

Effect of Continuous Care Model on Quality of Life among Women with Preeclampsia

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Abstract

Background: Preeclampsia belongs to the spectrum of hypertensive disorders of pregnancy and if untreated leads to dangerous consequences for both the mother and the baby. **Aim:** The study aimed to evaluate effect of continuous care model on quality of life among women with preeclampsia. **Research design:** Quasi-experimental design (pre-posttest, one group) was utilized. **Setting:** The study was conducted at Obstetrics and Gynecological out-patient clinic at Benha University Hospital. **Sampling:** A purposive sample of 75 women with preeclampsia was recruited. **Tools of data collection:** Three tools were included 1) A self-administered questionnaire, 2) self-care reported practices questionnaire, 3) World Health Organization Quality of Life - BREF. **Results:** After implementation of the continuous care model, the total mean score for total quality of life of the studied sample was higher than the score before implementation with a highly statistically significant difference ($p \leq 0.001$) and there was a highly significant positive correlation between total self-care reported practices and total quality of life regarding preeclampsia at pre, immediately post and one-month post-intervention phases ($p \leq 0.001$). **Conclusion:** Continuous care model had a positive effect on self-care practices and quality of life among women with preeclampsia. **Recommendations:** Applying instructional package and counselling tips for women with pregnancy induced hypertension about discharge teaching plan to maintain healthy life style.

Keywords: Continuous Care Model, Quality of life, Preeclampsia.

Introduction:

Preeclampsia is characterized by a persistent high systolic/ diastolic blood pressure of $\geq 140/90$ mm Hg as well as proteinuria of ≥ 300 mg/ 24 h after 20 weeks of gestation in women with previously normal blood pressure (Nirupama et al., 2021). Preeclampsia is one of the most common pregnancy complications occurring in 3–5% of all pregnancies. Preeclampsia is well accepted as a main cause of maternal and perinatal morbidity and mortality, which is estimated to cause at least 42,000 maternal deaths annually worldwide (Yang et al., 2022).

Risk factors that predispose to preeclampsia are advanced age (older than 40 years), multiple pregnancies with twins, triplets, the first pregnancy, at age more than 35 years age, a long interval between two pregnancies of more than ten years, a new paternity with a long interval between two pregnancies and a family history of preeclampsia. In addition, ethnicity can affect the risk of preeclampsia because black women have a higher risk compared to other races (Quitterer & AbdAlla, 2021).

Preeclampsia may be classified as mild or severe, depending on the severity of the organ dysfunction. It is also categorized into two types: Early-onset preeclampsia (which occurs before 34 weeks of pregnancy) and late-onset preeclampsia (which occurs after 34 weeks of pregnancy). Early-onset or preterm preeclampsia is more often complicated by fetal growth restriction and more severe symptoms compared to late-onset or term preeclampsia (**Than et al., 2022**).

Self-care means the ability of individuals, families and communities to improve health, prevent diseases, maintain health, and adapt to illness and disability with or without the support of healthcare providers. Self-care practices increase woman awareness and satisfaction, increase participation in health care programs and reduce the possibility of hospitalization and related costs of women (**Ali et al., 2022**).

Quality of life is defined as comprehension of a person from her position in life, which is meaningful within culture and value of the place of residing and relates to her aims, expectations, criteria, and concerns. It is expressed that physical health, mental status, dependency, social relations, personal beliefs and person's connection with environment are effective in quality of life (**Machado et al., 2020**).

The continuous care model (CCM) introduces the client as a consistent and effective caregiver in the process of health. The main purpose of the CCM is to design and formulate a program that leads to acceptance and increases the insight and proper function of the patient for continuous self-care. Continuous care allows women to live more comfortably in social environment with the knowledge of preventive care which in turn increases their self-care and self-efficacy and consequently reduces the

readmission of women (**Kamalinezhad et al., 2021**).

Nurses play very important role in providing the pregnant women health education to maintain maternal and fetal health and to reduce maternal and fetal morbidity and mortality. Nursing health education is necessary to equip the pregnant women with knowledge, healthy practices and to enhance their QOL. In case of hospitalization, the nurse's role in the care of a woman with preeclampsia focuses on close monitoring of blood pressure and ongoing evaluation for signs of disease progression, fetal monitoring and psychosocial support (**Said et al., 2021**).

