Global Science Research Journals

ISSN: 2449-1802 Vol. 6 (3), pp. 210-224, December, 2018

http://www.globalscienceresearchjournals.org/

Global Journal of Medical, Physical and Health Education

Full Length Research Paper

The knowledge and awareness about risk factors of cardiovascular disease among menopausal women in Jordan

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Received 12 October, 2018; Accepted 2 December, 2018

This study aimed to explore whether Jordanian menopausal women are aware of the risk factors of CVD, through the assessment of the perceptions of Jordanian menopausal women about the risk factor of CVD, in order to provide data for the scope and needs for prevention of CVD among the targeted group. A cross sectional study was conducted among a random sample of (175) females aged between (18-50) years and more in the Northern District region of Jordan, which includes the governorates of Irbid, Jerash, Ajloun, and Mafraq. The study participants were recruited from primary health care (PHC) centers in the four governorates. The results of the study revealed that family history of heart disease increase your chance to have this disease with a percentage reaches (74.4%). Results related to women responses toward the higher risk to have heart disease after menopause was low (33.1%), results also indicated that cancer is considered as the most dangerous health issues (72.0%) followed by the percentage (23.4%) for the Heart Diseases, while the lowest percentage reached (7.4%) for the diabetes, which is not congruent with other point of view of national institute of nursing research that found that (43%) of female deaths due to cardiac disease, few women view it as a significant health risk. Based on the results of the study, recommendations were provided.

Keywords: Risk Factors, Cardiovascular Disease, Menopausal Women

INTRODUCTION

Major shifts in the patterns of diseases were witnessed in recent decades, in addition to improvements in life expectancy; this age is characterized by intense changes in the diet and lifestyles which have contributed to an epidemic of non-communicable diseases, including Cardiovascular Diseases. This epidemic is accelerating nowadays, in which the effect of nutrition transition and concomitant rise in the prevalence of cardiovascular diseases will be widening to mismatch between health care needs and resources(Jarrah, et al, 2011). Cardiovascular disease (CVD) is among the main causes of death at the global level, accounting for a considerable percentage of fatalities, among both the population of developed and developing countries.Accurate perception of the risk factor of cardiovascular disease by the patient is essential as it definesthe health-related behavior.

According to WHOCardiovascular diseases is considered as a number one cause of deaths globally. (1.2) million womensuffer from it as a number one killer. Cardiovascular diseases (CVD), which are a group of disorders of the heart andblood vessels include, coronary heart disease, peripheral arterial disease, rheumatic heart disease, congenital heart disease (WHO, 2017).

Menopause, which is defined as a time when there has no menstrual periods for 12 consecutive months and no other biological or physiological cause can be identified,

is the end of fertility and childbearing years, thus “change of life”.The menopausal transition habitually occurs between ages(45) and (55), and it usually lasts about (7) years, during which the levels of estrogen and progesterone hormone vary greatly, due to ovarian failure to release them. After menopause; women enter post menopause and become more vulnerable to heart disease and osteoporosis. Consequently, at this time, women should eat a healthy diet and make sure to get a lot of calcium to keep your bone strong (National institute of health, 2017).From pathological view, atherosclerotic disease occurs later in women than in men. A study in Brazil recommended giving estrogen therapy to postmenopausal women to decrease mortality and morbidity rate; especially for those considered at high cardiac risk (Bassan, 1999).

With menopause in women there are many changes that occur as a result of the change of hormones and body nature, and access to menopause, and one of the most important diseases suffered by women after menopause is heart disease, and as everydayhealth site mentioned, there are some symptoms that should not be ignored by women:

- Heart palpitations and palpitations may increase the risk of stroke.
- Shortness of breath is a sign of the incidence of congestive heart failure or coronary artery disease, which is one of the symptoms of atrial fibrillation.
- Headache is also a sign of high blood pressure, which sometimes leads to heart disease.
- Vertigo or dizziness is due to several disorders including diabetes, heart failure, or irregular heartbeat such as atrial fibrillation.
- Chest compression and fullness of signs of heart disease.
- Jaw pain is a sign of heart disease signs and a warning sign for women from heart attacks.
- Swelling of the feet, it is possible to accumulate fluid in the leg due to congestive heart failure.

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Symptoms of heart disease

1.Feeling of pain in the shoulder and arms

The symptoms of heart disease for women differ from men, the most important of which is the woman's feeling of acute pain in the shoulders and arms, especially the right arm. As well as inflammation of the muscles of the shoulder and arm because of the lack of blood flow to them, as a result of blocked heart valves and coronary artery stiffness. So once the woman start feeling sharp convulsions and severe pain in the shoulder and right arm specifically and inability to move or lift it up she has to consult her doctor immediately.

2.Feeling shortness of breath

One of the most common symptoms of serious heart disease, such as angina, heart attack or blockage of the arteries, is the feeling of severe breathing difficulty and inability to breathe in the process of inhalation naturally with a rapid speed in the exhalation process. This is a result of the weakness of the heart muscle, which causes the blockage of the coronary artery, which connects blood to the rest of the body. The woman also feels a sharp chest pain and a tingling in the breast like a needle or knife in her chest.

