Maternity Nurse's Perception regarding COVID-19 among Post-menopausal Women

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Abstract

Background: Post-menopausal women are more susceptible to COVID-19 than other age women's and experience high morbidity and mortality. **Aim** of the study was to assess maternity nurse's perception regarding COVID-19 among post-menopausal women. **Research design**: Descriptive research design was used to conduct this study. **Setting**: The study was conducted at the Obstetrics and Gynecological department in Benha University hospital. **Sample**: Convenient sample was used in this study total sample (60 nurses). **Tools of data collection**; Two tools were utilized for collect data. I: Self-Administrated questionnaire sheet, II: Modified Likert scale to assess attitude of maternal nurses about COVID-19 among post-menopausal women. **Results:** Less than three quarters of the studied nurses had correct knowledge regarding prevention of COVID-19, while the majority of them had incomplete knowledge regarding the incubation period, diagnosis and manifestation of the COVID-19 virus respectively additionally the majority of the studied nurses agreed with isolation of post-menopausal women with COVID-19, more than half of them not sure that COVID-19 disease among post-menopausal women leads to death in all cases and more than one third disagreed with ability to receive the COVID-19 vaccine, with another disease; Therefore, the study questions were answered. **Conclusion:** More than half of the studied nurses had a good level of knowledge, while more than one third of them had an average level of knowledge. And less than one tenth of them had a poor level of knowledge. Additionally, more than three quarters of the studied nurses had positive level of attitude regarding COVID-19, while less than one quarter of them had a negative level of attitude. **Recommendations:** Continues educational programs for nurses to raise perception regarding COVID-19of post-menopausal women should be a priority to ensure early diagnosis of the disease.

Keywords: COVID-19, Maternity Nurses, Perception, Post-menopausal women.

Introduction:

(COVID-19) is a new virus in a large family called coronaviruses, which infects the respiratory system and ranges in severity from the common cold to more serious diseases such as "SARS" and "Mers", and no treatment has been discovered for COVID-19 so far. COVID-19, also known as the coronavirus is an ongoing global pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 can transmit between people through the respiratory route after an infected person coughs, sneezes, sings, talks, or breaths (**Youn et al., 2021**).

People of all ages can be infected by the COVID-19 virus. Older people and younger people can be infected by the COVID-19 virus, while older people and people with pre-existing medical conditions such as asthma, diabetes, and heart disease appear to be more

vulnerable to becoming severely ill with the virus (**BaquedanoMainar et al., 2021**).

Post-menopause is a term to describe the time after women had gone through menopause. During the post-menopausal period, women menstrual period has been gone for longer than 12 consecutive months. At this stage in life. The menopausal symptoms may become milder or go away completely. However, some people continue to experience menopausal symptoms for a decade or longer after menopause (**Hipólito& Valadares, 2021**).

There are three stages of menopause: peri menopause, menopause and post-menopause. Most people feel lingering symptoms from menopause, which are less intense. In some cases, they almost disappear. Lingering symptoms are caused by low levels of reproductive hormones (**Cagnacci&Xholli, 2021**).

Post-menopausal women are also at higher risk of severe COVID-19 infection than premenopausal women, further strengthening the role of estrogens. Research has found that certain types of white blood cells decline after menopause. Post-menopausal women also generally have higher levels of cytokines, which can cause chronic inflammation. Also, studies have found that immune cell functions are also reduced after menopause (**Liu et al., 2021**).

Post-menopausal women have lower levels of the female sex hormone estrogen and appear to be at higher risk of developing serious complications of COVID-19, Menopause itself can therefore impact immunity, "Immunity is a complex issue that is impacted by multiple factors some of which control and some less so. The hormone estrogen is shown to have a protective role in women, so women who are not on hormone therapy during menopause might be more at risk than those without a decline in estrogen (**Gersh et al., 2021**).

Coronavirus disease (COVID-19) is contagious, it is suggested that people of older age and/or with chronic diseases must stay in an isolated place and practice self-quarantine. During this period, many people have developed anxiety due to fear of death and worry during or after their isolation/self-quarantine. Psychological results such as stress, anxiety, and depression caused by the outbreak were found to be more common in the female gender. (**BelgenKaygisiz,B et al., 2020**).

