Factors Associated with the Severity of Menopausal Symptoms among menopausal Women

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Abstract: Introduction: *Menopause is a milestone in a woman's life. It is an event- marks the transition from the fertile years to a life phase characterized by a relative hormonal rest and stability.* ***Aim of the study*** *was to identify factors associated with the severity of menopausal symptoms among menopausal women.* ***Materials and Method:*** *Research design an exploratory descriptive research design was used to carry out this study.* ***Setting*** *The study was conducted in the gynecologic outpatient clinics at El Shatby Maternity Hospital.* ***Subjects*** *a convenience sample of 240 menopausal women were recruited in the study.* ***Tools: Tool I:*** *Menopausal Women Basic Data Structured Interview Schedule, Tool II: Greene Climacteric Scale.* ***Results:*** *17.1% of women experienced severe menopausal symptoms. Women who had history of medical diseases and did not practice exercise had OR 1.69 & 1.72 time the risk of developing menopausal symptoms. Obese women had 2.11 times the risk of developing menopausal symptoms compared with those with normal weight. Finally smoker women had 1.88 times the risk of developing menopausal symptoms than none smokers women.* ***Conclusion:*** *Menopausal symptoms were common among women. Moreover the risk of severe menopausal symptoms decreased with increase age. While as marital status, occupation, duration of menopause, lack of exercise, presence of medical condition, obesity as well as smoking were significant predicators associated with severe menopausal symptoms.*
Key Words: *Menopause, Menopausal Symptoms, Severity, Risk factor*

I. Introduction

Menopause is a milestone in a woman's life. It is an event- marks the transition from the fertile years to a life phase characterized by a relative hormonal rest and stability, which shows a certain similarity with the life period preceding the first menstruation. In western societies, attitudes towards menopause are influenced by social and cultural assumptions about older women which often perceived as a time of changing emotional and physical health. Yet anthropological studies have shown how menopause can be a positive event, particularly when it signifies a change in social status. Menopause is an aspect of human aging and a useful predictive risk marker of a variety of aging-related diseases and health problems [1] .The word 'menopause' is derived from men and pausis that is a direct description of the physiological event in women where end of reproductive life that occurs for which no other pathological cause can be established after 12 consecutive months of amenorrhea. The word 'climacteric' is a Greek derivation of the 'ladder' or 'steps of a ladder'. Over the years, the view of middle-aged women has varied from the extremes of either climbing up or down that ladder. Climacteric or peri-menopausal period include the whole process of menopause; pre-menopause; during menopause; and post-menopause [2,3].

The premenopausal transition is the time before the final menstrual period (FMP) associated with irregular cycles and hormonal instability symptoms. Reproductive ageing occurs with loss of follicular activity within a wide age range from 45 and 55 years of age and woman life expectancy is around 70 years. Therefore, the post-menopause period corresponds to around 1/3 of a woman's lifespan [4].

The proportion of women living to the menopause and beyond has increased over the last centuries. The life expectancy of women has rapidly increased due to various preventive medicines improvements in the treatment of disease and now about 80 years for females in developed countries. In Egypt, at 2000, women aged 50 years and more constituted 14.03% of the female population. This number is estimated to rise to 20.9% of the female population by the year 2025[5-8].

During menopause women experience many physiological changes, which may cause a wide array of physical and psychological symptoms. Every day millions of women suffer from these peri and post-menopausal complaints. Symptoms can include *vasomotor symptoms* (i.e., hot flashes, night sweats), *psychological symptoms (i.e.* mood and sleep disturbances, headaches, anxiety) *urogenital symptoms (i.e.*

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urogenital atrophy, urinary tract infections and incontinence) *cardiovascular alterations (i.e.* cardiovascular diseases and alterations in the distribution of fat) and sexual *dysfunction and decreased libido*, and loss of skin elasticity as well as bone loss which may have a significant negative impact on the overall quality of life for a substantial number of women. A woman may experience none, one, some, or even all of these symptoms. Severity can also vary among individuals, with some women experiencing severe symptoms and others having mild symptoms. Furthermore, severity can vary within individuals on a day-to-day basis, making a woman's symptom experience somewhat unpredictable and difficult to manage [9-11].

The severity of menopausal symptoms compromise daily life activities and social life thus, impairing quality of life and negatively impacting on women overall health. In some studies, smoking is associated with more menopausal symptoms but this was not found in a Swedish cohort study of women aged 49–53 years. A recent study from Finland did not reveal any association between smoking and bothersome hot flushes, but they found that physically active women reported fewer symptoms than women with a more sedentary life style.[3] The level of menopausal symptoms may differ according to the type of occupation. It has been reported that female teachers in Egypt had high scores of depressive mood, loss of concentration, insomnia and hot flashes as menopausal symptoms [12,13].