3.Dizziness and nausea

A woman with heart attack or heart valve problems may experience dizziness and dizziness with a feeling of nausea and vomiting. Perhaps a fainting and loss of consciousness as well as a feeling of bloating in the abdomen and fullness of the stomach and this is the result of the imbalance that occurs in pumping blood from the heart to the stomach and digestive system and intestines.

4.Pain in the abdomen and back

The symptoms of heart disease in women are pain in the lower back and thighs and back with swollen hands and feet. This is due to the deposition of excess salts and the accumulation of toxins in the body due to high cholesterol levels in the blood. Women also experience chronic abdominal pain due to abdominal cramps and bowel muscles. This is a result of heart disease, myocardial infarction, low blood flow to the heart, and as a result of endocarditis infarction and heart valve inflammation. These chronic heart diseases may all adversely affect the abdominal muscles and spine vertebrae in the lower back.

5.Increase in weight and feeling tired

When women also feel a significant increase in their weight without eating greedily they should know that there is a high probability that there are problems in the heart valves and narrowing in the blood veins and this is because of some imbalances and changes in the rates of harmful cholesterol in the blood. Women feel weak and very tired in the muscles of the body and the feeling of fatigue and exhaustion just to do any hard work.

The consensus statement of The International menopause Society (2009)concluded that; the risk of cardiovascular disease increases after menopause; regardless of the age at which this occurs.Therefore, blood pressure management and assessment of other risk factors for cardiovascular disease are recommended in the routine management of all menopausal women (international menopausal Society Consensus, 2009).

WHO(2017) recommends for people with cardiovascular disease or who are at high cardiovascular risk, due to the presence of one or more risk factors such as hypertension, diabetes, hyperlipidemia or already established disease,having early diagnosisand management using counseling and medicines as appropriate.

American heart association(2015) indicates that menopause, although not a cause of a cardiovascular diseaseis related to some risk factors that as a high fat diet, smoking, and other unhealthy habits, in addition decreases level of physical activitywhich can also increase the risk to have this disease. Heart attacks among women increase about (10) years after menopause.Moreover, estrogen level may be a factor in heart disease increase among post-menopausal women; and many changes develop after menopause, such as; elevation in blood pressure, LDL cholesterol (bad cholesterol) also tend to increase and being physically inactive are more common.All of the previous factors increase the risk of heart attack and stroke in menopausal women (The American Collage of obstetrician and gynecologists, 2015).

A consensus statement of European Cardiologist and Gynecologist listed the key risk factors that should be controlled in pre-menopausal period, including: hypertension, dyslipidemia, obesity, and other metabolic syndrome, with avoidance and control of diabetes. Hypertension is a critical one and should be prevented and alleviated as possible(Collins et al, 2007)

American heart association recommends practicinga set of healthy habits in order to fight heart disease among menopausal women, such as eating healthy whole foods (4.5 cups of fruit and vegetable ad 6-8 cups serving in a whole grains per day), doing exercise at least 150 minute per week, and routine health care (The American Collage of obstetrician and gynecologists (2015; Collins et al, 2007).

According to the consensus of The Center for Disease Control and Prevention (CDC) in Jordan, in November, 2013 ischemic heart disease the main cause of death in Jordan (18%) . Old existingCVD statistics shows that CVDs were responsible for 34% of female mortality and 43% of male mortality (Jordanian Ministry of Health statistics, 1998).

The major problem is whether Jordanian menopausal women are aware of the risk factors of CVD. The focus of this paper is, therefore, to assess the perception of Jordanian menopausal women on the risk factor of CVD, in order to provide data for the scope and needs for prevention of CVD among the targeted group.The aim of this study was to identify the knowledge and awareness about risk factor of cardiovascular disease among menopausal women in Jordan.

Significance of the Study

Cardiovascular disease is a common disease caused by atherosclerosis Especially in adults aged 40 years or older. It is known that oxidation damage has a detrimental effect on the cellular functions of a number of pathological conditions. There is a significant association between menopause in women and the chance of heart disease. It is necessary to explore the relationship between Cardiovascular Disease and Menopause, the researcher tried to find the answer of some questions.

Purpose of the Study

The purpose of this study is to explore whether Jordanian menopausal women are aware of the risk factors of CVD, through the assessment of the perceptions of Jordanian menopausal women about the risk factor of CVD, in order to provide data for the scope and needs for prevention of CVD among the targeted group.

Statement of the Problem

The individual experiences many stressful situations in his life that include undesirable experiences and events that may involve a lot of sources of stress and risk factors. These stressors at various levels have serious psychological and physical effects, such as physical disorders and chronic diseases such as heart disease. Psychological and emotional stress plays a role in driving heart patients to death,There is a link between psychological stress and menopause, so this study tries to reveal the relationship between them from the point of view of the sample of the study, thus, the study attempts to answer the following questions:

Research Questions

1. What is the level of awareness of Jordanian women of cardiovascular disease as the leading cause of death?
2. What is the participants' assessment of their weight and body image?
3. What is the Jordanian women knowledge and perception of cardiovascular disease as well as actual risk of cardiovascular disease?
4. Is increased awareness and knowledge associated with increased action to lower risk of heart disease?