Prevention measures of Coronaviruses among post-menopausal women were designed based on preventing or delaying route of transmission by following infection controls measures as hand washing, wearing masks, and avoiding overcrowding. Post-menopausal women are a high-risk group due to low immunity so women in this age should be interested in increasing immunity by following a healthy lifestyle as eating a healthy diet rich in vitamins, minerals, fibers, and especially protein (**Youn et al., 2021**).

Nurses play an important role in facing COVID-19 through health promotion, disease prevention, community participation as providing primary care, the link between the service user and the health team, comprehensive care, monitoring vulnerable families and following up on suspected and mild cases. Responsibility will also fall on nurses in addressing problems through screening potential cases, recognizing patients' need for isolation or quarantine, and giving nursing care for suspected cases (**Garg et al., 2020**).

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Significance of the study:

Covid-19 is the most common cause of mortality and morbidity rate in all over the world, globally there are 113,488,702 cases infected with Covid-19 coronavirus including 2,519,093 deaths, In Middle East there are181,241 cases in Egypt, 18,999,046 cases in Kuwait, 688,698 cases in Iraq, 140,588 cases in Oman, 162,737   cases in Qatar and Saudi Arabia 376,723 cases. Covid19 is considered the cause of a dangerous illness that affects post-menopausal women's lives and, in many cases, threatens the lives of infected people. In addition, this virus presents an immediate danger to the functioning of communities across the world. Changes in the mode of education because attendance and interaction have shifted to online and distance learning and many other changes in people's lives (**Al Thobaity, & Alshammari.2020**)

The post-menopausal women are at a significantly higher risk of severe or fatal outcome of COVID-19. However, all age groups are at risk of contracting COVID-19, and seniors face a significant risk in developing a severe illness if they contract the disease due to physiological changes which come with aging and more frequently, underlying health conditions in this particular age group. Recent epidemiological data suggest 5.1 times higher risk of dying in symptomatic post-menopausal women aged 60 years and above, and overall, over 95% of these deaths occurred in those older than 60 years or not well-controlled (**Garg et al., 2020**).

The post-menopausal women infected with SARS-CoV-2 were prone to death when they develop severe pneumonia, pulmonary edema, or multiple organ failure (such as shock, acute heart injury, and acute kidney injury). The increasing number of deaths forces us to find out the clinical characteristics of the post-menopausal women at risk of dying, so that nurses can take corresponding rescue measures in the early stage to reduce the occurrence of death. (**Qiu, P ,et al.,2020**)

Aim of the study:

The aim of study was to assess maternity nurse's perception regarding Covid-19 among post-menopausal women.

Research questions:

What is the level of maternity nurse's knowledge regarding Covid-19 among post-menopausal women?

What is the level of maternity nurse's attitude toward Covid-19 among postmenopausal women?

Subject and methods

Study Design:

A descriptive research design was utilized to fulfill the aim of the study (60 nurses)

Study setting:

This study was conducted at the Obstetrics and   Gynecological department at Benha university hospital.

Sample type: A Convenient sample was used.

Sample size: All maternity nurses who work at the Obstetrics and gynecological Department.

Tools of data collection

Two tools were utilized for collecting data:

Tool I: A self-Administrated questionnaire sheet: it was constructed by researchers after reviewing related literature. It included the following two parts:

Part 1: Demographic data such as (age, educational level, residence, marital status,

years of experience, and attending training courses).

Part 2: Assessment of maternity nurses' knowledge regarding Covid-19 among postmenopausal women which included 24 (questions).

Scoring system:

Each item was assigned a score (0) for incorrect answer and score (1) for incomplete correct answer and score (2) for correct answer. The total knowledge score will be summed up a categorized as follows,

- Good knowledge. ($\geq$ 75% of total knowledge score)
- Average knowledge (60%<75% of total knowledge score)
- Poor knowledge. (<60% of total knowledge score)

Tool II: Modified Likert scale:It was adapted from **(Maina, et al ., 2022)** to assess attitude of maternal nurses about covid 19 among post-menopausal women which include 18 (questions).