Significance of the study:

Incidence of preeclampsia and women's lifetime risk of dying by preeclampsia has been seven times and 14 times higher in developing countries respectively and 16% of maternal death was by direct cause of preeclampsia/eclampsia. The prevalence of preeclampsia ranges between 1.8 and 16.7% in developing countries (**Mou et al., 2021**). In Africa, the prevalence of pre-eclampsia amongst pregnant women greatly varies between 1.8 to 16.7% (**Namugongo et al., 2022**). The prevalence of hypertensive diseases of pregnancy in Egypt, (4.2%) had pregnancy induced hypertension, (3.8 %) had preeclampsia and 0.3% had eclampsia (**Soliman et al., 2021**). Furthermore, limited previous studies were conducted to equip preeclamptic women with adequate knowledge to improve their self-care practices and quality of life and no previous studies had examined the effect of a continuous care model on preeclampsia women's self-care and quality of life. So, this study would be conducted to evaluate effect of application of continuous care model on preeclamptic women self-care and QOL.

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Aim of the Study:

This study was aimed to evaluate effect of continuous care model on quality of life among women with preeclampsia.

Research Hypotheses:

H1: There would be a significant improvement in self-care reported practices among preeclamptic women after implementation of continuous care model than before.

H2: There would be a significant improvement in quality of life among preeclamptic women after implementation of continuous care model than before.

Subjects & Methods

Research design:

Quasi-experimental design (pre-posttest, one group) was followed to fulfill the aim of the study.

Setting:

The study was conducted at Obstetrics and Gynecological out-patient clinic at Benha University hospital in Benha city.

Sampling:

A purposive sample of 75 women were included in the study. The sample size was calculated according to Benha University Hospital Statistical Census Center (2020). As the flow of rate of preeclamptic women was about 150 preeclamptic women. Then, 50% of total sample were selected according to the following inclusion and exclusion criteria. Inclusion criteria: All women diagnosed with mild preeclampsia (systolic blood pressure < 160 mmHg and diastolic blood pressure < 110 mmHg with proteinuria \pm 2 in urine test strip), gestational age 20 to 24 weeks and can read and write. Exclusion criteria: Women with

obstetrical complications as gestational diabetes and eclampsia, history of hypertension, Women with psychiatric disorders affect pregnancy perception of QoL and attendance and reluctance to continue cooperation.

Tools of data collection:

Three tools were used in this study:

Tool (I): Self-administered questionnaire:

It was designed by the researcher after reviewing related literature (El Sayed & Desoky, 2019; Mou et al., 2021). It was written in an Arabic language in the form of close ended questions. The questionnaire included two parts:

First Part: General characteristics it included (age, residence, level of education, occupation and monthly income).

Second Part Previous and current obstetric history included data related to the gravidity, parity, number of abortions, number of antenatal care visits during the current pregnancy and gestational age.

Tool II: Self-care reported practices questionnaire: It was designed by the researcher after reviewing related literature (Fondjo et al., 2019) to assess self-care reported practices of women to control and manage preeclampsia. It comprised {11 items} namely as measuring blood pressure daily, checking and recording weight daily, checking urine for proteinuria by dipstick daily, consuming the recommended diet (high protein, low salts and low fat), drinking 8 to 10 glasses of water daily, participating in regular physical activity, compliance with prescribed medications, taking rest and adequate sleep, managing and coping with stress through relaxation exercises, counting fetal kicks daily and compliance with recommended antenatal visits). **Scoring**

system of self-care reported practices: The items were rated based on three-point Likert scale; always (score 3), sometimes (score 2), and never (score 1). The range of obtained scores was between 11 and 33, with higher scores indicating more engagement in healthy behaviors. **The score of total practices was converted into percentage and classified into:-**

-Satisfactory when the total score was 75% to 100%.

-Unsatisfactory when the total score was less than 75%.

Tool III: World Health Organization Quality of Life - BREF (WHOQOL-BREF): The WHOQOL-BREF was adapted from (World Health Organization, 1996) and translated into Arabic language to assess the perception of the quality of life among women with preeclampsia in the previous two weeks. It consisted of {26 items} in four domains: Physical health (7 items), psychological (6 items), social relationships (3 items) and environment (8 items) as well as (2 items) on overall QOL and general health.