A The large variations in reported symptoms prevalence across nations and cultures, and the uncertainty regarding impact of life style factors and social determinants on menopausal symptoms call for more research. Therefore some studies have investigated factors that can be associated with the severity of these symptoms, such as socioeconomic aspects, lifestyle, chronic conditions and comorbities but some findings are conflicting between studies. Due to the conflicting evidences in the literature, further studies that investigate possible predictor factors to the severity of menopausal symptoms in postmenopausal women are necessary [14,15]. This information is important so that maternity nurses can encourage women to reflect on their different habits and lifestyles, value critically the illnesses they have suffered and identify their risk factors, in order to project and plan a subsequent healthy life in the years to come. Accordingly this study was greed to identify factors associated with the severity of menopausal symptoms among postmenopausal women in order to help in updating as well as enhancing the body of knowledge for the nursing field and improve nursing practices, which will ultimately contribute to identification of postmenopausal women health needs in order to provide competent care as well as cope with menopausal symptoms.

Aim of the study
The aim of this study was to identify factors associated with the severity of menopausal symptoms among postmenopausal women.
Research question:
   What are the Factors associated with the severity of menopausal symptoms among postmenopausal women?

II. Materials and Method
Materials
Research design
An explanatory descriptive research design was used to carry out this study.
Setting
The study was conducted in the gynecologic outpatient clinics at El Shatby Maternity Hospital affiliated at Alexandria University. It receives clients from Alexandria as well as adjacent governorates namely: Elbehera, et al..

Subjects
   According to Epi info 7 program sample size estimation program a convenience sample of 240 menopausal women out of 900 (representing the average number of women attending the previously mentioned setting during the last three months prior to the study) were recruited in the study.
Inclusion criteria: women who aged 45 to 60 years old and above, with natural menopause or not currently taking hormonal replacement therapy and willing to participate were included in the study.

Tools: two tools were used to collect the necessary data:
Tool I: Menopausal Women Basic Data Structured Interview Schedule:
This tool was developed by the researchers. It entailed the following four parts; *first part*: women socio-demographic characteristics (age, level of education, occupation, marital status, residence & family type), *second part*: menstrual and menopausal history (age of menarche, amount, rhythm, duration, onset of menopause), *third part*: Medical and surgical history (presence of chronic diseases, medications, surgical operations) and *fourth part*: life style habits (exercise**,** smoking, as well as body mass index BMI).

Tool II: Greene Climacteric Scale

This tool was originally proposed and revised by Gerald Greene [16] (1976) to measure the severity of menopausal symptoms. The researchers adapted and translated it into Arabic language. It entails 21 items divided into 4 sections. Specifically; psychological symptoms (11 items), somatic symptoms (7 items), vasomotor symptoms (2 items), and sexual symptoms (1 item). Subjects' response to each item varied among a 4 point likert scale. Namely: not bothering (0), bothering a little (1), quite a bit bothering (2) and extremely bothering (3). Each subject's total score ranged between 0 and 63. The Severity of menopausal symptoms for each subjects ranked as follow : Mild $0 < 21$, Moderate $21 < 42$ and Severe $42 \leq 63$.

Method:

The study was executed according to the following steps:

1. An official letter from the Faculty of Nursing-University of Alexandria was directed to the responsible authorities of El Shatby Maternity Hospital to obtain permission to conduct the study and collect the necessary data.

2. Tool (I) was developed by the researchers based on extensive review of recent relevant literature. Tool (II) was adapted and translated into Arabic language.

3. Tools were tested for content validity by a jury of five experts in the field of obstetric and gynecologic nursing. The recommended modifications were done and the final form was finalized after proving valid.

4. Tools' reliability was checked by Cronbach's alpha test and the result was highly reliable (0.837).

5. A pilot study was carried out on 24 menopausal women (excluded from the study subjects) from the previously mentioned settings to assure feasibility of the study, clarity and applicability of the tools and to identify obstacles that might interfere with the process of data collection. Tools were modified accordingly prior to data collection.

6. Each woman was individually interviewed. The duration of each interview ranged between 20-30 minutes. Three days per week (from 9:30 am to 12:30 pm) were specified for data collection over a period of three months, started from the beginning of July till the end of September 2017. An average of 3 to 5 interviews was performed per day.

7. Latest version of the statistical software package SPSS (Version-21) was used. The collected data was revised, categorized, coded, computerized, tabulated and analyzed. Descriptive statistics and Multivariate analysis were used to identify and compare different risk factors which affected on symptoms of menopause.

8. Ethical considerations:

For each recruited subject an informed oral consent was obtained after explaining the purpose of the study. In addition, her anonymity, privacy, freedom to withdraw from the study at any time and confidentiality of her data were all emphasized prior starting the interview.