Definition of Terms

Cardiovascular Disease: It is one of the chronic and advanced diseases as well as of the psychological diseases, which come in response to the emotional pressure associated with the lifestyle of the patient so that the majority of the symptoms of heart patients in the heart area there is no evidence of the presence of heart disease and organic symptoms in palpitations, shortness of breath, , Pain, edema, heart rate disorder ..... etc.So that the heart is a sensitive member who embodies in his strikes the emotional human feeling and social interaction and indicates the vitality of the body.

Menopausal Women: The period of menopause is the interruption of the menstrual cycle for 12 consecutive months, and more. Women generally reach the age of 51 years. But can be obtained at an early age, ie, before forty because of early failure of the ovary, as a result of

surgery during surgery or exposure to chemotherapy or radiation intensive.

LITERATURE REVIEW

Several Studies were conducted in developing countries, other than Jordan, aiming to explore the perception of the risk factors of cardiovascular diseases.A study conducted in selected sites in Botswana, the population of which were women in 2013, showed the low levels of knowledge and awareness of menopause [6].The common changes identified were weakening in bone (78%), changes in sex drive (69%), and difficulty working56.2%). The majority of women perceived menopause as freedom from menstrual cycle(85%), and cost saving(65%)[6].

A Jordanian study shows women's perception about menopause as 'a life transition' which included: a time of no more reproductive obligation, changing from obligations of reproductive roles and responsibilities to freedom, rest and relief; a time for managing prei-menopausal symptoms; and a time for growing into a wise women and accepting aging as a part of life[8].

A study conducted in Al-Ain, United Arab Emirates about women's knowledge, attitude and practice towards menopause and Hormone replacement therapy showed that a substantial of women had poor knowledge about menopause (67%), and this knowledge varied significantly with level of education and nationality (p0.05) [15].

Respondents in a study conducted in Nepal perceived dietary factors, particularly consumption of salty, fatty, and oily food, as the main determinants of CVD, and unanimously linked smoking, alcohol intake, and high blood pressure with cardiac ailments but reported mixed opinion regarding the causal role of body weight and physical inactivity. All respondents understood the importance of lifestyle modification and relied upon health professionals for information and motivation. Respondents remarked that community awareness of CVD was inadequate and that medical doctors or trained local people should help increase awareness) [25].

Several other studies were conducted in developed countries[19, 20, 21, 22] .A study conducted in USA, showed that44% of the deaths from coronary disease between 1980-2000were attributed to changes of cardiac risk factors, including reductions in cholesterol(24%), systolic blood pressure(20%), smoking prevalence (12%), and physical inactivity (5%). On the other hand the study showed an increase in the body mass index, and the prevalence of diabetes, which accounted for an increased number of deaths[12] (8% and 10% respectively).

A Canadian study[23] Sought to examine perception of cardiovascular risk factors among 2419 women 55 to 74 years old. Perception of women with heart disease risk factors such as smoking and hypertension that these were risk factors for heart disease was inadequate, and low in comparison with than women without these factors. In addition, women with high cholesterol levels were less aware that this was a major cause of heart disease. Women who have heart disease risk factors may not know the significance of these characteristics and that they place them at risk.

A recent study conducted in USA[24] 53% of patients considered themselves at risk for heart disease, and even fewer reported being told they were at risk (46%) or that their health care provider had discussed heart disease and risk modification (49%). Women were less likely than men to be told they were at risk (relative risk: 0.89; 95% confidence interval: 0.84 to 0.96) or to have a provider discuss risk modification (relative risk: 0.84; 95% confidence interval: 0.79 to 0.89). There was no difference between women and men for self-perceived risk.

In an attempt to determine the most important factors affecting heart disease, Bunker (2003) conducted a survey of the research that was written between "(1960 – 2001)" using Psyinfo& Medline and using 47 key words referring to heart disease and potential factors. The methodological conditions identified by the researcher In 57 studies, it was found that the most important factors are depression, social isolation, low social support, exposure to disasters, serious accidents, aggression, anger, occupational nature and high anxiety (Bunker, 2003)

Study Design and Sample

A cross sectional study conducted among a random sample of 175 female aged between 18-50years and more in the Northern District region of Jordan, which includes the governorates of Irbid, Jerash, Ajloun, and Mafraq . The study participants were recruited through random sampling method from primary health care (PHC) centers in the four governorates. Table (1) shows the descriptive statistics of the sample of the study.

Table 1: Descriptive statistics of the personal variables

Variable	Group	Frequency	Percentage
Age	18-29year	16	9.1
	30-39 year	55	31.4
	40-49 year	90	51.4
	50year and more	14	8.0
	Total	175	100.0
Job	Student	2	1.1
	Employee	2	1.1
	I don't work	171	97.7
	Retired	0	0.00
	Total	175	100.0
Qualifications	Illiterate	32	18.3
	Basic	70	40.0
	Secondary	44	25.1
	Diploma	21	12.0
	BA	6	3.4
	Postgraduate	2	1.1
	Total	175	100.0
Address	The village	48	27.4
	The city	127	72.6
	The Badia	0	0.00
	Total	175	100.0
Social status	Single	31	17.7
	Widowed	10	5.7
	Divorced	7	4.0
	Married	127	72.6
	Total	175	100.0
Monthly income	Less than 500 JD	54	30.9
	500-1000JD	109	62.3
	More than 1000JD	12	6.9
	Total	175	100.0
health insurance	governmental	60	34.3
	Special	110	62.9
	There is no	5	2.9
	Total	175	100.0
Have you entered the age of hope	Yes	32	18.3