Scoring system of WHOQOL-BREF:

On a five-point Likert scale ranging from 1 to 5, each item of WHOQOL-BREF was scored (1 for the lowest, and 5 for the highest agreements with the item). The domain score was calculated using items scores within each domain. The mean score of each item was calculated. Higher scores reflect a better quality of life.

The score of total QOL was converted into percentage and classified into:

- High when the total score was $> 75 \%$
- Low when the total score was $\leq 75 \%$

Content validity:

Tools of data collection were reviewed by three jury experts in the field of obstetrics &

gynecological nursing at Benha University to ensure its validity for comprehensiveness, accuracy and relevance. Modifications were done in the light of the valuable comments such as modifying some phrases which were unclear. For example, methods of diagnosis instead of diagnosis and rearrangement of some questions

Reliability of the tools:

Reliability was done by Cronbach's alpha coefficient test which revealed that each tool consisted of relatively homogenous items as indicated by moderate to high reliability of tools. The internal consistency of self-care practices was 0.89, WHOQOL-BREF internal consistency ranged from 0.66 to 0.84 for the four domains, and from 0.86 to 0.91 for the total score (**WHOQOL Group, 1998**).

Ethical considerations:

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 and importance of this study was explained by the researcher to each pregnant women before applying the tools to gain their confidence and trust. The researcher took oral consent from women to participate in the study before data collection. The study didn't have any physical, social or psychological risks on the women. The women were free to withdraw from study at any time.

Administrative approval:

A written official approval to conduct the study was obtained from the Dean of Faculty of Nursing to the director of Benha University Hospital and delivered to the director of the nursing explaining aim of the study in order to obtain the agreement to conduct the study and seek cooperation.

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Pilot study:

The pilot study was conducted on 10 % of the total sample (8 women) before starting data collection to estimate the time required for completing the sheets and to check the simplicity, clarity, applicability and feasibility of the developed tools. No modifications were done. Thus, women involved in the pilot study were included in the study sample.

Field work:

The study was conducted through continuous care model phases. At first, the continuous care was implemented in four stages: Orientation, sensitization, control, and evaluation. Study was carried out from the beginning of February 2022 and completed at the end of March, 2023 covering 13 months. The researcher visited the previously mentioned setting three days/week (Sundays, Tuesdays, and Thursdays) from 9.00 Am to 12.00 Pm.

Orientation stage: -This stage was the first step in which the researcher introduced herself, illustrated the study aim and expectations, explained the various stages of the model to the participant women, generated motivation and emphasized the value of continuing care contact between the researcher and the studied women, clarified the ways of communication and established the required phone calls schedules until the end of the intervention. At this stage, the researcher took oral consent from women to participate in the study. Data was collected by the researcher through the distribution of a self-administered questionnaire, self-care practices questionnaire and quality of life questionnaire. The number of women were interviewed women per week was 4-5 women. The average time taken for completing each sheet was around 30-45 minutes depending on the response of the women. Each woman was reassured that

obtained information would be confidential and used only for the purpose of the study.

Sensitization stage: This stage was carried out to engage and apply continuous care process to the women with preeclampsia. Women were divided into 10 groups. The average number of women in each group (7-8 women). Each group attended four educational sessions (two sessions weekly). The actual time of each session was (45-60) minutes. These sessions were applied in the waiting area of Obstetrics and Gynecological outpatient clinic at Benha University Hospital. The researcher was prepared appropriate separate place for the participant women in the study to maintain privacy, trust and confidently. At the beginning of the first session the women were oriented with the program contents. Each woman was informed about the time of the next sessions at the end of session. The subsequent session started with feedback about the previous session and the objectives of the new session by using simple Arabic language to suit women's level of understanding. Various educational methods (group discussion, role-playing, demonstration and re-demonstration) and materials (power point presentation, a designed booklet) were used. At the end of each session the researcher gave five minutes to participant women for asking any questions for correcting any misunderstanding.