Scoring system:

Attitude was scored as three points Likert scale the following score (2) for agree, score (1) for uncertain and score (0) for disagree. The total score will be summed up a categorized as follows,

- Negative attitude when total score <75%
- Positive attitude when total score $\geq$75%

Tools validity

The content validity of the tools was assessed by a panel of 3 jury experts in the field of Obstetrics and Gynecological Nursing at Benha University to ascertain clarity, relevance, comprehensiveness understanding and applicability of tools

Tools Reliability

Reliability was done by coronobach's Alpha Coefficient to assess the reliability of that indicated that each of the two tools which consisted of relatively homogenous items as indicated by the moderate to high reliability of each tool., The internal consistent of knowledge was equal 0.769 and attitude was equal 0.851.

Ethical considerations:

- Ethical aspects were considered before starting the study as the following:
- An official permission from the selected study settings was obtained for the fulfillment of the study.
- Approval of the faculty ethics committee for scientific research was obtained for the fulfillment of the study.
- An official permission from the selected study settings was obtained for the fulfillment of the study.
- The aim of the study was explained by researcher before applying the tools to gain nurse confidence and trust.
- The researcher took oral consent from nurses to participate in the study and confidentiality will be assured.
- The data was collected and treated confidentially.
- The study didn't lead to any physical, social, or psychological harm to the participant.

Pilot study:

The pilot study was conducted on 10% (6 nurses) of the total sample to test the content validity, clarity and applicability of tools as well as time needed for data collection. As there were no modifications carried out on the study tools as reviewed from the results of pilot study, the subjects were included in the study sample.

Field work:

The actual field work started from the beginning of June 2021 till the end of August, 2021 covering three months. The researcher visited the Obstetrics and Gynecological departments three days per week (Sunday, Tuesday, and Thursday) from 9AM to 1PM to collect data from maternity nurses. The researcher introduced herself, greeted nurses, explained the purpose of the study to each nurse to gain confidence and cooperation and an oral consent was taken to participate in the study. A self-Administrated questionnaire was distributed for nurses.to obtain nurse's demographic data and nursing knowledge regarding covid 19 among postmenopausal women. Average time for the completion of self-Administrated questionnaire sheet was ranged from (10-15 minutes)

Then the researcher distributed modified Likert scale to assess maternity nursing attitude of covid 19 among postmenopausal women by using three points Likert scale. Average time for the completion of maternity nursing attitude of covid19 questionnaire was ranged from (10-15 minutes).

Statistical analysis:

The collected data were organized, tabulated and analyzed by using electronic computer and statistical analysis was done by using Statistical Package for Social Sciences (SPSS, version 26). Characteristics of the studied nurses were presented in term of number and percentage. Mean and standard deviation for the quantitative variable. Chi-square test was used to study the comparison among demographic characteristics and total level of knowledge and total level of attitude and between total knowledge level and total attitude level.

Results:

Table (1): Shows that more than half (51.7%) of the studied nurses in age group(20<30years) with Mean ±SD= (30.70±6.71), less than half(43.3%) of them have bachelor of nursing degree and more than half (51.7%) of them were from rural area. Also, less than three quarters (73.3%) of the studied nurses are married and more than one third (35.0%) of them had experience ranged from 5<10 years with Mean ±SD= (11.74±5.12), and less than two thirds (63.3%) of them didn't attain any training courses.

Figure (1): Reveals that, more than half (58.3%) of the studied nurses have good level of knowledge, more than one third (35.0%) of them have average level of knowledge and only 6.7% of them have poor level of knowledge.

Figure (2): Shows that, more than three quarters (76.7%) of the studied nurses have positive level of attitude, while less than one quarter (23.3%) of them have negative level of attitude.

Table (2): Shows that there was a statistically significant correlation between the studied nurses' total knowledge scores and total attitude level (p=≤0.05*).