Table 1 Cont'd

	No	143	81.7
	Total	175	100.0
Which of the following health issues is the most dangerous for the mother?	Cancer	84	48.0
	Diabetes	13	7.4
	breast cancer	20	11.4
	Cervical cancer	17	9.7
	Heart Diseases	41	23.4
		175	100.0

Table (1) shows that the highest percentage of participants (51.4%) belonged to the age group "40-49", followed by the age group "30-39 years old", with a percentage of (31.4%), and the age group "18-29 year" and "50 years and more" had the lowest percentages below 10%. Concerning the current job status of the participants, results show that most of the participants (97.7%) were jobless, while (1.1%) were employed, and a similar percentage were students (1.1%). In terms of education, the highest percentage (40.0%) of the participants had basic education (elementary stage), followed by those with secondary education (25.0%), and those who were illiterate (18.3%), while the percentage of the participants with BA degree was (3.1%). A large percentage of the participants live in city (72.6%), followed by those who live in the countryside (27.4%). Concerning the social status of the participants, results show that (72.6%) of the participants were married, and (17.7%) were single, while the remaining number of participants were either widowed (5.7%), or divorced (4.0%). Most of the participants (62.3%) belonged to the group of (500-1000JD) in terms of the monthly income of the family, followed by the group of (less than 500JD), which had a percentage of (30.9%), and the group of (more than 1000JD) had the lowest percentage (6.9%).

(62.9%) of the participants of the study had a private-sector provided insurance, and (34.3%) of the participants had a governmentally provided insurance. A low percentage of the participants (2.9%) had no health insurance. Most of the participants (81.7%) had entered the age of hope, while the remaining percentages were below the age of hope. (48.0%) of the participants consider cancer as the most dangerous issue for the woman, followed by heart diseases (23.4%).

Study instrument

In an exploratory descriptive design**,** a structured self-reported questionnaire was administered to the participants in PHC centers. The questionnaire consisted of four sections to assess women knowledge and awareness of Northern women in Jordan. The first section included the socio-demographic variables, the second one assessed the awareness of women health issue, and the third part contained 26 true/false items from heart disease fact questionnaire (HDFQ-2). It is 25 items measure the cognitive heart disease risk factors, and link between the diabetes and coronary heart disease.

Risk factors assessed included family HX, age, gender, cigarette smoking, physical activity, glycemic control, lipids, blood pressure, weight and a person necessarily knows if heart disease is present.

Section four; comprised 15 questions from Behavioral risk factors surveillance system (BRFSS) questionnaire, it's domains of the centers for disease control and prevention ; which was used to assess participant personal health status including the co-morbidities, medication, weight, blood pressure, exercises, cholesterol, and tobacco use.

Validity and reliability of the questionnaire

Professional translators translated the English version of the questionnaire in Arabic language, and a second bilingual speaker check the Arabic version word by word,and then it was back translated to English. Internal consistency reliability of the Arabic version was assessed using Cronbach-alpha, and it was found suitable for this study.

Ethical consideration

Permission from the selected primary health care centers was obtained before collecting data, and the participant were recruited voluntary. Participantswere assured of confidentiality, anonymity and security by keeping their identities and any other personal information's gathered confidential and never be made public. The published results of this study will contain only statistical or group data from which no individual participant can be identified. Participantswereinformed from the beginning not to answer any question that may make them uncomfortable. In addition subjects informed about the type of data to be collected and that it would be used for scientific purpose.

Results the study

Results related to the first question: What is the level of awareness of Jordanian women of cardiovascular disease as the leading cause of death?

In order to o answer this question of the study, frequencies and percentages for the responses of the participants of thestudy sample on the items of the questionnaire were calculated, andtables (2, and 3) show the results.

Table 2: Frequencies and percentages of correct answers

Item	Frequency	Percentage
Coronary heart disease is the most common cause of death in women in Jordan.	96	54.9
Heart disease develops gradually over many years and can easily go undetected	103	58.9
If you have family history of heart disease, you are at risk for developing heart disease	132	75.4
The older the person is, the greater their risk of having heart disease	71	40.6
Smoking is a risk factor for heart disease	78	44.6
A person who stop smoking will lower their risk of developing heart disease	122	69.7
High blood pressure is a risk factor for heart disease	127	72.6
Keeping blood pressure under control will reduce a person 's risk for developing heart disease	114	65.1
High cholesterol is a risk factor for developing heart disease	80	54.3
If your 'bad' cholesterol (LDL) is high you are at risk for heart disease	70	40.0
Regular physical activity will lower a person's chance of developing heart disease	129	73.7
Walking and gardening are considered exercise that will help lower a person's chance of developing heart disease	114	65.1
Diabetes is a risk for developing heart disease	154	88.0
High blood sugar put a strain for developing heart disease	77	44.0
If your blood sugar is high over several months it can cause your cholesterol level to go up and increase your risk of heart disease	123	70.3
A person who has diabetes can reduce their risk of developing heart disease if they keep their blood sugar levels under control	103	58.9
If a person has diabetes, keeping their cholesterol level under control will help lower their chance of developing heart disease.	91	52.0
People with diabetes tend to have low HDL (good) cholesterol	85	48.6
A person who has diabetes can reduce their risk of developing heart disease if they keep their blood pressure under control	100	57.1
A person who has diabetes can reduce their risk of developing heart disease if they keeping their weight under control.	143	81.7