First session: At the beginning of the first session the researcher gave women the educational booklet and introduced an orientation of the educational booklet including the general and specific objectives by using Arabic language. Then the researcher started by providing women knowledge about preeclampsia including definition, risk factors, causes, classifications, maternal and fetal complications, preventive and therapeutic measures of preeclampsia.

Second session: The researcher educated women about the importance of participating

in self-care practices to control and manage preeclampsia including the importance and procedure of measuring and recording blood pressure on a regular basis and teaching women how to check proteinuria with dipstick as well as the importance and procedure of counting and recording fetal movements daily.

Third session: The researcher demonstrated procedure of measuring and recording weight daily and discussed the importance of maintaining healthy weight, obtaining balanced diet with high protein, low salt, low fat and drinking plenty of water daily. Also, importance of stress reduction and techniques (relaxation exercise) to overcome stress caused by pre-eclampsia and performing regular physical activity (deep breathing and stretching exercises).

Fourth session: The researcher explained the importance of commitment to recommended antenatal visits, the importance of getting adequate rest, maintaining sleep quality and the importance of compliance with prescribed medications.

Control stage : During this stage, the researcher maintained mutual relationships with studied women through weekly phone calls for each woman (4 calls) throughout one month, according to the women's preferred time for making phone calls (morning or afternoon). Each woman's weekly phone call lasted approximately 10-15 minutes and varied depending on a woman's educational needs and questions to help women strengthen and promote healthy self-care practices. Also, any new educational needs or health problems were recognized, processed and dissolved.

Evaluation stage: Immediately and one month of implementation of continuous care model, the researcher used the same previous assessment tools (II and III) to evaluate the effect of continuous care model on self-care

and quality of life among women with preeclampsia.

Statistical analysis:

Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 21) was used followed by data tabulation and analysis. Descriptive statistics were applied (e.g., mean, standard deviation, frequency and percentages). Chi-square test, ANOVA and Pearson correlation coefficients were used. A significant level value was considered when $p \leq 0.05$. And a highly significant level value was considered when $p < 0.001$.

Results:

Table (1): Shows general characteristics of the studied sample. It was cleared that less than two-thirds (62.7%) of studied sample were in age group < 30 years with a mean age of 23.02 ± 7.57 years. As regards the residence, less than three-quarters (70.7%) of them lived in rural areas. Furthermore, more than two-thirds of them (68.0%) were housewives. In relation to the educational level, less than half (46.7%) of them had secondary education. Moreover, less than three-quarters (72.0%) of them had not enough monthly income.

Table (2): Illustrates that less than three-quarters (72.0%) of the studied sample were primigravida and nulliparous. The mean gestational age of them was (21.94 ± 4.72) weeks. Additionally, the majority (94.7%) of them had no history of abortion. Concerning the number of antenatal care visits during the current pregnancy, more than half (50.7%) of the studied sample visited antenatal clinic three times or more /month.

Figure (1): Displays that, there was a marked improvement in total self-care reported practices after implementation of continuous care model (25.3%), (66.7%) and (65.3%) of studied sample had satisfactory level of self-care reported practices regarding

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preeclampsia at pre, immediately and one month post-intervention phases respectively. While, it was revealed that (74.7%), (33.3%) and (34.7%) of them had unsatisfactory level of self-care reported practices regarding preeclampsia at pre, immediately post and one month post-intervention phases respectively.

Table (3): Elaborates that, after implementation of the continuous care model, the total mean score for total quality of life of the studied sample was higher than the score before implementation with a highly statistically significant difference ($p \leq 0.001$) among pre, immediately post and one month post-intervention phases. Such significant differences also existed in all domains of quality of life, including physical health, psychological, social relationships, and

environment, as well as two items concerning the overall quality of life and general health ($p \leq 0.001$).

Figure (2): Displays that, (41.3%), (65.3%) and (64.0%) of studied sample had high QOL at pre, immediately post and one month post-intervention phases respectively. While, it was revealed that (58.7%), (34.7%) and (36.0%) of them had low QOL at pre, immediately post and one month post-intervention phases respectively.

Table (4): Clarifies that; there was a highly significant statistical positive correlation between total self-care reported practices and total QOL regarding preeclampsia at pre-intervention and post-intervention phase ($P \leq 0.001$).

Table (1): Distribution of the studied sample according to general characteristics (n=75).