III. Results

Table (I) shows that the Mean ± SD of the subject's age was 56.2 ± 16.8 specifically, more than one-third (34.20% and 40.80%) of them were either in their early (50<55year) or late (55-<60) fifties, respectively. Only 4.6% of them were less fifty. One- third (34.20%) of them holding a secondary school certificate. Only 15.8% of them were university graduates. More than two– fifths (42.5%) of them were housewives. More than one-half (56.7%) of them dwelled in rural areas. Slightly more than three -fifths (60.8% and 63.3%) of them were married within nuclear families, respectively. Slightly more than one-third (37.5%) of them did consider their families' income enough.

Table (I): Number and percent distribution of the study subjects according to their socio-demographic characteristics

Socio- demographic characteristics	No.(240)	%
Age in years		
• <50	11	4.6
• 50<55	82	34.2
• 55<60	98	40.8
• ≥60	49	20.4
Range **Mean ±S.D.**	**48 – 68** **56.2±6.8**	
Level of education		
• Illiterate	58	24.2

• Basic education(primary-preparatory)	62	25.8
• Secondary education	82	34.2
• University	38	15.8
Marital status		
• Married	146	60.8
• Divorced	42	17.5
• Widow	35	14.6
• Single	17	7.1
Occupation		
• Employees	42	17.5
• Worker	59	24.6
• House wives	102	42.5
• Retired	37	15.4
Residence		
• Urban	104	43.3
• Rural	136	56.7
Family type		
• Nuclear	152	63.3
• Extended	88	36.7
Monthly income		
• Enough	90	37.5
• Not enough	150	62.5

According to table (II) it was observed that only 22.2% of the study subjects had participated in physical activity. More than one half (67.9%, 58.5%) of women reported that performing moderate exercises for 2-3 times per week, respectively. Approximately an equal percent (38.3% &35.4%) of them had either normal or over weight, respectively. While about one fifth (17.9%) of them were obese. In relation to smoking, slightly less than one fifth (17.1%) of them were smoker.

Table (II): Number and percent distribution of the study subjects according to their life style habits

Life style habits	No (240)	%
Physical activities (exercise)		
• No	187	77.9
• Yes	53	22.1
Type of exercise		
• Moderate exercise*	31	58.5
• Weight-bearing exercise**	22	41.5
Number of Physical activities /week (n=53)		
• Once | week	10	18.9
• two to three times | week	36	67.9
• Daily	7	13.2
Smoking		
• Yes	41	17.1
• No	199	82.9
Body mass index (BMI)		
• Under weight	20	8.3
• Normal weight	92	38.3
• Over weight	85	35.4
• Obese	43	17.9

*Moderate exercise was defined as "exercise or work lasting 30 min or more without stopping.
**Weight-bearing exercise was defined as exercise where your legs bear your body weight, such as walking, jogging, dancing, or weight training."

Table (III) shows Number and percent distribution of the study subjects according to their menopausal symptoms using Greene Climacteric Scale. It was observed that The most common vasomotor symptoms for all women (n = 240) were muscle and joint pain 76.7%, headaches 71.7%, hot flushes 68.8% , night sweat 59.2% as well as dizziness and fainting 9.2%. While psychological symptoms; difficulty in sleeping was among 52.1% of the study subjects followed by feeling tired or lacking in energy 47.9%. Moreover only 18.8% and13.3% of them reported either feeling unhappy or crying, respectively. As regards sexual symptoms it was observed that more than one-third (34.4%) reported loss of interest in sex

Table (III): Number and percent distribution of the study subjects according to their menopausal symptoms using Greene Climacteric Scale