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Table (1): Distribution of studied nurses regarding demographic data (n=60)

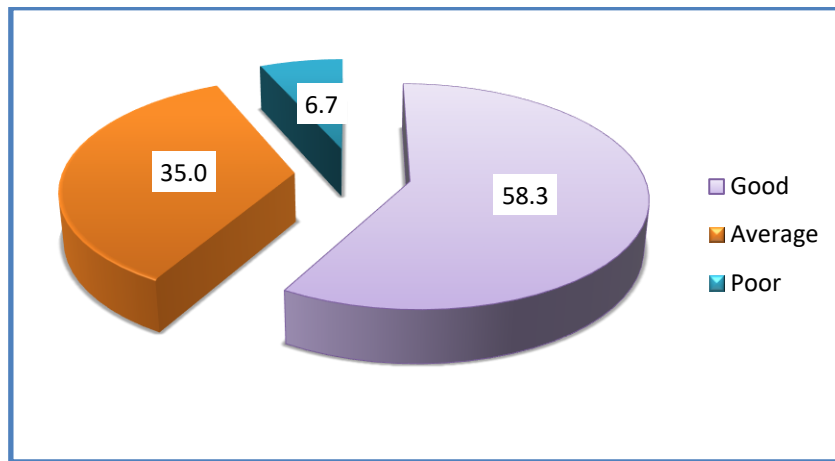| Demographic data	No	%
Age		
<20	3	5.0
20<30	31	**51.7**
30<40	22	36.7
≥ 40	4	6.7
Mean ±SD	**30.70±6.71**	
Education		
Nursing school	13	21.7
Technical institute of nursing	11	18.3
Bachelor of Nursing degree	26	**43.3**
Post graduate	10	16.7
Residence		
Rural	31	**51.7**
Urban	29	48.3
Marital status		
Single	13	21.7
Married	44	**73.3**
Divorced	3	5.0
Experience years		
<5	17	28.3
5<10	21	**35.0**
10<15	16	26.7
$\geq$15	6	10.0
Mean ±SD	**11.74±5.12**	
Training courses		
Yes	22	36.7
No	38	**63.3**

Figure (1): Percentage distribution of studied nurses regarding total knowledge level (n=60).
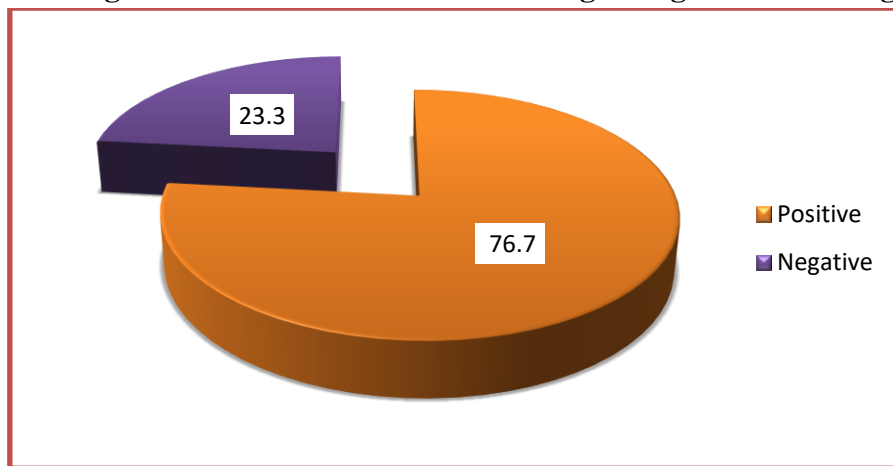

Figure (2): Percentage distribution of studied nurses regarding total attitude level (n=60).

Table (2): Correlation between total knowledge and total attitude among studied nurses regarding COVID-19(n=60).

Total attitude	Total knowledge	
	r	p-value
	0.681	0.002*

Discussion:

According to studied nurses' demographic data, the current study is showed that, more than half of the studied nurses in age group (20<30) years. This study was harmony with **Baquedano et al., (2021)**, who studied women's knowledge about the genitourinary syndrome of post menopause: adherence to its treatments in the COVID-19 era in a sample of them in Netherlands, and reported that, less than three fifths of participants' age was 21-30 years old.