General characteristics	No	%
Age:		
< 30	47	62.7
≥ 30	28	37.3
Mean ± SD = 23.02±7.57		
Residence:		
Rural	53	70.7
Urban	22	29.3
Level of education:		
Primary education	14	18.6
Secondary education	35	46.7
University education	26	34.7
Occupation:		
Housewife	51	68.0
Employed	24	32.0
Monthly income:		
Enough	21	28.0
Not enough	54	72.0

Table (2): Distribution of the studied sample regarding previous and current obstetric history (n=75).

Obstetric history	No	%
Current gestational age in weeks:		
Mean \pm SD = 21.94 \pm 4.72		
Gravida:		
Primigravida	54	72.0
Multigravida	21	28.0
Parity:		
Nulliparous	54	72.0
Primipara	9	12.0
Multipara	12	16.0
Previous abortions:		
Yes	4	5.3
No	71	94.7
Number of ante natal care visits during the current pregnancy:		
Once/month	16	21.3
Two times/month	21	28.0
Three or more times/month	38	50.7



Figure (1): Percentage distribution of studied sample regarding total self-care reported practices about regarding preeclampsia at pre, immediately post and one month post-intervention phases (n=75).

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Table (3): Total mean cores of quality-of-life domains of studied sample at pre, immediately and one month post-intervention phases (n=75).

Quality of life domains	Maximum score	Pre-intervention	Immediately post-intervention	One month post-intervention	ANOVA	
		Mean ± SD	Mean ± SD	Mean ± SD	F	p-value
Physical health	35	15.61±3.66	24.40±4.75	23.24± 2.86	115.89	0.000**
Psychological health	30	14.26±1.94	20.06±3.94	19.05±2.49	84.40	0.000**
Social relationships	15	8.18±1.90	10.41±1.53	10.14±1.53	39.89	0.000**
Environmental health	40	17.78±2.99	25.82±3.91	24.666±3.56	144.76	0.000**
Overall quality of life and general health	10	5.17±1.53	7.41±1.37	6.81±1.56	45.10	0.000**
Total score	130	61.02±5.13	88.12±9.88	83.92±6.50	287.65	0.000**

**A Highly Statistical significant $p \leq 0.001$

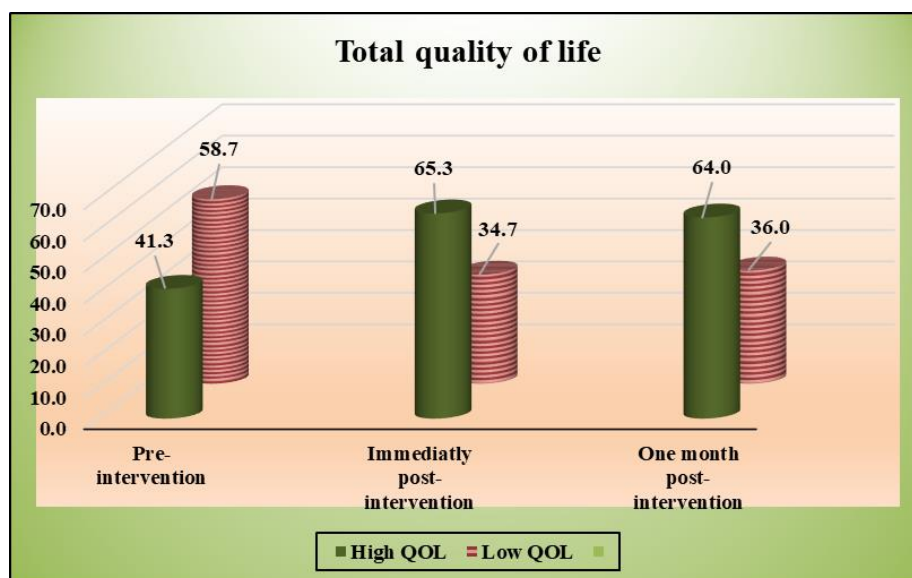


Figure (2): Percentage distribution of studied sample regarding total QOL score at pre, immediately and one-month post-intervention phases (n=75).

Table (4): Correlation between total self-care reported practices and total QOL scores of the studied sample regarding preeclampsia at pre, immediately and one month post-intervention phases (n=75).

