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# HEALTH EDUCATION PROGRAM ABOUT WOMEN ADAPTATION METHODS FOR MENOPAUSAL SYMPTOMS

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## ABSTRACT:

**Background:** Menopausal age is the permanent termination of menstruation in women due to reduced ovarian hormones secretion and usually occurring in the range of age between 45 and 55 years which characterized by biological, psychological and physiological changes. **Aim:** This study aimed to evaluate health education program about women adaptation methods for menopausal symptoms. **Design:** Quasi-experimental research design was used. **Sample:** Purposive sample used`. **Sample Size**: 119 menopause women. **Setting:** study was conducted at 4 Maternal and child health centers at El-Miniacity (first, second, east and west MCH).**Twotools:**1st An interview questionnaire composed of three parts (demographic characteristics, medical history & knowledge of women about menopausal symptoms).2nd tool: An observation check list to observe practices of women about adaptation methods to decrease menopausal symptoms. **Results:** the mean age of menopaused women was 47.32±8.002years.85%of them had good total knowledge at the post education program.Also,85% of menopaused women had satisfactory level of practices about adaptation methods for menopausal symptoms.85% of them had highly statistically significant improvement in women's practice to reduce menopausal symptoms post implementation of health educational program than pre -program. **Conclusion:** There was a marked improvement in women's total knowledge about women adaptation methods for menopausal symptoms after apply health education program than pre program. Additionally, there was statistically significant improvement in women's total practice score regarding adaptation methods of menopausal symptoms after applying health education program, than pre-program. **Recommendations:** Continuous health education program about women adaptation methods for menopausal symptoms in MCH centers and obstetrics& gynaecological outpatient clinics in other places to generalize the results.

**Key words:** Menopausal Symptoms, Women, and Adaptation methods

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## I. INTRODUCTION:

Menopause means permanent cessation of menstrual periods for 1 year after age 45 year or permanent cessation of ovulation after lost ovarian activity the last menstrual period when first notice changes in their monthly cycle and start of symptoms such as hot flushes. Menopause doesn't begin at a particular age or last for a definite and fixed period of time and the symptoms can vary from woman to woman. For some women menopause can pass with no problems but for many others the time can be very unsettling and for some women menopause and its symptoms can be so difficult to manage [1].

Menopause is usually a natural change marks the end of a woman's fertility. All healthy women transition from a reproductive or premenopausal period marked by regular ovulation and cyclic menstrual bleeding to a postmenopausal period marked by infertility and amenorrhea. The onset of the menopausal transition is generally marked by delicate shortening in the length of the menstrual cycle and changes in the duration or amount of menstrual flow[2]. As the menopausal transition progresses, menstrual cycles are missed until complete amenorrhea occurs, but the pattern of missed cycles is not predictable. Menopause is typically defined retrospectively after 12 months of amenorrhea. Menopause is a natural phase in a woman's life cycle, heralded by disturbances in both the flow and time interval of menstrual periods. These disturbances are the result of declining ovarian function with fluctuating levels of female sex hormones estrogen and progesterone [3]. Average of 27 million women between the ages of 45 and 55, or 20% of the American workforce, experience menopause each year. By 2018, nearly 31 million women in the menopausal age range will be employed. 80% of those 31 million employed women will experience menopausal symptoms. Although menopause itself is generally thought of as a naturally occurring biological phenomenon, experiencing the process can increase a woman's risk of disease [4].

In a woman who is more than 45 years old, 12 months of secondary amenorrhea is sufficient to diagnose menopause. Although a pelvic examination may reflect some atrophy of the vaginal mucosa, this is not always remarkable. Generally, there are elevations in both follicle-stimulating hormone (FSH), and luteinizing hormone (LH),

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which has a more modest rise. It is generally considered that an FSH level higher than 40 IU/L indicates ovarian failure, but these levels are not reliable for diagnosis because in certain circumstances these hormones may be elevated before menopause [5].

Menopause generally results from primary ovarian deficiency due to depletion of a sufficient number of functional follicles. Menopause typically occurs between 45and 55 years of age. It extends over several years. Initially, the cycles become irregular and are periodically an ovulatory. This is referred to as the menopausal transition. The cycles tend to shorten, primarily in the follicular phase. Eventually, the woman ceases to cycle altogether. The final menstrual period is determined retrospectively after 1 year of amenorrhea, and the stage of life from this final period to death is termed post menopause [6].

There are many problems facing menopausal women include vasomotor problems a shot flushes, urogenital atrophy, osteoporosis, cardiovascular disease, cancer, psychiatric problems as difficulty concentrating, mental confusion, stress, depression, cognitive decline, irritability and mood swings, sexual problems. However, it has been difficult to differentiate between symptoms that result from loss of ovarian function and those from the aging process or from the socio-environmental stresses of midlife years. Many symptoms are found related to postmenopausal syndrome: insomnia, dry vagina, and headache and urge incontinence [7].

Women adaptation methods of menopausal symptoms include lifestyle modifications. Lifestyle modifications should be the first-line approach for women with menopausal symptoms such as practice simple exercise regularly to reduce symptoms as (squatting, Kegel and aerobics) because its strength pelvic bone and vaginal area, stop smoking, take calcium and vitamin D, decrease fat intake, control weight, wear light cotton clothes to decrease hot flushes and sleeping in cool environment. Exercise may help with sleeping problems [8].

