

Effect of an Educational Program on Modifying Lifestyle among Pregnant Women with Mild Preeclampsia

Sally Ebrahim Rashad Ali^{1*}, Ragaa Ali Mohamed Abdraboo², Inaam Hassan Abdelati³, Nagat Salah Shalaby⁴

¹MSN, RN, Manzala General Hospital, Dakahlia, Egypt

²Professor of Maternal & Newborn Health Nursing, Faculty of Nursing, October 6 University, Egypt

³Assistant Professor of Maternity, Obstetrics, and Gynecology, Faculty of Nursing, Port-Said University, Egypt

⁴Assistant Professor of Maternity, Obstetrics, and Gynecology, Faculty of Nursing, Port-Said University, Egypt

DOI: [10.36348/sijog.2021.v04i08.003](https://doi.org/10.36348/sijog.2021.v04i08.003)

Received: 13.07.2021 | Accepted: 17.08.2021 | Published: 20.08.2021

*Corresponding author: Sally Ebrahim Rashad Ali

Abstract

Background: Preeclampsia is a life-threatening condition, which carries adverse effects for women and fetus. Lifestyle modification can modify the preeclampsia and improve its outcomes. Educational programs are an effective method to modify the lifestyle among pregnant women with mild preeclampsia. **Methods:** Aim of the current study was to evaluate the effect of an educational program on modifying lifestyle among pregnant women with mild preeclampsia. A pre and post research design was utilized on a purposive sample of 40 pregnant women at 20 – 24 weeks of gestation with mild preeclampsia at the antenatal outpatient unit, Port Said Maternity Hospital, Egypt; they get information regarding the proper lifestyle for mild preeclampsia and the lifestyle dimensions were assessed at the pre- program and post-program phases. Two tools were used for data collection: Interviewing Questionnaire Sheet and Lifestyle Questionnaire. **Results:** The findings showed a statistically significant improvement in the lifestyle after conducting the educational session. **Conclusion:** Educational programs about the proper lifestyle for mild preeclampsia through a PowerPoint presentation and distribution of the booklet are an effective method to modify the lifestyle among pregnant women with mild preeclampsia.

Keywords: Educational Program, Lifestyle Modification, Lifestyle Guidelines, Mild Preeclampsia, Pregnant Women.

Copyright © 2021 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Preeclampsia (PE) is a hypertensive disorder induced by pregnancy, it is characterized by high level of blood pressure (BP) (systolic blood pressure (SBP) is equal or more than 140 mm Hg, and/or diastolic blood pressure (DBP) is equal or more than 90 mm Hg), in a previously normotensive women, in the absence of proteinuria or proteinuria +1, and edema at 20-24 weeks of gestation (Norwitz *et al.*, 2020; Magloire *et al.*, 2015). Preeclampsia carries various complications for mother and fetus (Arulkumaran *et al.*, 2013; Carson *et al.*, 2015).

Lifestyle is the way of living among individuals, families, and communities, including diet, physical activities, and coping with stress (Saffari *et al.*, 2013). A healthy lifestyle can control PE in combination with pharmacological therapies (Mayo Foundation for Medical Education and Research, 2015).

Use of booklets facilitates the continuation of effective education as the guidelines become easier to be comprehended and adapted from the booklet and used in everyday life (Normayanti *et al.*, 2020).

Preeclampsia is a life-threatening condition during pregnancy; it need a specific nursing intervention (Onuigwe *et al.*, 2016). Nursing counseling sessions for pregnant women with PE have an important role to enrich them with knowledge about the proper lifestyle modifications for their condition to control the hypertension (HTN) and reduce its complications to mother and fetus. Hence, the current study through the light on the effect of an educational program on modifying lifestyle among pregnant women with mild PE.

MATERIAL AND METHOD

Aim of the study

The aim of the current study was to evaluate the effect of an educational program on modifying lifestyle among pregnant women with mild preeclampsia.

Research Hypothesis

Pregnant women with mild preeclampsia who get information regarding the proper lifestyle will modify their lifestyle.

Research Design

A pre and post assessment research design was utilized in the current study.