| Menopausal symptoms	No(240)	%	Ranking
Psychological symptoms			
• . Heat beating quickly or strongly	98	40.8	8
• Feeling tense or nervous	110	45.8	7
• Difficulty in sleeping	125	52.1	5
• Excitable	84	35.0	12
• Attacks of anxiety, panic	80	33.3	13
• Difficulty concentrating	60	25.0	16
• Feeling tired or lacking in energy	115	47.9	6
• Loss of interest in most things	65	27.1	15
• Feeling unhappy or depressed	45	18.8	17
• Crying spells	32	13.3	18
• Irritability	25	10.4	20
Vasomotor symptoms			
• Feeling dizzy or faint	22	9.2	21
• Pressure or tightness in the head	30	12.5	19
• Parts of the body feel numb	77	32.1	14
• Headaches	172	71.7	2
• Muscle and joint pain	184	76.7	1
• Loss of feeling in hands or feet	92	38.3	9
• Breathing difficulty	90	37.5	10
• Hot flush	165	68.8	3
• Night Sweat	142	59.2	4
Sexual symptoms			
• Loss of interest in sex	85	35.4	11
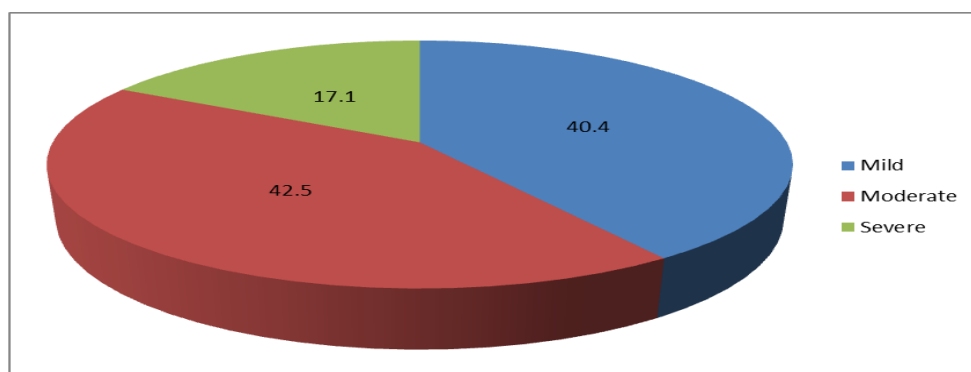
Figure (1): Percentage distribution of the study subjects their total score of the severity of menopausal symptoms level

The figure (1) illustrates that slightly more than two fifths (40.4% and 42.5%) of the study subjects suffered from mild & moderate menopausal symptoms, respectively. While less than one fifth (17.1%) of them experienced severe menopausal symptoms.

Table (IV) portrays the relationship between study subject's socio-demographic characteristics & their total score of the severity of menopausal symptoms level**.** There was statistically significant difference between the severity of menopausal symptoms and age, occupation as well as marital status. As regard age, more than two- fifths (46.3%) of study subjects aged 50-55 experienced severe menopausal symptoms compared to only 26.8% and 7.3% of those aged 55-60 and more than 60 respectively. Considering occupation, about two thirds (65.5%) of the housewives suffered from severe menopausal symptoms compared to only 4.9 % and 9.8% of the employee and worker, respectively. In relation to marital status, only 7.3% of married women exhibited severe menopausal symptoms compared to more than one third (34.1% &34.1%) of divorced and widow as well

as about one quarter (24.4%) of single women. The same table indicates no statistically significant correlation between the severity of menopausal symptoms and educational level.

Table (IV) Relationship between study subject's socio-demographic characteristics
& their total score of the severity of menopausal symptoms

| socio-demographic characteristics | severity of menopausal symptoms | | | | | | x^2/p |
| | Mild (no=97) | | Moderate (no=102) | | Severe (no=41) | | |
	No	%	No	%	No	%	
Age in years							4.65
• <50	2	3.1	1	1.0	8	19.5	0.013*
• 50<55	27	41.5	36	35.3	19	46.3	
• 55<60	47	72.3	40	39.2	11	26.8	
• ≥60	21	32.3	25	24.5	3	7.3	
Level of education							1.98
• Illiterate	32	33.0	15	14.7	11	26.8	0.285
• Primary& preparatory)	20	20.6	25	24.5	17	41.5	
• Secondary education	29	29.9	45	44.1	8	19.5	
• University	16	16.5	17	16.7	5	12.2	
Marital status							12.9
• Married	57	58.8	86	84.3	3	7.3	0.002*
• Divorced	22	22.7	6	5.9	14	34.1	
• Widow	16	16.5	5	4.9	14	34.1	
• Single	2	2.1	5	4.9	10	24.4	
Occupation							9.85
• Employees	25	25.8	32	31.4	2	4.9	0.006*
• Worker	22	22.7	16	15.7	4	9.8	
• House wives	30	30.9	45	44.1	27	65.9	
• Retired	20	20.6	9	8.8	8	19.5	

x^2 (P): Chi-Square Test & P for x^2 Test   *: Significant at P ≤0.05

Table (V) exhibits the relationship between study subject's menstrual &menopausal history and their total score of the severity of menopausal symptoms. Only duration of menopause was statistically significantly correlated with severity of menopausal symptoms P= 0.001. That is to say majority (90.2%) of the women who had menopause since 5 to less than 10 years suffered from severe menopausal symptoms compared to only 2. 4%of those who had menopause since10 years and more. Inquiry about menstrual history revealed that there was no statistically significant correlation between the study subjects' menstrual history where P = 0.147, 0.107 & 0.069 respectively.