The family support during this transition period is very significant as the women have changes occurring in physical, psychological and social domains of life. Women experience feelings of guilt and embarrassment in the menopause stage. It is suggested

that these feelings are guiding the behavior and affecting the image of one in the eyes of others. Both feelings are enhanced by interpersonal and family relationships **[9].**

Health education program means plan instructions, guidelines or principles by which individuals and groups of people learn it to change or behave in a manner conducive for the promotion, maintenance, or restoration of health. Health education as "any combination planned learning experiences based on sound theories that provide individuals, groups, and communities the opportunity to acquire information and the skills needed to make quality health decisions. Today, health systems plan their most important programs based on family health. Women are the centres of family health and are the main role model for the next generation and promoting healthy living **[10].**

Nurse can educate women to have modification in the lifestyle practices such as having well balanced diet, regular exercises, decreased fat and salt intake, avoidance of self-medication, fruits and vegetable consumption, blood pressure control, and increased daily water consumption, practicing relaxation through meditation. Nurse helps women to identify and adapt to the various changes taking place in the body, so that the women will be better equipped to face the changes and minimize the risk of this potentially disruptive period. A wide gap in the knowledge has been documented on the women from developed and developing countries. And this gap is even wider in women among rural and urban communities **[11].** Community health nurses providing nursing care for women complain from menopausal symptoms. Additionally, community health nurses offer education to women about maintaining their health so that they can decrease the occurrence of diseases and adapt with symptoms. They plan educational assemblies, hand -out fliers, conduct health screenings, and dispense medications. The goals of community health nursing are promoting, protect and preserve the health to menopause women. Community health nursing involves these basic concepts, promote healthy lifestyle, prevent health problems, provide direct care, spiritual care, educate women about managing chronic conditions and making healthy choices, and conduct research to improve healthcare**[12].**

## 1.1 Significance of the study:

The prevalence of menopausal symptoms among Egyptian women is 84%. So, increase life expectancy from 54 to 71 years lead to women experiencing menopausal health

complains for a long time. Therefore, the health care of women during this period requires special care to assess their health needs in order to provide competent care. Promoting good physical and psychological health during menopausal age is important for women in later life. Thus, increasing women's awareness and dealing with their health complains are important to decrease severity of menopausal symptoms.

**In Egypt** there are 809147 women at the age of menopause and were menopausal symptoms that represent approximately 14.9% of total number of women in Egypt. Then healthy centers start to help them how to coping with symptoms that appear about them. Nurses start to know needs, signs and symptoms appear about women's during this period and how to solve the problem **(Center for health statistic and mobilization, 2015).**

**1.2 Aim of the study:**

These study aims to evaluate the health education program about women adaptation methods for menopausal symptoms through the following:

1-Assess the knowledge and practice of the women about menopause symptoms.
2-Plan and Implement health education program for women about adaptation methods of menopausal symptoms.
3-Evaluate the effect of educational program for knowledge and practice of women about adaptation methods of menopausal symptoms.

**Research Hypothesis:**

The women's knowledge and practices will be improved after applying educational program about adaptation methods of menopausal symptoms.

**II. Subject and method:**

**Research Design:**

Quasi-experimental design was conducted to achieve the study.

**Study setting:**

The present study was conducted at the Maternal– Child Health Centers (MCH) at El Minia district. There were Four MCH are the First, Second, West and East Maternal– Child Health Centers.

**Sample:**

Purposive sample used in this study. Total number of women in one year begin of August 2017 to end of July 2018 were 1190 women in all Maternal and child health

centers, I take 10% of women aged from 45 years and above, it wasequal 119 women.

**Inclusion Criteria:**

1- Women aged from 45 years and above,

2- Having menopausal symptoms,

3- Able to read and write and accept to participate in the study.

**Tools of data collection:**

Data for this study collected by using the following two tools:

**Tool (I):** Interview questionnaire sheet (pre – post format): It consisting of three parts:

**Part (I):** Demographic characteristics of women consisted of 7 items such as: name, age, sex, education level, occupation, marital status, residence.

**Part (II):** Medical history: it included: it divided to 2 sub-items

1) Past history included 3 closed end questions such as last time of period, certain diseases that women suffering from it, and types of operation that women do.

2) Current health status (pre – post format) included 9 closed end questions as women suffering from: hot flashes, night sweats, joint complaints, insomnia, depression, osteoporosis, diminished memory, overweight, and vaginal dryness.

**A scoring system** designed for the current health status of women contains 9 questions. This answered as the following: Yes=1 and No=0.

**Part (III):** Knowledge of women about menopausal symptoms: It divided to 4 sub-items (pre – post format)

A) Knowledge of women about menopause included 10 closed end questions as meaning of menopause, causes of menopause, delayed of menopause, early menopause meaning, late of menopause, natural menopause, and artificial menopause, age of menopause, and period of pre menopause and period of post menopause.

B) Knowledge of women about symptoms of menopause included 9 closed end questions as hot flashing, night sweating, frequent Urination, skin changes, sleep disturbance, decreased sexual desires, emotional changes, vaginal dryness, joint complaints and oral changes.

C) Knowledge of women about effect of menopausal symptoms about women included 6 closed end questions as effects about urinary system, general body, skin,

psychological changes, gynaecological system, sexual desires and circulatory system.

D) Knowledge of women about treatment and adaptation methods of menopausal symptoms included 17 closed end questions as treatment that used to reduce menopausal symptoms, uses of estrogen to reduce vaginal symptoms, effect of estrogen on urinary system, use of anti-depressant, uses osteoporosis treatment, problems from using of estrogen treatment, uses of aerobic exercises, important of aerobic exercises, uses of squatting exercise,  important of squatting exercise, uses of Kegel exercise, important of Kegel exercise, uses of yoga exercise, uses of cupping therapy, uses of acupuncture and use of isoflavone.

**A scoring system:**

It included 42 questions; a score of 2 point for each complete correct answer and a score of 1point for an incomplete correct answer and zero point to wrong answer. The total score of knowledge =84 score which be determined by taking points as the following:

- Poor knowledge ≤ 50 % (≤42 score)
- Fair knowledge = 50-70 % (42:58 score)
- Good knowledge > 70% (≥ 59 score).