Variables	Total self-care reported practices					
	Pre-intervention		Immediately post-intervention		One month post-intervention	
	r	P-value	r	P-value	r	P-value
Total QOL	0.694	0.000**	0.971	0.001**	0.971	0.000**

**A Highly Statistical significant $p \leq 0.001$

Discussion

Preeclampsia (PE) is a multiorgan disorder which presents as a well-recognized clinical syndrome characterized by predominantly cardiovascular manifestations attributable to systemic inflammation, endothelial dysfunction, and generalized vasoconstriction resulting in hypertension and multiorgan hypoperfusion (**Melchiorre et al., 2021**).

Continuous care model is designed to identify educational needs and health problems, sensitize clients to accept ongoing health behaviors and help maintain and promote their health and well-being which designed and evaluated by Ahmadi in 2001 for patients with chronic coronary artery disease, it has an impact on the quality of life of these patients. The model consists of four stages of orientation, sensitization, control and evaluation (**Pourhossein et al., 2021**).

As regards general characteristics of women, The result of the present study showed that less than two-thirds of studied sample were in age group < 30 years with a mean age of 23.02 ± 7.57 years. As regards the residence, less than three-quarters of them lived in rural areas. Furthermore, more than two-thirds of them were housewives. In relation to the educational level, less than half of them had secondary education. Moreover, less than three-quarters of them did not have enough monthly income.

Results of the current study could positively effect on the women's acquired information because young women age had an opportunity to interact with the researcher and were acquired more information. Being the highest percentage of women living in rural area and being housewives, this result could explain the low level of women's knowledge because the women don't have the

opportunity to acquire knowledge about preeclampsia. From the researcher's point of view, educational level might affect the level of information where knowledge would be improved resulting in well understanding and applying the program well.

This result was supported with **Ali et al, (2021)** who studied "Effect of an Educational Program on Modifying Lifestyle among Pregnant Women with Mild Preeclampsia, Dakahlia, Egypt" found that the mean age was (29.85 ± 6.99), three-quarters of them were housewives, more than half of them had secondary education.

This result was nearly similar to **El Sayed & Desoky, (2019)** who studied "Effect of lifestyle alteration of pregnant women with mild preeclampsia on maternal and fetal Status, Zagazig, Egypt" showed that half of pregnant women with preeclampsia had a secondary education, did not have enough income. As well as majority of them were housewives from rural areas.

Pertaining to **previous and current obstetric history**, the result of current study illustrated that less than three-quarters of the studied sample were primigravida and nulliparous. The mean gestational age of them was (21.94 ± 4.72) weeks. Additionally, the majority of them had no history of abortion. Concerning the number of antenatal care visits during the current pregnancy, more than half of the studied sample visited antenatal clinic three times or more /month.

This result was in accordance with **Logan et al., (2020)** demonstrated that nulliparous mothers were 4.8 times more likely to suffer from preeclampsia/eclampsia than multiparous mothers (OR=4.8, 95% CI=1.0-22.4, p=0.045) whereas primiparous mothers were 1.4 times more likely to develop

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preeclampsia/eclampsia than those that were multiparous (OR=1.4, 95% CI=0.9-2.3, $p=0.187$) and women who had fewer than four antenatal care visits were 1.8 times more likely to have preeclampsia.

The results of current study were supported by **Mekie et al., (2020)** who studied "Cohabitation duration, obstetric, behavioral and nutritional factors predict preeclampsia among nulliparous women in West Amhara Zones of Ethiopia: Age matched case control study, Ethiopia" showed that developing PE were found to be 2.13 times higher among nulliparous women (AOR = 2.13, 95% CI (1.10, 4.11). Moreover, women who had frequent ANC visits had a low risk of experiencing PE compared with their counterparts (COR = 0.51, 95% CI (0.29, 0.92).