The results in Table (2) show an acceptable level of knowledge and awareness about risk factor of cardiovascular disease among menopausal women in Jordan. The level of knowledge and awareness varied among the various factors, as reflected in the relevant items. The item concerned with the knowledge about the relationship between diabetes and coronary disease, "Diabetes is a risk for developing heart disease", had the highest percentage of correct answers (88%), followed by another item related also to diabetes "A person who has diabetes can reduce their risk of developing heart disease if they keeping their weight under control.", with (81.7%) of correct responses. The item related to the relationship between bad cholesterol and heart disease "If your 'bad' cholesterol (LDL) is high you are at risk for heart disease", had the lowest percentage of correct responses (40.0%), which indicates that variation exists among the levels of knowledge and awareness about the risk factors of cardiovascular disease.

Table 3: Frequency and percentage for "general health

	Answer	Frequency	Percentage
would you say that your general health is:	Good	21	12.0
	Very good	99	56.6
	Fair	45	25.7
	Poor	10	5.7
	Total	175	100.0
Do you have a history of the following illness	heart disease	6	3.4
	Diabetes	13	7.4
	Cancer	8	4.6
	mental health problem	1	0.6
	heart failure	0	0.00
	Stroke	0	0.00
	art attack	4	2.3
	Angina	13	7.4
	Hypothyroidism	15	8.6
	respiratory illness	0	0.00
	None of the above	115	65.7
	Total	175	100.0
Are you taking any prescription medication?	Yes	77	44.0
	No	98	56.0
	Total	175	100.0

Table (3) shows that (56.6%) of participants perceived their health as(very good), thus comprising the highest percentage, followed by the percentage (25.7%) who consider their health status as (fair), while a percentage of (5.7%) perceive their health status as (poor).

(65.7%) of the participants of the study sample had no illness (none of the above), followed by the percentage (8.6%) who had (hypothyroidism), while a percentage of (0.6%) have had a mental health problem. (56.0%) of the participants indicated that they take a prescribed medication at the time of the survey, which stands in contrast to the results of the item related to the history of illness.

Results related to the second question: What is the participants' assessment of their weight and body image? Results are shown in table (4), (5),

Table 4: Frequency and percentage for question "What means do you use to assess your weight?"

Age	What means do you use to assess your weight?	Frequency	Percentage
18-29 year	comparison to others	2	12.5
	clothing size	6	37.5
	clothing fit (loose or tight)	0	0.00
	body mass index scales	7	43.8
	how you feel	0	0.00
	opinion of others	0	0.00
	Others	1	6.3
	Total	16	100.0
30-39 year	comparison to others	5	9.1
	clothing size	15	27.3
	clothing fit (loose or tight)	7	12.7
	body mass index scales	25	45.5
	how you feel	1	1.8
	opinion of others	1	1.8
	Others	1	1.8
	Total	55	100.0
40-49 year	comparison to others	3	3.3
	clothing size	34	37.8
	clothing fit (loose or tight)	15	16.7
	body mass index scales	27	30.0
	how you feel	3	3.3
	opinion of others	2	2.2
	Others	6	6.7

Table 4 Cont'd

	Total	90	100.0
50 year and more	comparison to others	1	7.1
	clothing size	5	35.7
	clothing fit (loose or tight)	4	28.6
	body mass index scales	2	14.3
	how you feel	0	0.00
	opinion of others	0	0.00
	Others	2	14.3
	Total	14	100.0

Table (4) shows that the largest number of participants of the age group (18-29 years) assess their weight mainly through the means of the body mass index scales (43.8%), followed by the means of the clothing size (37.5%), and the comparison to others (12.5%). Similar results were calculated for theparticipants of the age group (30-39 years), who assess their weight mainly also through the means of the body mass index scales (45.5%), followed by the means of the clothing size (27.3%), and clothing fit (12.7%).

Results show that the largest number of participants of the age group (40.49 years) assess their weight mainly through the means of clothing fit (37.8%), followed by the means of the body mass index scales (37.5%), and the comparison to others (3.3%).

Concerning the age group (50 years and more), table (4) shows that the largest number of participants assess their weight mainly through the means of the clothing size (35.7%), followed by the means of the clothing fit (28.6%), and the body mass index scales (14.3%).

Table 5: Frequency and percentage for question "Has your weight changed in the last 12 months?"

Age	Has your weight changed in the last 12 months?	**Frequency**	**Percentage**
18-29 year	Increase	6	37.5
	Decrease	6	37.5
	Not change	4	25.0
	Total	16	100.0
30-39 year	Increase	23	41.8
	Decrease	17	30.9
	Not change	15	27.3
	Total	55	100.0
40-49 year	Increase	20	22.2
	Decrease	42	46.7
	Not change	28	31.1
	Total	90	100.0
50 year and more	Increase	6	42.9
	Decrease	3	21.4
	Not change	5	35.7
	Total	14	100.0

Table (5) shows that (37.5%) of the participants had an increase in their weight during the last 12 months prior to the survey, and a similar percentage (37.5%) of the participants had a decrease in their weight, while (25.0%) of the participants had no weight change.