**Tool (II):** An observation check list to observe practices of women adaptation methods for menopausal symptoms (pre – post format).

**This tool divided to 3 sub-items:**

A) Diets that reduce menopausal symptoms included 12 closed end questions as take strawberry, figs, kiwi, celery, Licorice, cowpea, bean, milk, yogurt, cheese and cold drinks

B) Practices that reduce menopausal symptoms included 5 closed end questions as doing aerobic exercise, Kegel exercise, squatting exercise, expose to sun, wear cotton clothes.

C) Diets that increased menopausal symptoms included 8 closed end questions as drink coffee, eat spicy food, salty food, fatty meal, red meat, Pasta, rice and smoke cigarettes.

**A scoring system**:

It included 25 questions. This answered as the following: Done = 2 point. Not done = 1 point. The total score of this part were 50 point as the following:

- Satisfactory practices ≥ 60%degree= (≥30 point)
- Unsatisfactory practices < 60%degree= (<30 point).

**Tool validity and Reliability:**

**A) Validity content:**

The revision of the tools for clarity, relevance, comprehensiveness, understanding and applicability will be done by five experts from Faculty of Nursing (3from community health nursing department and 2 of gynaecology and obstetrics nursing department) to measure the content validity of the tools and the necessary modification will be done accordingly.

**B) Tool Reliability:**

To assess reliability, the study tool was tested by the pilot subject's reliability for calculating Cronbach's Alpha which was 0.894 for knowledge and 0.902 for practice.

**Ethical consideration:**

An official permission to conduct the proposed study obtained from the Scientific Research Ethics Committee. Participation in the study is voluntary and subjects given complete full information about the study and their role before signing the informed consent. The ethical considerations include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not be accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs respected.

**II) Operational design:**

**1) Preparatory phase:**

It includes reviewing of related literature and theoretical knowledge of various aspect of the study using books, articles, internet and magazines to develop tools for data collection.

**2) Pilot study:**

The pilot study done on 10% of the sample equal 12 women to examine the clarity of questions and time needed to complete the study tools. Based on the results, modification will be done (if necessary). women included in the pilot study be excluded from the study.

**3) Field work:**

A written approval letters obtained from the Dean of faculty of nursing, Helwan University for practice the study in the faculty of nursing. Written letter should be sent to the Dean including the aim of the study. A written approval obtained from women after the researcher introduces herself for them, and after explaining the purpose of the study.

**Health education program conducted in four phases:**

**First, preparatory phase:** tool of data collection based on review of the past &current related literature reviewing various aspects of women menopausal symptoms done using available book, periodical articles and magazines. The aim is acquainted with the research problem to develop the study tool.

**Second, assessment phase:** by using pre-testing questionnaire to assess the present women knowledge and practice about adaptation methods of menopausal symptoms. The investigator first introduced her and explained the purpose of the study briefly to the women. Every woman was met individually and written consent for participation was obtained. Women were assured that the obtained information will be treated confidentially, and used only for the purpose of the study.

**Third planning phase:** Based on the result obtained from the assessment phase, the investigator designed the nursing education program sessions contents according to the women's' needs. The nursing education program sessions were developed after reviewing of related literature. Detected needs, requirements and were clarified and discussed in the form of booklet. Contents of the booklet were selected on the base of identified needs. The booklet consisted of knowledge about menopausal symptoms such as meaning of menopause, types of menopause, symptoms of menopause, effects of menopause, treatment and adaptation methods of menopausal symptoms. Teaching methods and media used: lecture and open discussion, brain   storming demonstration re were frequently applied during sessions. Media such as PowerPoint; data show, pictures, video and booklet prepared by investigator.

**Fourth implementation phases:** by developing the health education program contents.

*Data collected within 6 months in 2019, two days per week (Wednesday and Tuesday) from 8am-12 pm and interview women have menopausal symptoms.

*Health education program objective is to improve women knowledge and practice about adaptation methods toward menopausal symptoms and aims explained to all participants. Based on the result of the pre-test questionnaire the investigator utilizes multiple session were 5 sessions each session needs from 30-45 minutes and meeting the women two days per week.

*Post-test done after apply sessions. The study sample equal 107 women divided to 5 groups which consists of 3 groups contain about 21women and 2 groups contain about 22 women. The program was divided into 5 sessions (4 theoretical sessions and one practical session).

*Over all general objectives of women aged from 45years and above, having menopausal symptoms, able to read and write and accept to participate in the study. Health education program was to improve the women's' knowledge and practice regarding menopausal symptoms.

*4 theoretical sessions by the end of this sessions each woman will be able to know the meaning of menopause, causes of menopause, explain types of menopause (delayed of menopause, early menopause, late of menopause, natural menopause, artificial menopause), age of menopause, period of pre and post menopause.

*one practical session by the end of this sessions each woman will be able to diets that increase menopausal symptoms, diets that reduce menopausal symptoms and apply exercises as (Kegel, aerobic and squatting exercise) to reduce menopausal symptoms.

*By the end of each session, the women were intended about the content of next session and its time.

* Content of health education program help every woman to be able to know: symptoms of menopause, effect of menopause about different system and apply women adaptation method of menopause symptoms as (stop smoking, increase intake of vitamin D and calcium, wearing of light clothes, etc.).

**Program Booklet:**

A booklet including all content of the program it was design and given to women as an educational reference during and after the program implementation. Contents of booklet including (overview about woman reproductive system, define menopause, phases of menopause, types of menopause, causes of menopause, menopausal symptoms, stages of menopause, complication (problems) about

system result menopause, women's treatment related to menopausal symptoms, how to delayed menopause, adaptation methods of menopausal symptoms including: diets that increase menopausal symptoms, diets that reduce menopausal symptoms and exercises that reduce menopausal symptoms. Its aim was providing accurate knowledge and practice about adaptation of menopausal symptoms.