Also the current study supported with **Belgen et al., (2020)**, who studied "Determination of exercise habits, physical activity level and anxiety level of postmenopausal women during COVID-19 pandemic in Brazil and noted that, nearly half of studied sample aged 20 to less than 30 years old.

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Regarding educational level and residence of studied nurses, the present study described that, less than half of studied nurses have Bachelor of Nursing degree and more than half of them were from rural area. From a researcher's point of view this might be due to low income that made nurses to work without complete education in nursing.

The present study was disagreed with **Costeira et al., (2021), who studied** "Estrogen and COVID-19 symptoms: associations in women from the COVID Symptom Study in Italy "and reported that, three quarters of participants have bachelor of nursing degree. This might be due to an interest in nursing and nurses' level of education.

Concerning marital status of studied nurses, the present study showed that less than three quarters of the studied nurses are married. The present study was agreed with **Coronado et al., (2021)** who studied "Health-related quality of life and resilience in peri-and postmenopausal women during COVID-19 confinement in Bortoghal"and reported that, three quarters of the studied nurses are married.

Also, the current study described that, more than one third of studied nurses had 5<10experience years, and less than two thirds of them didn't attain any training courses. In researcher point of view, this might be due to lack of educational program and offering training courses.

This study was the same opinion with **Haitao et al., (2020)**, who studied "COVID-19 and post menopause: mechanisms and biomarker, in India" and reported that, less than two fifths of studied nurses have experience 5-10 years and less than half of them didn't attain any educational courses.

In relation to studied nurses' total knowledge level, the present study revealed that, more than half of the studied nurses have good level of knowledge, more than one third of them have average level of knowledge and only few of them have poor level of knowledge.

The present study was supported with **Cagnacci&Xholli, (2021),** who studied "Change in Covid-19 infection and mortality rates in postmenopausal women in New York"and reported that, less than two thirds of the studied sample havegood level of knowledge, slightly more than one third of them have average level of knowledge.

Regarding studied nurses' total attitude level, the present study showed that, more than three quarters of the studied nurses have positive level of attitude, while less than one quarter of them have negative level of attitude. In researcher point of view this might be due to good knowledge had affect attitude of nurses

This study was supported with **Ashok & Paul, (2021)"**, who studied "A study to assess the prevalence of menopausal symptoms and effectiveness of structured teaching programmer on knowledge and attitude regarding menopausal symptoms in Pathanamthitta District" and its management among women at selected wards of Kadapra Grama Panchayat and noted that, This study showed that in about three quarters of the studies, respondents showed a positive attitude three quarters toward COVID-19, while in about one-quarter of the studies negative attitude one quarter against COVID-19was reported.

According to correlation between total knowledge and total attitude among studied nurses regarding COVID-19, the present study showed that, there was a statistically significant correlation between the studied nurses' total knowledge scores and total attitude level (p=≤0.05*)0.. This might be due to if the nurse's total knowledge increased their

total attitudes also increase and become better and efficient.

Also the present study was in harmony with **Stewart et al., (2021) who studied** "Long COVID risk-a signal to address sex hormones and post menopause women's health in Italy" and**,** reported that, there was a statistically significant correlation between the studied nurses' total knowledge scores and total attitude level.

Also the present study was supported with **Papadopoulos et al., (2021),** who studied "Why does COVID-19 kill more elderly men than post menopause women? Is there a role for testosterone? inIran"and noted that, The results of the Spearman correlation coefficient between knowledge and attitude about COVID-19 showed a significant positive relationship between the total knowledge and attitude scores (r = 0.23, p < 0.001).

Conclusions:

More than half of the studied nurses have good level of knowledge, while more than one third of them have average level of knowledge and less than one tenth of them have poor level of knowledge. Additionally, more than three quarters of the studied nurses have a positive level of attitude regarding COVID, while less than one quarter of them have negative level of attitude. Therefore, the study questions were answered.