In comparison, (41.8%) of the participants in the age group (30-39 years) had a weight increase during the last 12 months, and (30.9%) had a decrease in their weight, while the percentage of participants who had no change in weight was at (27.3%).

A high percentage of participants (46.7%) in the age group (40-49 years) had a decrease in their weight in the last 12 months, compared to a percentage of (22.2%) who had an increase in weight, and a percentage of (31.3%) who had no change in weight.

Lastly, (42.9%) of the participants in the age group (50 year and more) had an increase in the weight during the last 12 months, in comparison to a percentage of (21.4%) who had a weight loss during that period, and a percentage of (35.7%) who had no weight change.

Results related to the third question: What is the Jordanian women knowledge and perception of cardiovascular disease as well as actual risk of cardiovascular disease?

To answer this question, the researcher answered sub-questions in tables: (6, 7, 8, 9.10, 11, 12, 13, and 14).

Table 6::Frequency and percentage for question "Have you had your blood pressure checked in the last 12 month?"

Age	Have you had your blood pressure checked in the last 12 month?	Frequency	Percentage
18-29 year	Yes	10	62.5
	No	6	37.5
	Total	16	100.0
30-39 year	Yes	40	72.7
	No	15	27.3
	Total	55	100.0
40-49 year	Yes	51	56.7
	No	39	43.3
	Total	90	100.0
50 year and more	Yes	11	78.6
	No	3	21.4
	Total	14	100.0

Table 7: Frequency and percentage for question "Have you ever been told by a doctor, nurse or other health professional that you have high blood pressure?"

Age	Have you ever been told by a doctor, nurse or other health professional that you have high blood pressure?	Frequency	Percentage
18-29 year	Yes	3	18.8
	No	13	81.3
	Total	16	100.0
30-39 year	Yes	18	32.7
	No	37	67.3
	Total	55	100.0
40-49 year	Yes	10	11.1
	No	80	88.9
	Total	90	100.0
50 year and more	Yes	5	35.7
	No	9	64.3
	Total	14	100.0

Table (6) shows the highest percentage of participants in all age groups of the participants of the study have had their blood pressure checked in the last 12 months. The age group (50 years and more) was ranked first, with the percentage of the participants who checked their blood pressure at (78.6%), followed by the age group (30-39 years), with its percentage at (72.7%), and the age group (18-29 years) with its percentage at (62.5%). The lowest percentage (56.7%) of participants who checked their blood pressure during the last 12 months belonged to the age group (40-49 years).

Table (7) shows that the highest percentages of participants in all the age groups of the sample of the study have not ever been told by any health professional that they have a high blood pressure. (18.8%) of the participants in the age group (18-29 years) indicated that they have been told that they have high blood pressure in the past, in comparison to (32.7%) of the participants in the age group (30-39 years), (11.1%) of the participants in the age group (40-49 years), and (35.7%) of the participants in the age group (50 years and more).

Table 8: Frequency and percentage for question "Are you currently taking medication for your high blood pressure?"

Age	. Are you currently taking medication for your high blood pressure?	Frequency	Percentage
18-29 year	Yes	1	6.3
	No	15	93.8
	Total	16	100.0
30-39 year	Yes	9	16.4
	No	46	83.6
	Total	55	100.0
40-49 year	Yes	3	3.3

Table 8 cont'd

	No	87	96.7
	Total	90	100.0
50 year and more	Yes	4	28.6
	No	10	71.4
	Total	14	100.0

Table (8) shows that the age group (50 years and more) has the highest percentage of respondents (28.6%) who indicated that they are currently taking medication for high blood pressure, followed by the age group (30-39 years) with the corresponding percentage at (16.4%). (6.3%) of the participants of the age groups (18-29 years) indicated that they are currently taking medication for high blood pressure, and (3.3%) of the participants in the age group (40-49 years).

Table 9: Frequency and percentage for question "During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, or walking for exercise?"

Age	During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, or walking for exercise?	Frequency	Percentage
18-29 year	Yes	5	31.3
	No	11	68.8
	Total	16	100.0
30-39 year	Yes	22	40.0
	No	33	60.0
	Total	55	100.0
40-49 year	Yes	33	36.7
	No	57	63.3
	Total	90	100.0
50 year and more	Yes	3	21.4
	No	11	78.6
	Total	14	100.0

Results show that 31.3% of the participants of the study in the age group (18-29 years) indicated that they participated in physical activities other than their regular jobs during the last month prior to the survey, in comparison to (40.0%) of the respondents in the age group (30-39 years), (36.7%) of the participants in the age group (40-49 years), and (21.4%) of the participants in the age group (50 year and more).

Table 10: Frequency and percentage for question "Have you ever had your cholesterol checked?"