Fifth, Evaluation phase: this phase aimed to evaluate the effect of health education program on menopausal women about adaptation methods of menopausal symptoms.

**III) Administrative Item:**

After explanation of the study aim and objectives, an official permission was obtained from the Dean of faculty of nursing and the general manager of Helwan hospital asking for cooperation and permission to conduct the study.

**IV) Statistical Item:**

Upon completion of data collection, data will be computed and analyzed using Statistical Package for the Social Science (SPSS), version 24 for analysis. The P value will be set at 0.05. Descriptive statistics tests as numbers, percentage, mean standard deviation (SD), will be used to describe the results. Appropriate inferential statistics such as "F" test or "t" test will be used as well.

-Degrees of Significance of the results were:

Non-significant (NS) if $p > 0.05$.

Significant (S) if $p < 0.05$.

Highly Significant (HS) if $p < 0.01$.

**Results:**

**Table (1):** Shows that, the mean age of menopaused women was 47.32±8.002years. Moreover, 74.8% of them were married, and 84.0% of them were life in urban area. Also, 68.1%, of menopaused women secondary education according to educational level, additionally 71.4% of them work according to occupation. Also, 67.2% of menopaused women hadn't enough monthly income.

**Table (2):**Shows that, 84.1% of menopaused women had vaginal dryness, 58.9%of menopaused women hadinsomnia. While 58.9%of menopaused women hadsometimes hot flushes, stress and anxiety.Also,74.8%of menopaused women never suffer from osteoporosis. Highly statistically significant improvement in women's knowledge about

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menopausal symptoms post implementation of health educational program than per-program where P value < 0.001 in all items.

**Table (3):**Reveals that, 60.0%, 65%, 70.0%, 55.0% & 50.0%of the menopause women had wrong knowledge regarding meaning, causes of women's access to menopause, meaning of premenopausal, age of menopause and post-menopause period.Additionally,85.0%,80.0%, had complete knowledge. This table shows a highly statistically significant improvement in women knowledge about menopausal symptoms post implementation of health educational program than per- program where P value < 0.001 in all items.

**Table (4):** Illustrate that, most women practice to reduce menopausal symptoms improved after apply health educational program. Additionally, there was highly statistically significant improvement in women's practice to reduce menopausal symptoms post implementation of health educational program than pre -program where P value <0.001 in all items.

**Table (5):**Shows that positive correlation between total score knowledge and total score 'practice pre and post training program. of the studied sample regarding to women adaptation methods of menopausal symptoms. Moreover, there was positive correlation between total knowledge of the menopaused women.

**Table (6):** Shows that, there was highly statistically significant relation between womens' total knowledge about menopause post health educational program with marital status and place of residence where P value = 0.00. Moreover, there was statistically significant relation between women's' total knowledge about post-educational program with their age and educational level where p value = 0.00, 0.008 respectively. While, there was statistically insignificant relation between women's' total knowledge about menopaused women post- educational program with job where p value = 0.000.

**Figure (1):** Shows that,80% of menopaused women had good in total knowledge after health education program. while 20%of menopaused women had average in total knowledge after health education program. while 70%of menopaused women had poor in total knowledge after health education program where P value <0.001and t test =*251.21.

**Figure (2):**Demonstrate that,85% of studied sample had satisfactory level of knowledge about adaptation methods of menopausal symptoms. While in post health education program 15% of studied sample had unsatisfactory level of knowledge about adaptation methods of menopausal symptomswhere P value <0.001 and t test =241.22.

**Table(1): Frequency Distribution the studied sample of Demographic Characteristics (N=119).**

| Item | N. | % |
|---|---|---|
| **Age** | | |
| • 45<50 years | 82 | 68.9 |
| • 50≤55years | **20** | 16.8 |
| • > 55years | **17** | 14.3 |
| **Mean ± SD**        **47.32±8.002** | | |
| **Marital status:** | | |
| • Single | 0 | 0.00 |
| • Married | 89 | 74.8 |
| • Divorced | 13 | 10.9 |
| • Widowed | 17 | 14.3 |
| **Residence:** | | |
| • Rural | 19 | 16.0 |
| • Urban | 100 | 84.0 |
| **Educational level:** | | |
| • Read and write | 4 | 3.4 |
| • Secondary education | 81 | 68.1 |
| • Basic education | 29 | 24.4 |
| • University or more | 5 | 4.1 |
| **Occupation** | | |
| • Work | 85 | 71.4 |
| • Housewife | 34 | 28.6 |
| **Monthly income** | | |
| • Enough | 39 | 32.8 |
| • Not enough | 80 | 67.2 |
| • Enough and saved | 0 | 0.0 |