Table (V) Relationship between study subject's menstrual &menopausal history and their score severity
of menopausal symptoms

| menstrual &menopausal history | severity of menopausal symptom | | | | | | x^2/p |
| | Mild (no=97) | | Moderate (no=102) | | Severe (no=41) | | |
	No	%	No	%	No	%	
Age at menarche							3.83
• >14	52	53.6	45	44.1	25	61.0	0.147
• 14+	45	46.4	57	55.9	16	39.0	
Duration of Menstruation							3.58
• 3 - 5days	81		84		20		0.107
• >5 days	16	16.5	18	17.6	11	26.8	
Interval of Menstruation (Days)							5.02
• <21	52	53.6	25	24.5	8	19.5	0.069
• 21-35	22	22.7	70	68.6	30	73.2	
• >35	23	23.7	7	6.9	3	7.3	
Duration of Menopause							22.1
• 1>5	72	110.8	50	49.0	3	7.3	0.001*
• 5>10	7	10.8	45	44.1	37	90.2	
• 10 +	18	27.7	7	6.9	1	2.4	

x^2 (P): Chi-Square Test & P for x^2 Test   *: Significant at P ≤0.05

The table (VI) reveals that there were statistically significant difference between severity of menopausal symptoms and exercise, BMI, smoking and medical diseases where p= (0.001, 0.001, 0.0001 and 0.001), respectively. That is to say, the majority (90.2%) of women who did not perform exercise had severe menopausal symptoms compared to only 9.8 of those do it. In addition, more than two -thirds (68.3%) of obese women had severe menopausal symptoms compared to only 19.5% of normal weight women. Slightly less than three quarters (73.2%) of smoker women reported severe menopausal symptoms compared to 26.8% of non-smoker women. The table also revealed the majority of women (75.6% & 82.9%) with history of diabetes and hypertension reported severe menopausal symptoms compared to only 34.3% and 20.6% of those had moderate menopausal symptoms.

Table (VI) Relationship between study subject's life style &medical history and their total score of the severity of menopausal symptoms

life style &medical history	severity of menopausal symptom						x^2/p
	Mild (no=97)		Moderate (no=102)		Severe (no=41)		
	No	%	No	%	No	%	
Exercise							66.8 0.001*
• No	50	51.5	100	98.0	37	90.2	
• Yes	47	48.5	2	2.0	4	9.8	
Body mass index (BMI)							20.11 0.001*
• Under weight	16	24.6	3	2.9	1	2.4	
• Normal weight	42	64.6	42	41.2	8	19.5	
• Over weight	32	49.2	49	48.0	4	9.8	
• Obese	7	10.8	8	7.8	28	68.3	
Smoking							42.65 0.0001*
• Yes	3	3.1	8	7.8	30	73.2	
• No	94	96.9	94	92.2	11	26.8	
Medical diseases							0.001* 0.001* 0.036* 0.045*
• D.M.	16	16.5	35	34.3	31	75.6	
• Hypertension	10	10.3	21	20.6	34	82.9	
• Renal disease	3	3.1	4	3.9	6	14.6	
• Bronchial asthma	4	4.1	5	4.9	5	12.2	

x^2 (P): Chi-Square Test & P for x^2 Test   *: Significant at P ≤0.05

Table (VII) shows multivariate analysis of different risk factors associated with severity of menopausal symptoms. It was obvious that after the multivariate analysis, it could be observed that the Age constituted a protection factor for moderate to severe symptoms age (PR 1.62; CI 95% (0.36-0.72; (P <0.001). that is to say with increase age menopausal symptoms decrease. Divorced menopausal women who were (PR 1.63; CI 95% 0.42-0.89; p < 0.013) and widow (PR 1.6; CI 95% 0.61-0.92; p 0.045) as well as Single (PR 1.8; CI 95% 0.55-0.83; p < 0.002) presented higher incidence of severe symptoms compared with married one. Housewives women (PR 1.92; CI 95% 0.36-0.70; p < 0.016) and Retired (PR 1.72; CI 95% 0. 0.36-0.82; p < 0.002) presented higher prevalence of menopausal symptoms in comparison to employee. Women who were within 5–10 years of menopause presented nearly 1.5 times higher prevalence of moderate to severe symptoms compared with those more than 10 years of menopause (p < 0.023).

The table also, revealed that women who had history of medical diseases and who did not practice exercise (PR 1.69; CI 95% 0.32-0.86; p < 0.022) and (PR 1.72; CI 95% 0. 0.61-0.86; p < 0.013) respectively, were associated with higher prevalence severe symptoms. Obesity was the significant predictor for severity of menopausal symptoms i.e. obese women had 2.11 times the risk of developing menopausal symptoms compared with those with normal weight. Finally smoker women had 1.88 times the risk of developing menopausal symptoms than none smokers women.