Study Setting

This study was conducted at the antenatal outpatient unit, Port Said Maternity Hospital, Egypt.

Study Population and Sample:

The study sample included a purposive sample of 40 pregnant women at 20 – 24 weeks of gestation with mild PE.

Tools of Data Collection:**Tool (1): Structured Interviewing Sheet**

It contains two parts: the first part deals with personal data such as age, occupation, educational level, and marital status, while the second part includes the obstetrical history such as gravidity, parity, history of abortion and preterm deliveries, and inter-pregnancy intervals.

Tool (2): Lifestyle Questionnaire.

The questionnaire assesses four dimensions of lifestyle: Nutrition: it contains 11 items, 3 answers for each item, always (score 3), sometimes (score 2), and never (score 1), the highest score is 33, while the lowest score is 11. Physical exercise: it includes 3 questions about practicing physical exercise, duration per minutes, and frequency per week. Sleep habits: it contains one question about the hours of sleep (8 hours per night and 2 hours nap per daytime), and 3 answers (always, sometimes, and never). Stress: it includes 2 questions about the exposure to daily stressful situations and their ability to relieve the stress. Smoking: it contains 3 items, 2 answers for each item as yes (score 2), and no (score 1), the highest score is 6, while the lowest score is 3.

Pilot Study

A pilot study was conducted on 10.0% of the total sample to test the clarity, feasibility, and applicability of the tool. The sample of the pilot study were excluded from the main study sample.

Validity and Reliability of Tool

The tool was reviewed by a jury composed of five experts in the field of Maternity & Newborn Nursing and Community Nursing to test the clarity and

applicability of the tools. Reliability was tested by Cronbach's Alpha test to test the reliability of the tools. Cronbach's Alpha test was equal (0.843).

Field of Work

Guidelines of lifestyle modification for pregnant women with mild PE were prepared after reviewing the literatures to enrich them with knowledge about preeclampsia (follow up, measures to relieve signs and symptoms of mild PE, and dangerous signs of PE) and the proper lifestyle for mild PE (nutrition, physical exercise, sleep, stress management, and smoking). Participants were individually interviewed to collect the personal, obstetrical, and lifestyle data (pre-program). Then, lifestyle modification guidelines were explained using various methods of health teaching; PowerPoint show and interventional guideline handout. The pregnant women were assured every two weeks until 36th weeks of gestation, then weekly until delivery about the importance of lifestyle modification for their condition. One week after delivery, the lifestyle data were collected (post-program).

Ethical Consideration

An approval from the Research Ethics Committee, Faculty of Nursing, Port-Said University was obtained. Written approval was obtained from Port Said Maternity Hospital administrators and head of the concerned department. The aim and procedure of the current study were explained to each woman and a verbal approval consent was obtained. They were assured confidentiality and privacy. They have the right to withdraw from the study at any time without any reason.

RESULT

Table (1) Reveals the personal data of the studied sample. It was estimated that, the mean age was (29.85±6.99), 75.0% of them were housewives, 57.5% of them had secondary education, and all of them were married.

Table (2) Clarifies the obstetrical history among the studied sample. It was observed that, 92.5% of them were multigravida, 57.5% of them didn't have a history of abortion. Also, the majority of them didn't have a history of preterm delivery (87.5%). In addition, 57.5% of them had less than 2 years inter-pregnancy intervals.

Table (3) Shows the lifestyle dimensions among the studied sample in the pre and post assessment. Concerning nutrition, the mean score in the post-program was significantly high than the pre-program (18.65±5.11 & 26.23±2.68) respectively. Regarding physical exercise, 7.5% & 62.5% always doing physical exercise in the pre and post assessment for (27.50±10.84 & 28.92±4.58) minutes per session, and (3.67±0.82 & 4.92±1.36) sessions weekly respectively. In addition, 10.0% & 40.0% of the studied

sample didn't sleep 8 hours at night and 2 hours in the daytime in the pre and post assessment. Also, 87.5% & 52.5% of them were exposed to stress in their life in the pre and post assessment. In relation to stress management, 47.5% & 87.5% of them able to manage

the stress if experienced in the pre and post assessment. Finally, the mean score of smoking habits in the post-program assessment was higher than the pre-program assessment (5.33 ± 0.53 & 4.95 ± 0.68) respectively.