**Table (2): Frequency Distribution of the Studied Sample regarding totheirCurrent Health status Pre& Post Healtheducational Program (n=119).**

| Current Health status | Pre program | | | | | | Post program | | | | | | Paired t test | P value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | wrong answer | | Incomplete correct answer | | Complete correct answer | | wrong answer | | Incomplete correct answer | | Complete correct answer | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | | |
| Hot flushes | 30 | 25.2 | 70 | 58.9 | 19 | 15.9 | 10 | 8.4 | 20 | 16.8 | 89 | 74.78 | *274.53 | <0.001** |
| Sweating at night | 40 | 33.7 | 65 | 54.6 | 14 | 11.7 | 20 | 16.8 | 20 | 16.8 | 79 | 66.38 | *202.95 | <0.001** |
| Joint pain | 60 | 50.4 | 50 | 42.1 | 9 | 7.5 | 19 | 15.9 | 40 | 33.6 | 60 | 71.40 | **177.20 | <0.001** |
| Insomnia | 70 | 58.9 | 30 | 25.2 | 19 | 15.9 | 10 | 8.4 | 30 | 25.2 | 79 | 66.38 | **103.92 | <0.001** |
| Stress and anxiety | 30 | 25.2 | 70 | 58.9 | 19 | 15.9 | 10 | 8.4 | 10 | 8.4 | 99 | 83.19 | *274.27 | <0.001** |
| Osteoporosis | 20 | 16.8 | 10 | 8.4 | 89 | 74.8 | 15 | 12.6 | 10 | 8.4 | 94 | 78.99 | *213.08 | <0.001** |
| Lack of concentration | 60 | 50.4 | 40 | 33.7 | 19 | 15.9 | 3 | 2.5 | 20 | 21.8 | 96 | 80.67 | *197.07 | <0.001** |
| Weight gain | 50 | 42.1 | 50 | 42.0 | 19 | 15.9 | 30 | 25.2 | 40 | 33.6 | 49 | 41.17 | **233.70 | <0.001** |
| Vaginal dryness | 100 | 84.1 | 10 | 8.4 | 9 | 7.5 | 15 | 12.6 | 30 | 25.2 | 74 | 62.18 | *238.83 | <0.001** |

**Table (3): Frequency Distribution of the Studied Sample Knowledge of menopause Pre & Post Health Educational Program (N=119).**

| Knowledge of women about Menopause | Pre-program | | | post -program | | | Paired t test | P value |
|---|---|---|---|---|---|---|---|---|
| | wrong answer | Incomplete correct answer | Complete correct answer | wrong answer | Incomplete correct answer | Complete correct answer | | |
| | % | % | % | % | % | % | | |
| • **Meaning of Menopause** | 60.0 | 30.0 | 10.0 | 15.0 | 20.0 | 65.0 | *274.53 | <0.001** |
| • **Causes of women's access to menopause** | 55.0 | 40.0 | 5.0 | 10.0 | 10.0 | 80,0 | **103.92 | <0.001** |
| • **Mechanism of menopause** | 50.0 | 40.0 | 10.0 | 10.0 | 10.0 | 80.0 | *274.27 | <0.001** |
| • **Surgical menopause** | 70.0 | 25.0 | 5.0 | 15.0 | 10.0 | 75.0 | *213.08 | <0.001** |
| • **Meaning of premenopausal** | 60.0 | 30.0 | 10.0 | 5.0 | 10.0 | 85.0 | *238.83 | <0.001** |
| • **Meaning of perimenopausal** | 55.0 | 40.0 | 5.0 | 10.0 | 10.0 | 80.0 | *234.40 | <0.001** |
| • **Meaning of postmenopausal** | 60.0 | 30.0 | 10.0 | 10.0 | 20.0 | 70.0 | *197.07 | <0.001** |
| • **Age of menopause** | 50.0 | 30.0 | 20.0 | 5.0 | 10.0 | 85.0 | *202.95 | <0.001** |
| • **Artificial menopause** | 70.0 | 10.0 | 20.0 | 5.0 | 10.0 | 85.0 | **233.70 | <0.001** |
| • **Delayed menopausal period** | 65.0 | 10.0 | 25.0 | 10.0 | 15.0 | 75.0 | **177.20 | <0.001** |

**Table (4): Frequency Distribution of Studied Sample practice as diet that Reduce Menopausal Symptoms Pre &Post Health Educational Program (N=119).**

| Items reduce menopausal symptoms | Women's practice | | | | Paired t test | P value |
|---|---|---|---|---|---|---|
| | Pre program | | Post program | | | |
| | Done | Not done | Done | Not done | | |
| | % | % | % | % | | |
| Eat strawberries | 25.0 | 75.0 | 85.0 | 15.0 | **172.13 | <0.001** |
| Eat celery | 40.0 | 60.0 | 80.0 | 20.0 | **151.51 | <0.001** |
| Eat figs | 60.0 | 40.0 | 70.0 | 30.0 | *103.85 | <0.001** |
| Drink liquorice | 30.0 | 70.0 | 80.0 | 20.0 | *73.28 | <0.001** |
| Eat bananas | 30.0 | 70.0 | 80.0 | 20.0 | *73.28 | <0.001** |
| Eat kiwi | 50.0 | 50.0 | 85.0 | 15.0 | *113.61 | <0.001** |
| Eat legumes like beans | 45.0 | 55.0 | 85.0 | 15.0 | **42.13 | <0.001** |
| Eat legumes like cowpea | 40.0 | 60.0 | 80.0 | 20.0 | **122.39 | <0.001** |
| Eat foods as yogurt | 50.0 | 50.0 | 75.0 | 25.0 | **117.27 | <0.001** |
| Eat foods as milk | 40.0 | 60.0 | 80.0 | 20.0 | **122.39 | <0.001** |
| Eat foods as cheese | 50.0 | 50.0 | 75.0 | 25.0 | **117.27 | <0.001** |
| Take cold drinks | 25.0 | 75.0 | 75.0 | 25.0 | *42.13 | <0.001** |

**Table (5):    Correlation between Total Score Knowledge and Practiceof Studied Sample Pre &Post Health Education Program (n = 119).**

| Item | Women total practice | | | |
|---|---|---|---|---|
| | Pre program | | Post program | |
| | R | P value | R | P value |
| Total Knowledge | - 0.028 | 0.763 | 0.353 | 0.000** |

(*) statistically significant & (**) high statistically significant P≤0.00.