Recommendations:

1-A simplified and comprehensive booklet should be available for all nurses regarding COVID 19 of post menopause women which include a clear, brief and simple explanation about preventive measures

2-Educational program for nurses to raise perception regarding covid 19 of post-menopausal women should be a priority to ensure early diagnosis of the disease.

References

ALThobaity, A., &Alshammari, F. (2020). Nurses on the frontline against the COVID-19 pandemic: an Integrative review. Dubai Medical Journal. 3(3). 87-92.

Ashok, A., & Paul, A. (2021). A study to assess the prevalence of menopausal symptoms and effectiveness of structured teaching program on knowledge and attitude regarding menopausal symptoms and its management among women at selected wards of Kadapra Grama Panchayat in Pathanamthitta District. International Journal of Nursing Education and Research. 9(3). 331-341

BaquedanoMainar, L., Sánchez Méndez, S., Dieste Pérez, P., Hernández Aragón, M., & Mendoza Ladrón de Guevara, N. (2021). Women's knowledge about the genitourinary syndrome of menopause: adherence to its treatments in the COVID-19 era in a sample of them: COMEM-GSM study. BMC Women's Health. 21(1). 1-6

BelgenKaygısız, B., GüçhanTopcu, Z., Meriç, A., Gözgen, H., &Çoban, F. (2020). Determination of exercise habits, physical activity level and anxiety level of postmenopausal women during COVID-19 pandemic. Health Care for Women International. 41(11-12). 1240-1254.

BelgenKaygısız, B., GüçhanTopcu, Z., Meriç, A., Gözgen, H., &Çoban, F. (2020). Determination of exercise habits, physical activity level and anxiety level of postmenopausal women during COVID-19 pandemic. Health Care for Women International. 41(11-12). 1240-1254.

Cagnacci, A., &Xholli, A. (2021). Change in Covid-19 infection and mortality rates in postmenopausal women. Menopause (New York, NY). 28(5). 573

Coronado, P. J., Fasero, M., Otero, B., Sanchez, S., De la Viuda, E., Ramirez-Polo, I.,&Baquedano, L. (2021). Health-related

quality of life and resilience in peri-and postmenopausal women during Covid-19 confinement. Maturitas, 144. 4-10

Costeira, R., Lee, K. A., Murray, B., Christiansen, C., Castillo-Fernandez, J., Ni Lochlainn, M., ...& Bell, J. T. (2021). Estrogen and COVID-19 symptoms: associations in women from the COVID Symptom Study. PLoS One. 16(9). e0257051

Garg, R., Agrawal, P., Gautam, A., Pursnani, N., Agarwal, M., Agarwal, A.,&Pandey, A. (2020). COVID-19 outcomes in postmenopausal and perimenopausal females: Is estrogen hormone attributing to gender differences?. Journal of mid-life health. 11(4). 250

Gersh, F., Lavie, J., & O'Keefe, H. (2021). Menopause Status and Coronavirus Disease 2019 (COVID-19). Clinical Infectious Diseases. 73(9). e2825-e2826

Haitao, T., Vermunt, J. V., Abeykoon, J., Ghamrawi, R., Gunaratne, M., Jayachandran, M., &Garovic, V. D. (2020). COVID-19 and post menopeuse: mechanisms and biomarkers. In Mayo Clinic Proceedings (Vol. 95, No. 10, pp. 2189-2203).

Hipólito, A., &Valadares, L. (2021). Menopause, cognition, hot flashes and COVID-19: is estrogen a fundamental piece in the puzzle?. Women & health, 61(5), 393-394

Liu, D., Ding, H. L., Chen, Y., Chen, D. H., Yang, C., Yang, L. M., ...& Xia, Z. (2021). Comparison of the clinical characteristics and mortalities of severe COVID-19 patients between pre-and post-menopause women and age-matched men. Aging (Albany NY), 13(18), 21903

Marchenkova, A., &Makarova, V. (2022). Characteristics of COVID-19 in peri-and postmenopausal women. Role of hormone replacement therapy. Voprosy Ginekologii, Akusherstvai Perinatologii, 85-90

Maina R, Kimani RW, Orwa J, Mutwiri BD, Nyariki CK, Shaibu S, Fleming V. (2022). Knowledge, Attitudes, and Preparedness for Managing Pregnant and Postpartum Women with COVID-19 Among Nurse-Midwives in Kenya. SAGE Open Nurs. oi: 10.1177/23779608221106445. PMID: 35769610; PMCID: PMC9234919.