In relation to total self-care reported practices score, the current study findings clarified that, there was a marked improvement in total self-care reported practices after implementation of continuous care model (more than one quarter and more than two thirds) of studied sample had satisfactory level of self-care reported practices regarding preeclampsia at pre, 4 weeks and 2 months post-intervention phases respectively. While, it was revealed that (less than three quarters, one third and more than one third) of them had unsatisfactory level of self-care reported practices regarding preeclampsia at pre, immediately and one month post-intervention phases respectively. This may be due to the continuing sensitization process that motivated, encouraged and empowered these women to adhere to self-care practices to control and reduce the complications of preeclampsia. In addition, the effect of regular attendance at sessions followed by weekly follow-up care organized by phone calls. This reflected the importance and effectiveness of introducing

educational sessions through application of continuous care model that commonly associated with improving self-care practices.

The results of current study were in the same line with **Afey & Kamel, (2019)** illustrated that there were statistically significant differences in mean self-care practice score ($f=248.9$, $p<, 0.001$). There were significant changes from the pre-intervention scores with a mean of 20.97 ± 2.25 , and post-intervention scores with a mean of 23.88 ± 3.02 and 4 weeks follow up with a mean of 23.59 ± 3.29 . Additionally, there were statistically significant differences in all items of self-care practice of preeclampsia throughout the study ($p<0.000$). the majority of women (82%) had inadequate self-care practice level before intervention, while after intervention this level of practice were changed as 93% and 89% had adequate self-care practice post intervention and 4 weeks follow up respectively with a statistical significance difference (<0.000).

This result was supported by **Rasouli et al., (2019)** who studied "Effect of self-care before and during pregnancy to prevention and control preeclampsia in high-risk women, Iran" indicated that making lifestyle changes, having a healthy diet, learning stress management, performing exercise and physical activities, taking antioxidants, dietary supplements and calcium and adherence to aspirin and heparin regimens are recommended for monitoring and preventing preeclampsia.

Pertaining to QOL, the total mean score for total quality of life of the sample was higher than the score before implementation with a highly statistically significant difference at pre, immediately and one month post-intervention phases. Such significant differences also existed in all domains of quality of life, including physical health, psychological health, social

relationships and environment health, as well as two items concerning the overall quality of life and general health. This may be attributed to the effective implementation of CCM that assisted in recognizing the preeclampsia women's problems and needs and providing relevant knowledge and skills, which consequently helps in promoting self-care reported practices to monitor and prevent complications of preeclampsia and ultimately improve the quality of life. Furthermore, at pre, immediately and one month post-intervention phases showed that, (less than two fifth and less than two third) of studied sample had high QOL at pre, immediately and one month post-intervention phases respectively. While, it was revealed that (more than half and more than one third) of them had low QOL at pre, immediately and one month post-intervention phases respectively

This result was supported by **El Sayed et al., (2020)** who studied "Effect of Implementing Continuous Care Model on Health-Related Behaviors and Quality of Life among Women with Preeclampsia, Egypt" stated that before implementation of the continuous care model, the mean scores of total quality of life showed the impaired quality of life in the study and control groups (56.35 ± 3.27 and 55.89 ± 3.65) respectively, with no statistically significant difference ($p > 0.05$). However, after implementation of the continuous care model, the mean difference score for total quality of life in the study group was higher than the score in the control group (76.13 ± 8.36 versus 56.68 ± 3.92) respectively with a highly statistically significant difference ($p \leq 0.001$).

These findings were in agreement with **Machado et al., (2020)** who conducted a study under a title "Multi professional care promotes of quality of life in pregnant women with preeclampsia: a cross-sectional study,

Preto" showed that worse quality of life among women with preeclampsia but when women received multi professional and specialized care may reflect on good quality of life.

The results of current study matched with **Ahmadinejad et al., (2022)** who conducted a study under a title " The Impact of Self-Care Counseling on Quality of Life in Pregnant Women with Gestational Hypertension" reported that There was no significant difference in the mean quality of life score in the intervention and control group ($47/33 \pm 5/65$ vs $49/77 \pm 5/55$) before intervention. However, after the intervention, there was a significant difference between the two groups ($p < 0/001$). The mean score of quality of life in the intervention group was $76/07 \pm 5/01$ and in the control group was $48/73 \pm 6/75$.