**Table (6):Relation between Demographic Characteristics and Knowledge of Studied Sample Pre &Post Health Education Program (N=119).**

| Items | Total score pre-program knowledge | | | | | | Total score post program Knowledge | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Good | | Average | | Poor | | Good | | Average | | Poor | |
| | N=12 | % | N=24 | % | N=83 | % | N=95 | % | N=18 | % | N=6 | % |
| **Age** <br> • 45>50 years | 6 | 50 | 15 | 62.5 | 61 | 73.49 | 75 | 78.94 | 5 | 27.77 | 2 | 33.33 |
| • 50≤55years | 5 | 41.66 | 7 | 29.16 | 8 | 9.63 | 15 | 15.78 | 4 | 22.22 | 1 | 16.66 |
| • < 55years | 1 | 8.33 | 2 | 8.33 | 14 | 16.86 | 5 | 5.26 | 9 | 50 | 3 | 50 |
| $x^2$ P value | 5.719 .074 | | | | | | 102.023 .000** | | | | | |
| **Educational level** | | | | | | | | | | | | |
| Read and write | 1 | 8.33 | 3 | 12.5 | 0 | 0 | 3 | 3.15 | 1 | 5.55 | 0 | 0 |
| Secondary education | 5 | 41.66 | 7 | 29.16 | 69 | 83.13 | 80 | 84.21 | 1 | 5.55 | 0 | 0 |
| Basic education | 5 | 41.66 | 10 | 41.66 | 14 | 16.86 | 9 | 9.47 | 15 | 83.33 | 5 | 83.33 |
| University or more | 1 | 8.33 | 4 | 16.66 | 0 | 0 | 3 | 3.15 | 1 | 5.55 | 1 | 16.66 |
| $x^2$ P value | 3.807 0.051 | | | | | | 16.025 0.008* | | | | | |

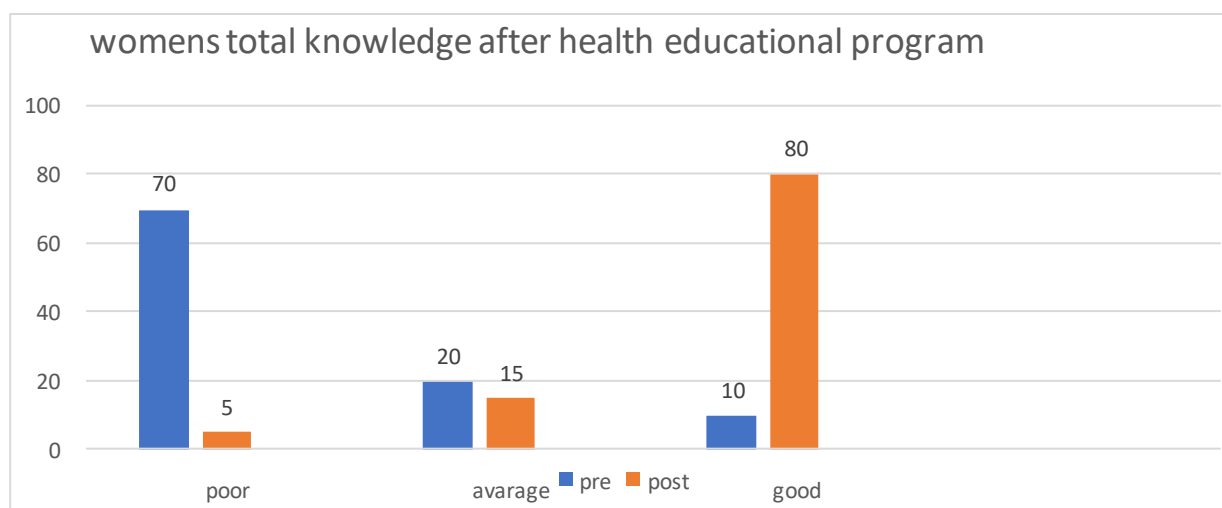| Items | Total score pre-program knowledge | | | | | | Total score post program Knowledge | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Good | | Average | | Poor | | Good | | Average | | Poor | |
| | N=12 | % | N=24 | % | N=83 | % | N=95 | % | N=18 | % | N=6 | % |
| **Age** | | | | | | | | | | | | |
| • 45>50 years | 6 | 50 | 15 | 62.5 | 61 | 73.49 | 75 | 78.94 | 5 | 27.77 | 2 | 33.33 |
| • 50≤55years | 5 | 41.66 | 7 | 29.16 | 8 | 9.63 | 15 | 15.78 | 4 | 22.22 | 1 | 16.66 |
| • < 55years | 1 | 8.33 | 2 | 8.33 | 14 | 16.86 | 5 | 5.26 | 9 | 50 | 3 | 50 |
| **Monthly income** | | | | | | | | | | | | |
| Enough | 7 | 58.33 | 18 | 75 | 14 | 16.86 | 30 | 31.57 | 9 | 50 | 0 | 0 |
| Not enough | 5 | 41.66 | 6 | 25 | 69 | 83.13 | 65 | 68.42 | 9 | 50 | 6 | 100 |
| $x^2$ P value | 4.608 0.061 | | | | | | 18.026 0.005* | | | | | |
| **Marital status** | | | | | | | | | | | | |
| Married | 5 | 41.66 | 14 | 58.33 | 70 | 84.33 | 75 | 78.94 | 10 | 55.5 | 4 | 66.66 |
| Divorced | 4 | 33.33 | 7 | 29.16 | 2 | 2.40 | 10 | 10.52 | 2 | 11.1 | 1 | 16.66 |
| Widowed | 3 | 2.52 | 3 | 2.52 | 11 | 9.24 | 10 | 8.40 | 6 | 3.01 | 1 | 16.6 |
| $x^2$ P value | 9.432 .004** | | | | | | 93.677 .000** | | | | | |
| **Occupation** | | | | | | | | | | | | |
| Work | 8 | 66.6 | 15 | 62.5 | 16 | 19.27 | 70 | 73.68 | 10 | 55.5 | 5 | 83.3 |
| Housewife | 4 | 33.3 | 9 | 37.5 | 67 | 80.72 | 25 | 26.31 | 8 | 44.4 | 1 | 16.6 |
| $x^2$ P value | 9.548 .002** | | | | | | 73.682 .000** | | | | | |