Table (VII): Multivariate analysis of different risk factors associated with menopausal symptoms

Variable	Relative risk	C.I (95%)	P value
Age	1.62	(0.36- 0.72)	0.001*
Marital status			
• Married	1.0		
• Divorced	1.63	0.42-0.89	0.013*
• Widow	1.6	0.61-0.92	0.045*
• Single	1.8	0.55-0.83	0.002*
Occupation			
• Employee	1.0		
• Worker	1.06	0.62-1.69	0.265
• housewives	1.92	0.36-0.70	0.016*
• Retired	1.72	0.36-0.82	0.002*
Duration of Menopause			
• 1-5	1.0		
• 5-10	1.5	0.22-0.81	0.023*
• >10	1.2	0.46-1.65	0.098
Medical diseases	1.69	0.32-0.86	0.022*
Exercise	1.72	0.61-0.86	0.013*
Obesity	2.11	0.31-0.81	0.027*
Smoking	1.88	0.25-0.77	0.015*

® reference category
Value inside cells are PR(95% CI)
PR Relative risk
CI confidence interval
*: Significant at P ≤0.05

IV. Discussion

Menopause is a universal event that occurs within a long process of climacteric change when clinical, biological and endocrinological symptoms of menstrual cession occur. The timing of menopause as well as women's experience of menopausal symptoms varies across populations. The incidence of menopausal symptoms is influenced by socio-demographic/ sociocultural factors, economical stresses, and general health status, individual perception of menopause, genetic and racial differences and reproductive parameters like parity [17, 18].

Thus, it is necessary to understand the process of menopause and women's health. Understanding women's health requires an awareness of the context of women's life, as well as extensive research to clarify influencing factors of women's quality of life. This approach is very useful for healthcare planning to improve women's quality of life. Therefore the present study was done to determine Factors associated with the severity of menopausal symptoms among menopausal women.

The results of the current study revealed that the mean age of menopause among the study subjects was 56.2 ± 6.8   years. However, this result agrees with the findings of another study conducted by **Goda R (2014),** [19] who had assessed coping strategies of menopausal symptoms among working women, In Alexandria, Egypt. She reported that the mean age of menopause was 54.45± 2.2 years. This result is also somewhat consistent with **Dotlic j et al (2017),** [20] who conducted study about menopausal transition in southern Europe: comparative study of women in **Serbia &Portugal,** where they found that the average age of women was 50 (SD = 5.61) years.

On the other hand, this same result is incongruent with the findings of two other researchers. First: **Pathak RK et al (2010)** [21] . They had studied age at menopause and associated bio-social factors of health in **Punjabi** women. Their results showed that the mean age at natural menopause was found to be 47.91(± 3.16) years. Second: **Avin Alva BR et al (2016)** [22]**,** they carried out study about the average age of menopause and menopause associated symptoms among rural women in **Mangalore, Karnataka**. They reported that the Mean age at menopause was 45.32 +/-2.79. This disagreement may be attributed to menopausal age varies from country to country even in same country in different region. These diversities may be because of regional, community & ethics variations. Genetic and environmental and nutritional factors may also play a role.

The present study revealed that the most common vasomotor symptoms for all women were muscle and joint pain, headaches, hot flushes, night sweat and dizziness and fainting. While for psychological symptoms were difficulty in sleeping followed by feeling tired or lacking in energy. This could be attributed to the fact that the menopausal symptoms related to the progressive reductions in hormonal secretion and ovarian estrogen deficiency. This finding was relatively consistent with the finding of five other researchers. First: **Marahatta R (2012)** [23] . She had assessed menopausal symptoms among peri and postmenopausal women attending NMCTH in **Nepal**. Her results revealed that women were to have more physical symptoms than

psychological symptoms. They expressed joint pain, sleep disturbances and vasomotor symptoms. Second: **Abdullah B et.al (2014)** [24] . They had investigated the Prevalence of menopausal symptoms, its effect on quality of life among **Malaysian** women and their treatment seeking behavior. The study indicated that joint and muscular discomfort (73.3%) and fatigue (59.3%) were the most prevalent symptoms. Third: **Batool S et al, (2014)**[25]. They had conducted a study about perception of menopausal symptoms among educated versus non educated women in **Pakistan**. Their study showed that sleeping problems (93.0%); heart discomfort (80.0%); hot flushes and sweating (70.0%); joint and muscular pain (52.0%); depressive mood (63.0%); irritability (42%) were the most common symptoms. Fourth: the previously mentioned Egyptian study done by **Goda R (2014)**[20]. She concluded that the most commonly symptoms were muscle and joint pain 72%, headaches 64%, hot flushes 46.67% and night sweat 58.67%. Fifth: **Yisma E et al (2017)** [26] . They did study about Prevalence and severity of menopause symptoms among perimenopausal and postmenopausal women aged 30-49 years in Gulele sub-city of Addis Ababa, **Ethiopia**. They found that (65.9%) difficulty falling sleep (49.6%) and irritability (45.1%).