Papadopoulos, V., Li, L., &Samplaski, M. (2021). Why does COVID-19 kill more elderly men than post menopause women? Is there a role for testosterone?. Andrology. 9(1). 65-72

Qiu, P., Zhou, Y., Wang, F., Wang, H., Zhang, M., Pan, X.,& Liu, J. (2020). Clinical characteristics, laboratory outcome characteristics, comorbidities, and complications of related COVID-19 deceased: a systematic review and meta-analysis. Aging clinical and experimental research, 32(9), 1869-1878.

Stewart, S., Newson, L., Briggs, T. A., Grammatopoulos, D., Young, L., & Gill, P. (2021). Long COVID risk-a signal to address sex hormones and post menopause women's health. The Lancet Regional Health–Europe, 11

Youn, Y., Zhang, Y., Wu, Y., Cannesson, M., &Cai, H. (2021). Therapeutic application of estrogen for COVID-19: Attenuation of SARS-CoV-2 spike protein and il-6 stimulated, ACE2-dependent NOX2 activation, ROS production and MCP-1 upregulation in endothelial cells especially in post menopause . Redox biology. 46. 102099

وعى ممرضات الامومة فيما يتعلق بـ كوفيد 19بين السيدات ما بعد سن الأياس

فاطمة رمزى حسن محمد- سعاد عبد السلام رمضان ـ سماح عبد الحليم سعيد-اميرة محمد سلامة

ان السيدات في ما بعد سن الأياس عرضة للإصابة بـكوفيد 19اكثرمن السيدات فى اعمار أخرى واكثر عرضة لارتفاع معدلات الاصابة بالمرض والوفيات.. كان الهدف من الدراسة هو تقييم وعى ممرضات الأمومة فيما يتعلق بـكوفيد 19 بين السيدات في ما بعد سن الأياس. تصميم البحث: تم استخدام تصميم البحث الوصفي لإجراء هذه الدراسة. وقد أجريت الدراسة بقسم أمراض النساء والتوليد بمستشفى جامعة بنها. تم استخدام عينة متاحة في هذه الدراسة. وأشارت نتائج الدراسة الحالية إلى أن أقل من ثلاثة أرباع من الممرضات الخاضعات للدراسة لديهن معرفة صحيحة فيما يتعلق بالوقاية من كوفيد 19، بينما الغالبية لديهن معرفة غير كاملة بشأن فترة الحضانة وتشخيص وظهور فيروس كوفيد 19 بالإضافة إلى أن غالبية الممرضات الخاضعات للدراسة يوافقن على عزل السيدات بعد سن الايأس المصابات بـكوفيد 19 ، وأكثر من نصفهن غير متأكدات من أن مرض كوفيد -19 بين السيدات بعد سن الايأس يؤدي إلى الوفاة في جميع الحالات وأكثر من ثلثهن يعارضون القدرة على تلقي لقاح كوفيد 19 مع مرض آخر. كما ان أكثر من نصف الممرضات المدروسات يتمتعن بمستوى جيد من المعرفة ، بينما أكثر من ثلثهن يتمتعن بمستوى متوسط من المعرفة. وأقل من عُشرهن لديهم مستوى ضعيف من المعرفة ، بالإضافة إلى أن أكثر من ثلاثة أرباع الممرضات الخاضعين للدراسة لديهن مستوى إيجابي من الاتجاهات تجاه فيروس كورونا المستجد ، بينما أقل من ربعهن لديهنمستوى سلبي من المواقف . كما أوصت الدراسة بعقد برنامج تعليمي للممرضات لرفعها يجب أن يكون التصور المتعلق بـكوفيد 19السيدات ما بعد سن الايأس أولوية لضمان التشخيص المبكر للمرض.