**Figure (1): Frequency Distribution of Studied Sample about Total Knowledge pre and post Health Educational Program.**
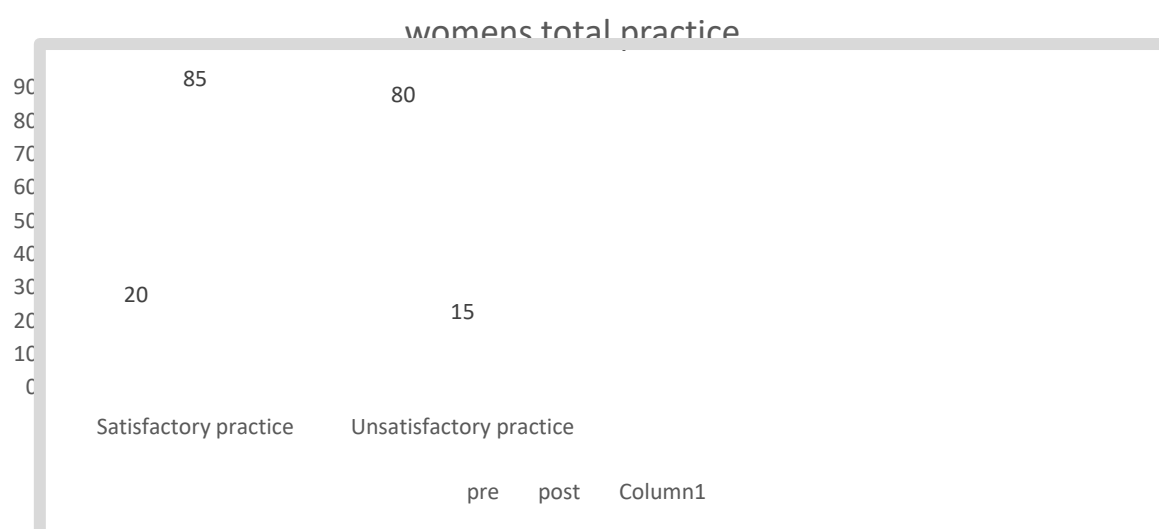


**Figure (2): Frequency Distribution of Studied Sample Practice about adaptation methods of menopausal symptoms (N=119).**

**DISCUSSION:**

Menopause marks the cessation of a woman's menstrual cycles and involves a natural decline in reproductive hormones. It is officially defined as occurring when 12 successive months have passed since the last menstrual period. Menopause occurs in all women, and usually takes place in one's mid-forties or fifties; in the United States, the average age at which menopause occurs is 51years [13].

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Although it is a natural life change, and not a disease, menopause can cause many symptoms, many of which can be unpleasant and disruptive. Some symptoms of menopause include hot flashes and night sweats (both of which are classified as vasomotor symptoms), sleep disruption, and low energy levels. The months or years immediately past menopause constitute a time termed perimenopause. During this time as well, many women experience symptoms that can prove uncomfortable and quite overwhelming. Such symptoms involve the following: mood changes, irregular periods, vaginal dryness, hot flashes, night sweats, sleep problems, slowed metabolism and subsequent weight gain, thinning hair, dry skin, and breast changes such as loss of fullness [14].

**Part I: The demographic characteristics of women about menopausal symptoms.**

According to the demographic characteristics of women, the present study findings indicated that more than two thirds of the study sample 45<50years, the mean age of women was 47.32 ± 8.002 years. and the majority of women were marriage This result is similar to a study conducted by **(Waidyasekera, et al.,2015)[15].**who studyabout "Menopausal symptoms and quality of life during the menopausal transition.

In Sri Lankan women," "they found that, the majority of women age during menopausal was 40 .18 ±6.9 years and 75% of them were marriage. The investigator point of viewthe most age of menopausal start 40 years or more Concerning the women education level, the current study result revealed that more than two thirds of women's the level of education secondary education, and the majority of them live in urban area. In the same line the study conducted by **(Pérez, et al., 2016)[16], who study** about "Epidemiology of risk factors and symptoms associated with menopause in Spanish women,", they found that, 70% of women's had secondary or diploma education, and the majority of them live in urban area. The investigator point of view, the low level of education would certainly influence women knowledge and practices regarding the period of menopausal.

Regarding the women occupation, the current study revealed that the nearly three quarters of women were working and the one quarters of them of women's housewife. This finding was agreed with **(Anderson, et al., 2017)[17],**who studyabout, "Relationship between menopausal symptoms and menopausal status in Australian and Japanese women: preliminary analysis, they found that, 75 % of women's working while the

majority of women housewife. The investigator point of view the majority of women live in urban area the high standard of living and prices force the women to work.

Regarding the monthly income, the current study revealed that less than two thirds of them the women's the family income not enough. This finding agrees with **(Simkin, et al., 2016)[18],** who study about "Lifestyle intervention can prevent weight gain during menopause: results from 5 years randomized clinical trial ", they found that the majority of participate the family income not enough.

The investigator point of view the family income level in Egypt is low enough for the daily living needs of most of the study participants.