The reasons for variation in frequencies may be attributed to the fact that menopausal symptoms are influenced by socio-demographic/ cultural factors, economic stress, general health status, genetic and racial differences. It also influenced by climate, diet, lifestyle, functions that women held and their attitude to the aging process and method of symptoms identification as well as level of awareness about the symptoms. The prevalence of menopausal symptoms varies across the world continents; they ranges from 74% of women in Europe, 36–50% in North America, 45–69% in Latin America and 22–63% in Asia. While as The prevalence of menopausal symptoms in Africa is disconcertingly high. The highest prevalence of sleep disorders, very high prevalence of depressive disorders, and high prevalence of sexual dysfunction were noted [27, 28].

The present finding revealed slightly more than two fifths of the study subjects suffered from mild & moderate menopausal symptoms, respectively. While as less than one fifth of them experienced severe menopausal symptoms. This finding is relatively consistent with **M Gharaibeh et al (2010)** [29] who studied severity of menopausal symptoms among **Jordanian** women. They showed that 15.7%, 66.9% and 17.4% were experiencing severe, moderate and mild menopausal symptoms, respectively.

On other hand this finding is inconsistent with the study of **Sharma k et al.(2018)** [30] who had conducted study about "association of age at menopause with post-menopausal symptoms, menarche age and other reproductive factors among rural females in **SHIML"**. They reported that the majority of the post-menopausal women (70.7%) had mild or no menopausal symptoms. In addition, the current findings contradict the study of **Gang M** et al (**2017**) [31]. They had assessed how menopause symptoms and attitude impact **korean** women's quality of life after adjuvant treatment for breast cancer. They found overall participants endorsed mild symptoms. Moreover, it is not in accordance with the study of **Masjoudi M et.al** (**2017**) [32] who had studied the severity and frequency of menopausal symptoms in middle aged women, **Rasht, Iran.** Their study revealed that severe symptoms were seen only in three postmenopausal women and 55.2% of them had mild to moderate symptoms.

Factors associated with severity of menopausal symptoms
The results of the current study revealed the *Age* constituted a protection factor for moderate to severe symptoms (PR 1.62; CI 95% (0.36-0.72; (P <0.001). that is to say with increase age menopausal symptoms decrease. This could be attributed to a later years of life menopausal women are usually less active physically and involved in religious activities like offering prayers and other rituals. Other reason may be the experience and maturity attained by women at that age to cope effectively with the biological changes. Moreover after some years of menopause, hormonal stability occurs, leading to reduction or absence of symptoms.
This finding is in harmony with the study done **Nisar N et al (2012)** [33] who assessed age and symptoms at natural menopause: a cross-sectional survey of rural women in **Sindh Pakistan**. They found that the increased frequency of symptoms during earlier years of menopause and declined frequency during later years of menopause. In addition to study done by **Gjelsvik B (2011)** [34] who had assessed symptom prevalence during menopause and factors associated with symptoms and menopausal age. They found the prevalence of menopausal symptoms reached peak values at earlier ages 53–54. Moreover, **Capistrano E et al** (2015) [35] who conducted study about factors associated with the severity of menopausal symptoms in postmenopausal Brazilian women. They observed that the moderate to severe menopausal symptoms were inversely associated with age (PR 0.96; CI 95% 0.94–0.99; p < 0.01).

Surprisingly, in the present study revealed no a statistically significant correlation between severity of menopausal symptoms and women's *level of education*. It was expected that menopausal symptoms severity increased with lower levels of education. Association found with education could be due to better lifestyle habits in those with higher education, resulting in reduced onset of menopausal symptoms. However, this result agrees with the findings of another study conducted by **Chaillet et al (2006)** [36] about " age at menopause and

menopausal symptoms among **Malaysian** women. They found that no significant correlation between the severity of menopausal symptoms and the level of education.

On the other hand, this same result is incongruent with the findings of another study conducted **by Li L et al (2012)** [37] who had studied Factors associated with the age of natural menopause and menopausal symptoms in **Chinese** women. Their results revealed that women with poor educational background presented severe menopausal symptoms. They attributed their result to these women with low educational attainment as well as their heightened vulnerability to experience adverse health outcomes, which would negatively impact on lifestyle behaviors and reproductive health. This disagreement between the Chinese study findings and the current study result may be attributed to the fact that the Chinese study subjects were 20,275 women which may have provided a wide range for variation in menopausal symptoms and a better representation for the impact of menopausal women's level of education unlike the present study, which was conducted on 240 women.