Table 1: Personal data of the studied sample (n= 40).

Variables	No	%
Age (year)		
20-	14	35.0
26-	6	15.0
31-	7	17.5
More than 35	13	32.5
Mean (SD)	29.85±6.99	
Occupation		
Occupied	10	25.0
Housewife	30	75.0
Educational Level		
Illiterate	4	10.0
Primary	6	15.0
Secondary	23	57.5
University	7	17.5
Marital Status		
Married	40	100.0

Table 2: Obstetrical history of the studied sample (n= 40).

Variables	No	%
Gravidity		
Primigravida	3	7.5
Multigravida	37	92.5
Parity		
Nullipara	3	7.5
Primipara	12	30.0
Multipara	25	62.5
History of abortion		
None	23	57.5
Once	9	22.5
Twice	8	20.0
History of Preterm Labor		
Yes	5	12.5
No	35	87.5
Pregnancy Interval (year)		
Nulliparous	3	7.5
Less than 2	23	57.5
2 – 5	11	27.5
More than 5	3	7.5

Table 3: Lifestyle in the pre and post assessment among the studied sample (N= 40)

Lifestyle Dimensions	Pre	Post	Sig.
Nutrition Mean (SD)	18.65±5.11	26.23±2.68	t= 8.304 p= 0.000**
Physical Exercise			
Always	3 (7.5%)	25 (62.5%)	X ² = 49.508 p= 0.000**
Sometimes	4 (10.0%)	13 (32.5%)	
Never	33 (82.5%)	2 (5.0%)	
Physical exercise session (Min) Mean (SD)	27.50±10.84	28.92±4.58	t= 0.563 p= 0.576
Physical exercise session per week Mean (SD)	3.67±0.82	4.92±1.36	t= 2.176 p= 0.035*

Lifestyle Dimensions	Pre	Post	Sig.
Sleep			
Always	16 (40.0%)	26 (65.0%)	X ² = 9.803 p= 0.007*
Sometimes	8 (20.0%)	10 (25.0%)	
Never	16 (40.0%)	4 (10.0%)	
Stress			
Exposure to stress			X ² = 11.667 p= 0.001**
Yes	35 (87.5%)	21 (52.5%)	
No	5 (12.5%)	19 (47.5%)	
Ability to manage stress			X ² = 14.587 p= 0.000**
Yes	19 (47.5%)	35 (87.5%)	
No	21 (52.5%)	5 (12.5%)	
Smoking			t= 2.766
Mean (SD)	4.95±0.68	5.33±0.53	p= 0.007*

DISCUSSION

The aim of the present study was to evaluate the effect of an educational program on lifestyle among pregnant women with mild PE; this aim was significantly approved the research's hypothesis that the pregnant women with mild preeclampsia who get information regarding the proper lifestyle, were modified their lifestyle in relation to nutrition, physical activities, sleep, stress management, and smoking habits. Preeclampsia is a high-risk pregnancy condition, which needs specific modification of lifestyle. In addition, pregnant women with PE need an educational programme regarding the proper lifestyle for PE.

As yielded by the present study, the total mean score of nutritional habits was significantly improved at the post-program phase. These findings are going in the same line with Afefy and Kamel (2019), who study the effect of an educational module on the knowledge and self-care of women with PE, they found that about half of them had partially correct answers and less than one fifth of them had incorrect answers regarding nutrition for PE. The authors reported that the level of knowledge regarding nutrition among women with PE was improved after implementing an educational session.

Moreover, the results of the present study revealed that the minority of the pregnant women with PE have been always practiced physical exercise in the pre-program phase compared to two thirds in the post-program phase as a result of the educational sessions regarding the importance of walking as a safe physical exercise during pregnancy. These findings are supported by Matin *et al.*, (2020), who conducted a study to evaluate the effect of group training and telemedicine on exercise among pregnant women. They mentioned that, the proper education and training regarding exercise during pregnancy is recommended to improve the level of awareness and promote the rate of exercise.