Regarding to women current health status, the majority of them suffer from vaginal dryness, more than half of them suffer from joint pain, insomnia, lack of concentration and weight gain. This finding agree with (**Anderson, et al., 2017)[17],** who study about "Decreasing menopausal symptoms in women undertaking a web-based multi-modal lifestyle intervention: the women's wellness program " they found that , the majority of women complain vaginal dryness after menopause  Also, 55% of them suffer from joint pain, insomnia , lack of constriction and  weight gain The investigator point of view menopause is a significant landmark in the reproductive life of women, and hormonal changes at menopause create a multitude of structural and functional changes in postmenopausal women . These include menopausal symptoms hot flushes, sweating at night, stress and anxiety, weight gain and joint pain after vaginal dryness the menopause women.

Regarding the current health status, more than half of them sometimes suffer from thermal flushes, sweating at night, stress and anxiety. This finding agrees with **(Atapattu, 2015) [19],** who study about "Obesity at menopause: an expanding problem," he found that, 55% of women suffer from hot flushes, sweating at night, stress and anxiety after the menopause period.

**Part II: Regarding to research hypotheses**: The women's **knowledge** will be improved after applying health educational program about adaptation methods of menopausal symptoms.

The present study showed that, statistically significant improvement in women s' knowledge level at the post health educational program test, than pre in all knowledge

items such as meaning of menopause, meaning of early and late menopause, prevent of early menopause, pre and post menopause period and symptoms of menopause. P = 0.001. the present study results are on the same line with discussion 74 study done in Macedonia by **(Blake ,2017)**[20]**,** who study about "Menopause: evidence-based practice," in Pakistan, he found that, the majority of women lack of knowledge regarding period of menopause, improved after educational program. The investigator point of view the majority of women improved the knowledge about menopause after participate the health educational program.

**Part III: Regarding to research hypotheses**: The women's practices will be improved after applying health educational program about adaptation methods of menopausal symptoms.

Regarding to women done practice regarding to adaption methods of menopausal symptoms the present study showed that, statistically significant improvement in women s' done practice level at the post health educational program- test, than pre-test such aseat spicy food, drink coffee, eat bananas, eat figs, eatkiwi, eat foods high in fat**,** take cold drinks, eat legumes like beans, eat legumes like cowpea, eat foods that contain calcium (milk, yogurt, cheese), eat strawberries, eat celery and eat foods that contain vitamin (D**).** Improved after health education program. P = 0.001, this finding agrees with**(Anderson**, **2016)**[21]**,** who study about "Effects of Diet and Exercise on Menopause," he found that, unhealthy lifestyles such as lack of physical activates, improper dietary practice and poor stress relief aggravate the consequence of hormonal change leading to impaired symptoms of women. the majority of women improved the practice after implementation the health education program. The investigator point of view, regular training or education program on healthy lifestyle are vital to promote health in general and symptoms. Positive lifestyle changes such as physical activity and dietary modification have clear benefits on many aspects of life in women.

Regarding to women done practice regarding to adaption methods of menopausal symptoms. The present study showed that, statistical significant improvement in women s' done practice level at the post health educational program- test, than pre-test such as practice aerobics, practice squatting, exposed to the sun, wear light cotton clothes ,and smoking improved after health education program ,.P = 0.001, this finding agree with**(Nazari,  et al., 2016 )**[22]**,** who study about "The effectiveness of lifestyle

educational program in health promoting behaviours and menopausal symptoms in 45–60-year-old women in Madrasah, Iran," they found that, health education program contain sex items ( health responsibility, physical activity, nutrition , spiritual growth, interpersonal relation , and stress management ) to improved menopausal symptom and their severity after program .

also, the present study showed that, statistically significant improvement in women s' total satisfactory practice level at the post health educational program- test, than pre-test, one fourth of them of them satisfactory practice before health education program improved to the majority of them total satisfactory practice after health educational program. P = 0.001, this finding agrees with **(Esposito, et al., 2017)[(23)],** who study about  "Health education intervention in early and late postmenopausal Brazilian women" they found that , the majority of  post-menopausal women improve the practice after the health education .The investigator point of view , the application of health education program about practice of adaption methods of menopausal to decreases the symptom of menopausal and adaptation of women regarding physical, psychological and sexual problems .

As regarding to menopaused women's practice as diet that reduce menopausal symptoms, the present study showed that there was significant improvement in women's practice after implementation of health education program regarding menopaused women's practice as diet that reduce menopausal symptoms, the

finding of present study reported that more than half of the women have correct practice about menopaused women's practice as diet that reduce menopausal symptoms in post program. This finding isn't agree with **(Nirmala, et al. 2018)[(24)],** who study titled in "Cross cultural adaptation and analysis of psychometric properties of Sinhala version of Menopause Rating Scale" menopaused women's practice as diet that reduce menopausal symptoms as thought by the women were eat strawberry 18.2 %, eat kiwi 25 %, take cold drinks 32.4 %, and eat bananas 22.2 %. From the investigators opinion this result due to women wasn't received health education program regarding menopausal symptoms.

**CONCLUSION**

**Based on the present study and research hypothesis it can be concluded that:**

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There was a marked improvement in women's total knowledge about women adaptation methods for menopausal symptoms after apply health education program than pre-program. Additionally, there was statistically significant improvement in women's total practice score regarding menopausal symptoms after applying health education program, than pre-program.

**Recommendations**

**Based on the findings of the present study, the following recommendations are suggested:**

1- Continuous health education program about women adaptation methods for menopausal symptoms in obstetrics and gynecological hospital in anther places to generalize the results

2- and provide women with booklet which include meaning of menopause, symptoms of menopause, causes of menopause and how to adapt with menopausal symptoms in outpatient clinics.

3- Make posters or banners about adaptation methods for menopausal symptoms and put in maternal and child health centers under observation from community health nurse.

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