The present study revealed a statistically significant difference between the severity of menopausal symptoms and *occupation*. Housewives women (PR 1.92; CI 95% 0.36-0.70; p < 0.016) and Retired (PR 1.72; CI 95% 0. 0.36-0.82; p < 0.002) presented higher prevalence of menopausal symptoms in comparison to employee. This result is kind of expected because working condition increase socialization that may help in getting others experiences, information and help express feelings. In addition, employed women also seem to have more opportunities for self-realization outside the home and thus report mild menopause symptoms.

The present finding is relatively in consistent with the study of **Lee MS et al (2010)** [38] about Factors influencing the severity of menopause symptoms in **Korean** postmenopausal women. They found that housewives experience the menopause associated vasomotor symptoms more than working women. They also added that working women have more communication with other people that is why they suffer from mild symptoms.

Severity of menopausal symptoms was also correlated with the *duration of menopause* in the current study. Where, women who were within 5–10 years of duration menopause presented nearly 1.5 times higher prevalence of severe menopausal symptoms. The present study is relatively concordant with the study done by **Da Fonseca AM et al (2013)** [39] about "Impact of age and body mass on the intensity of menopausal symptoms in 5968 Brazilian women " in **Brazil**, where they reported that menopausal symptoms tended to reduce with time after menopause. In addition, the current finding is relatively similar to the previously mentioned study of **Capistrano et al (2015)** [35] They found that study subjects within 6–10 years of menopause presented nearly 1.4 times higher incidence of moderate to severe symptoms compared with those with more than 10 years of menopause.

Regarding *BMI*, The present study results revealed a statistically significant difference between BMI and severity of menopausal symptoms. Where, obese women had severe menopausal symptoms compared with normal weight women (p < 0.01).The current finding is relatively in congruence with **Saccomani S et al (2017)** [40] they had assessed does obesity increase the risk of hot flashes among midlife women?: a population-based study. They concluded that menopausal symptoms, including vasomotor, joint, and urinary symptoms, were related to obesity.

Such an agreement between the result of the current study & the previous result is emphasized by some literatures which had reported that obese women are simply more prone to vasomotor symptoms because adiposity or body fat acts as an insulator; obesity may inhibit dissipation of heat resulting from the increased internal body temperatures that arise from normal thermoregulatory mechanisms.

Exercise was also a predictor for severity of menopausal symptoms in the current study. It was observed that non physically active were associated with higher prevalence severe symptoms (PR 1.72; CI 95% 0. 0.61-0.86; p < 0.013). This could be contributed to that exercise may help to stabilize the thermoregulatory center of the brain through beta-endorphin production and contribute towards the improvement of mental wellbeing, sense of achievement and self-esteem. This result is concurrent with **Goranitisl L et al (2017)** [41] **& Hu L et al (2017)** [42], they found that exercise was effective in reducing menopausal symptoms, depression as well as enhancing physical self-esteem. Also t reported that women with a sedentary lifestyle reported more psychological symptoms, somatic/pain and vasomotor symptoms than did women who exercised regularly.

Regarding *chronic diseases*, the finding of the current study revealed a statistically significant difference between chronic illness and severity of menopausal symptoms. Where, the majority of participant (75.6% & 82.9%) with history of diabetes and hypertension reported severe menopausal symptoms compared to only 34.3% and 20.6% without history of the same previous mention diseases had moderate menopausal symptoms. The current finding is relatively similar to the study of **Tan et al (2014)** [43]. They found that Menopausal symptoms were experienced less by women who were with no history of chronic diseases.

In the present *smoking* was another significant of menopausal symptoms. It was found that smoker women had 1.88 times the risk of developing menopausal symptoms than none smokers women. This could be attributed to the fact that cigarette smoking has antiestrogenic properties, which may worsen the symptoms and health risks associated with menopause. This result is in line with **Copeland, Amy L (2017)** [44] who had

assessed severity of menopausal symptoms and nicotine dependence amongst postmenopausal women smokers. They found smoking increase the overall severity of menopausal symptoms.

V. Conclusion

Menopausal symptoms were common among women. Moreover the risk of severe menopausal symptoms decreased with increase age. While as marital status, occupation, duration of menopause, lack of exercise, presence of medical condition, obesity as well as smoking were significant predicators associated with severe menopausal symptoms.

Recommendation

- There is a need to improve awareness among the menopausal women and healthcare provider on menopausal symptoms and variety of intervention ranging from lifestyle modifications to pharmacological interventions, including hormonal/non-hormonal and complementary therapies.
- Healthcare providers should practice an evidence-based management in offering the best management for these women. The hope to see women embracing menopause gracefully should be upheld by everyone, rather than leaving them suffering in silence.
- Further studies are needed to shed light on menopausal women's health needs to promote health and the quality of life of them.

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