Age	Have you ever had your cholesterol checked?	Frequency	Percentage
18-29 year	Yes	9	56.3
	No	7	43.8
	Total	16	100.0
30-39 year	Yes	39	70.9
	No	16	29.1
	Total	55	100.0
40-49 year	Yes	50	55.6
	No	40	44.4
	Total	90	100.0
50 year and more	Yes	8	61.5
	No	5	38.5
	Total	13	100.0

Table (10) shows the highest percentage of participants in all age groups of the participants of the study have had their cholesterol checked. The age group (30-39 years) was ranked first, with the percentage of the participants who had their cholesterol checked at (70.9%), followed by the age group (50 years and more), with its percentage at (61.5%), and the age group (18-29 years) with its percentage at (56.3%). The lowest percentage (55.6%) of participants who had their cholesterol checked belonged to the age group (40-49 years).

Table 11: Frequency and percentage for question "how long has it been since your last had your blood cholesterol checked"

Age	how long has it been since your last had your blood cholesterol checked	Frequency	Percentage
18-29 year	Within the past year (any time less than 12 month ago)	2	12.5
	Within the past 2 years (one year but less than 2 years)	6	37.5
	Within the past 5 years (2 years but less than 5 years ago)	1	6.3
	5 or more years ago	1	6.3
	No check	6	37.5
	Total	16	100.0
30-39 year	Within the past year (any time less than 12 month ago)	24	43.6
	Within the past 2 years (one year but less than 2 years)	10	18.2
	Within the past 5 years (2 years but less than 5 years ago)	2	3.6
	5 or more years ago	4	7.3
	No check	15	27.3
	Total	55	100.0
40-49 year	Within the past year (any time less than 12 month ago)	19	21.1
	Within the past 2 years (one year but less than 2 years)	14	15.6
	Within the past 5 years (2 years but less than 5 years ago)	4	4.4
	5 or more years ago	13	14.4
	No check	40	44.4
	Total	90	100.0
50 year and more	Within the past year (any time less than 12 month ago)	8	57.1
	Within the past 2 years (one year but less than 2 years)	0	0.00
	Within the past 5 years (2 years but less than 5 years ago)	1	7.1
	5 or more years ago	0	0.00
	No check	5	35.7
	Total	14	100.0

Table (11) shows that (37.5%) of the participants in the age group (18-29 years) had their blood cholesterol checked within the last two years (the survey time being the reference point), (12.5%) had it checked within the last year. Results for the age group (30-39 year) showed that (43.6%) of the participants had the blood cholesterol checked within the last year, while most of the participants (44.4%) in the age group (40-49 years) had no blood cholesterol check. (57.1%) of the Participants in the age group (50 years and more) had their cholesterol checked within the last year, while (35.7%) of the participants in the same age group had no blood cholesterol check.

Table 12: Frequency and percentage for question "Have you smoked at least 100 cigarettes in your entire life?"

Age	**Have you smoked at least 100 cigarettes in your entire life** **Note**: 5packs= 100 cigarette	Frequency	Percentage
18-29 year	Yes	0	0
	No	16	100.0
	Total	16	100.0
30-39 year	Yes	11	20.0
	No	44	80.0
	Total	55	100.0
40-49 year	Yes	9	10.0
	No	81	90.0
	Total	90	100.0
50 year and more	Yes	2	14.3
	No	12	85.7
	Total	14	100.0

Table (12) shows that no participant in the age group (18-29 years) has smoked at least (100 cigarettes) in her entire life, while (20.0%) of the participants in the age group (30-39 years have smoked more than (100 cigarettes) in their entire life, and (10.0%) of the participants in the age group (40-49 years) have smoked more than (100 cigarettes) in their entire lives, and (14.3%) of the participants in the age group (50 years and more) indicated that they have smoked more than (100 cigarettes) in their entire lives.

Table 13: Frequency and percentage for question "do you now smoke cigarettes every day, some days, or not at all?"

Age	Do you now smoke cigarettes every day, some days, or not at all?	Frequency	Percentage
18-29 year	Every day	1	6.3
	Some days	1	6.3
	Not at all	14	87.5
	Total	16	100.0
30-39 year	Every day	8	14.5
	Some days	12	21.8
	Not at all	35	63.6
	Total	55	100.0
40-49 year	Every day	10	11.1
	Some days	14	15.6
	Not at all	66	73.3
	Total	90	100.0
50 year and more	Every day	2	14.3
	Some days	4	28.6
	Not at all	8	57.1
	Total	14	100.0

Table 14: Frequency and percentage for question "During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?"

Age	During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?	Frequency	Percentage
18-29 year	Yes	0	0.00
	No	1	100.0
	Total	1	100.0
30-39 year	Yes	8	42.1
	No	11	57.9
	Total	19	100.0
40-49 year	Yes	12	52.2
	No	11	47.8
	Total	23	100.0
50 year and more	Yes	2	33.3
	No	4	66.7
	Total	6	100.0

Table (13) shows that smoking prevails most among the participants of the age group (50 years and more), followed by the age group (30-39 years),the age group (40-49 years), and the age group (18-29 years). (6.3%) of the participants in the age group (18-29 years) indicated that they smoke every day, in comparison to (14.5%) of the participants in the age group (30-39 years), (11.1%) of the participants in the age group (40-49 years), and (14.3%) of the participants in the age group (50 years and more).