The Continuous Care Model (CCM) aims to establish an effective, interactive, and consistent relationship between the client and the nurse as a provider of healthcare services to evaluate the clients' needs and health problems and sensitize them to accept their continuous health behaviors and help maintain their recovery process and health promotion, which is compatible with the characteristics of chronic diseases and the dynamics of their problems (**Kazemi et al., 2022**). there were other studies confirm that continuous care model was very effective in improving quality of life in other diseases such as **Rezamand et al., (2021)** who studied "The effect of continuous care model implementation on the quality of life of patients with heart failure: A randomized controlled trial, Iran" reported that after the implementation of continuous care model, the mean score of QoL of the experimental group was significantly higher than that of the control group.

Moreover, the result of current study was consisted with **Razmjoe et al., (2017)** who

studied "Does a continuous care model affect the quality of life of patients undergoing coronary artery bypass grafting, Iran" demonstrated that one and 2 months after application of the continuous care model, the scores of quality of life and its two dimensions were significantly higher in the intervention group than in the control group ($P < .001$).

Concerning correlation coefficient between total self-care reported practices & total QOL scores of the studied sample at pre, immediately and one month post-intervention phases. the result of current study demonstrated that there was a highly significant statistical positive correlation between total self-care reported practices and total QOL regarding preeclampsia at pre-intervention and post-intervention phase. This result was congruent with **El Sayed et al., (2020)** reported a significant positive correlation between total scores of health-related behaviors regarding preeclampsia and quality of life in both groups before and after implementation of continuous care model ($p \leq 0.001$).

Conclusion:

Application of continuous care model had a positive effect on self-care practices and quality of life among women with preeclampsia. There was a marked improvement in self-care practices and quality of life of studied sample regarding preeclampsia after implementation of the continuous care model with a highly statistically significant difference at pre, immediately and one month post-intervention phases. Moreover, there was a highly significant statistical positive correlation between total self-care practices and quality of life regarding preeclampsia at pre-intervention and post-intervention phases. Therefore, the study aim was achieved, and study hypotheses were supported.

Recommendations:

- Applying instructional package and counselling tips for women with pregnancy induced hypertension about discharge teaching plan to maintain healthy life style.
- Encouraging regular follow up and early detection of warning signs during pregnancy induced hypertension and management of preeclampsia.

Recommendations for further studies:

- The nursing intervention guided by continuous care model regarding preeclampsia prevention should be integrated with antenatal care for pregnant women.

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تأثير تطبيق نموذج الرعاية المستمرة على جودة الحياة للسيدات اللاتي تعانين من تسمم الحمل

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ينتمي تسمم الحمل إلى مجموعة اضطرابات ارتفاع ضغط الدم أثناء الحمل، وإذا لم يتم علاجها فإنها تؤدي إلى عواقب وخيمة على كل من الأم والطفل. لذا هدفت هذه الدراسة إلى تقييم تأثير تطبيق نموذج الرعاية المستمرة على جودة الحياة للسيدات اللاتي تعانين من تسمم الحمل. و تم استخدام تصميم شبه تجريبي. حيث أجريت الدراسة في العيادة الخارجية لأمراض النساء والولادة بمستشفى جامعة بنها على عينة هادفة من ٧٥ امرأة تسمم الحمل. وأظهرت نتيجة الدراسة الحالية بعد تطبيق نموذج الرعاية المستمرة أن متوسط الدرجة الكلية لجودة الحياة الكلية للعيينة المدروسة أعلى من الدرجة قبل التنفيذ مع وجود فرق ذو دلالة إحصائية عالية وكان هناك علاقة إيجابية ذات دلالة إحصائية عالية بين إجمالي ممارسات الرعاية الذاتية المبلغ عنها ونوعية الحياة الكاملة فيما يتعلق بتسمم الحمل في مرحلتي ما قبل التدخل ومباشرة بعد التدخل وبعد شهر من التدخل على التوالي. كما لخصت الدراسة بتطبيق نموذج الرعاية المستمرة كان له تأثير إيجابي على ممارسات الرعاية الذاتية ونوعية الحياة بين النساء اللاتي تعانين من تسمم الحمل، لذلك تم دعم فرضيات الدراسة. واوصت الدراسة بتنفيذ برنامج التثقيف الصحي المستمر للنساء الحوامل فيما يتعلق بتسمم الحمل يمكن أن يساعد في توفير الدعم المستمر والكشف المبكر عن تسمم الحمل أثناء الحمل.