

توصي هذه الدراسة بأن هناك حاجة لإجراء دراسات إضافية متعددة الأهداف لتوضيح معمق للعلاقات بين المعرفة والموقف والسلوك والأعراض المصاحبة لهذه المرحلة للتمكن من معالجتها بالشكل الصحيح، مع الأخذ بعين الاعتبار الجوانب الفيزيائية والعقلية والنفسية والاجتماعية للنساء خلال الفترات المختلفة لهذه المرحلة. تحديد وجهات نظر المرأة حول هذا الموضوع يمكن أن يعزز تطوير البرامج المفيدة والدراسات المستقبلية لتحسين صحة المرأة خلال سنوات ما قبل و ما بعد هذه المرحلة.