Table (14) shows that no participants tried to quit smoking during the last year in the age group (18-29 years), while (42.1%) of the participants in the age group (30-39 years) indicated that they tried to quit smoking in the last year prior to the current survey. Concerning the participants of the older age groups, results showed that (52.2%) of the participants in the group (40-49 year) indicated that they made attempts at quitting smoking, in comparison to (33.3%) of the participants in the age group (50 years or more), who indicated that they tried to quit smoking.

Results related to the fourth question: Is increased awareness and knowledge associated with increased action to lower risk of heart disease?

In order to explore weather increased awareness and knowledge is associated with increased action to lower risk of heart disease, the frequencies and percentages of the risk factors were calculated, as well as the mean and standard deviations of the risk factors for knowledge, and independent T-test test, was used as shown in the following tables (15- 17)

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Table 15: Frequency and percentage for risk factor

Risk factor	Frequency	Percentage
zero_ risk	24	13.7
One _ risk	58	33.1
Two _ risks	60	34.3
Three _ risks	29	16.6
Four _ risks	4	2.3
Five _risks	0	0.00
Total	175	100.0

Table 16: Frequency and percentage for risk factor

Risk factor	Frequency	Percentage
low_ risk	82	46.9
High _ risk	93	53.1
Total	175	100.0

Table 17: The results of the (Independent sample T-test) for the knowledge depending on risk factor

	Level	Mean	T value	df	Statistical significance
Knowledge	Low risk	69.902	9.474	173	0.000*
	High risk.	54.624			

*significant at significant level ($\alpha \leq 0.05$)

Table (15)Shows that (two- risk-factor) has the highest percentage (34.3%) among the participants of the study, followed by (one-risk) factor (33.1%), then the three- risk factor (16.6%), and the zero-risk factor (13.7%), the four risk factor (2.3%), and lastly the zero-risk factor (0.0%).

Table (16) shows that High- risk factors have a higher percentage (53.1%) in comparison to low-risk factors (46.9%). This result is significant based on the consequences of high risk actors on the health of the individual.

Table (16) shows that the value of T was (9.474), which is a statistically significant value at the level of ($\alpha \leq 0.05$). This value indicates the presence of significant differences in the levels of knowledge and awareness concerning the risk factors of cardiovascular diseases among menopausal woman. These differences were in favor of the low risk factors, which had a mean of (69.90) compared to the high risk factors, with their mean at (53.624).

DISCUSSION

Risk factors can be classified into modifiable and non-modifiable factors; age, gender, and family history are a non-modifiable one, where other cardiovascular risk factors as hypertension, diabetes, hyper dyslipidemia, weight, and cigarette smoking are a modifiable one. Results of the study revealed that family history of heart disease increase your chance to have this disease with a percentage reaches (74.4%).

Resultsrelated to women responses toward the higher risk to have heart disease after menopause was low (33.1%), in comparison with other research finding that shows that the risk of having heart disease increase with age and after menopause.

Our study shows that cancer is considered as the most dangerous health issues (72.0%) followed by the percentage (23.4%) by the status (Heart Diseases), while reached lowest percentage (7.4%) by the status (diabetes), which is not congruent with other point of view of national institute of nursing research that found that 43% of female deaths due to cardiac disease, few women view it as a significant health risk (Department of Health and Human Services, 2017).

Employment status was significantly associated with knowledge of menopause. While employment and educational status were positively related with knowledge of menopause, other demographic variables were all negatively correlated with knowledge of menopause.

Results of the current study agree with the results of the study conducted in Al-Ain, United Arab Emirates about women's knowledge, attitude and practice towards menopause and Hormone replacement therapy, 2014; showed that a substantial of women had poor knowledge about menopause (67%), and this knowledge varied significantly with level of education and nationality(Hamid, et al, 2014).

Results showed that physical activity including gardening and walking can decrease the risk of having heart disease with a percentage reached (73.7%), this result congruent with research finding conducted in 2013 that indicate the whole body vibration (WBV) exercise training improves systemic and leg arterial stiffness in postmenopausal women with pre-hypertension and hypertension and thus decrease cardiovascular and disability risk in postmenopausal women (Figueroa, Kalfon, Madzima, and Wong, 2014).

A survey in 2010 shows that hypertension is the most spreading disease in Jordan, and people who lives in southern region had the highest percentage to have chronic disease which is about 12.8%. Additionally, this survey studied the percentage for people who having chronic disease according to their gender, they found that (heart failure, cardiac romantic, asthma, and all cancer type) is more in women rather than men. Furthermore; old age people their age more than 60 are the more common group having these chronic diseases.

Based on the results of the study, it is recommended the health care system should improve the knowledge and awareness of cardiovascular risk factors among Jordanian menopausalwoman through teaching program to promote and maintain active healthy life(Ama, and Ngome, 2013).

Moreover, Support groups may be helpful to facilitate connections between midlife women, increase self-awareness, assist women to come value their menopausal experiences, to manage their symptoms appropriately through self-care measures and health care interventions and to more fully embrace being' wise women'.

Cardiologist and gynecologists play an important role in identifying women at risk of cardiovascular disease to decrease morbidity and mortality, improve quality of life, and manage the risk factors such as hypertension

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