However, the results of the current study revealed that two fifths of the pregnant women with PE

always sleep about eight hours a night and two hours a daytime at the pre-program phase compared to two thirds at the post-program phase; this may be related to the educational sessions about the measures which improve sleep among pregnant women with mild PE. These findings are in agreement with Ladyman *et al.*, (2020), who constructed a longitudinal sleep education program and study its effect on sleep quality among nulliparous women. The authors observed that, the intervention group had better sleep quality, sleep initiation, and sleep continuity than the controls in late pregnancy.

Furthermore, the results of the current study clarified that slightly more than two fifths of the pregnant women with PE know strategies to deal with their stress at the pre-program phase compared to the majority of them at the post-program phase; this may be related to the educational sessions about the condition of PE and measures to relieve stress. These findings are going in the same line with Zarenejad *et al.*, (2020), who study the effect of stress reduction strategies on anxiety among pregnant women. The authors mentioned that the stress reduction strategies reduced the level of maternal anxiety and they recommended the educational sessions concerning measures of stress reduction to reduce the level of anxiety.

The results of the present study concluded that educational programme is an effective way to modify the lifestyle among pregnant women with mild PE. These findings are in agreement with Alnuaimi *et al.*, (2020), who found that PE educational programme increase the awareness of pregnant women with PE regarding preeclampsia and self-monitoring with statistically significant. In addition, Rasouli *et al.*, (2019) study showed a positive relationship between knowledge about self-care for prevention and control of the PE. The factors influencing PE self-care include making lifestyle changes, having a healthy diet, learning measures to relief stress participating in physical exercise, performing physical activities, taking dietary supplements such as calcium and antioxidants, and adhering to heparin and aspirin regimens.

Pregnant women whose sometimes or never modify their habits may be because of nausea and vomiting, heartburn, and food craving, which are accompanied with pregnancy may affect the nutritional habits. Also, fatigue, weight gain, and edema which are accompanied with PE may affect the physical exercise and activities. In addition, headache, frequent urination, nausea and vomiting, heartburn, high levels of progesterone, back pain, pressure of gravid uterus, discomfort, leg cramps, anxiety may affect the quality of sleep. Fear and anxiety about the outcomes may negatively affect the psychological status.

CONCLUSION

Educational programs about the proper lifestyle for mild preeclampsia through a PowerPoint presentation and distribution of the booklet are an effective method to modify the lifestyle among pregnant women with mild preeclampsia. Health education sessions about lifestyle modification should be implemented to pregnant women with mild preeclampsia.

Source of Funding: Self.

Conflict of Interest: Nil.

REFERENCES

- Afefy, N. A., & Kamel, A. D. (2019). Effect of an educational module on the knowledge and self-care of women suffering from preeclampsia. *Journal of Nursing and Health Science*, 8(2), 33-42.
- Alnuaimi, K., Abuidhail, J., & Abuzaid, H. (2020). The effects of an educational programme about preeclampsia on women's awareness: a randomised control trial. *International Nursing Review*, 67(4), 501-511.
- Arulkumaran, N., & Lightstone, L. (2013). Severe pre-eclampsia and hypertensive crises. *Best Practice & Research Clinical Obstetrics & Gynecology*, 27(6), 877-884.
- Carson, M.P., Gibson, P.S., Peng, T.C., & Talavera, F. (2015). Hypertension and pregnancy. Medscape. Retrieved from: <http://emedicine.Medscape.com/article/261435-overview>.
- Ladyman, C., Signal, T. L., Sweeney, B., Gander, P., Paine, S., & Huthwaite, M. (2020). A pilot longitudinal sleep education intervention from early pregnancy and its effect on optimizing sleep and minimizing depressive symptoms, 6(6), 778-786.
- Magloire, L., Funai, E. F., Lockwood, C. J., & Barss, V. A. (2015). Gestational hypertension. Uptodate. Retrieved from: <http://www.uptodate.com/contents/gestational-hypertension>.
- Matin, Z. S., Khayat, S., Navidian, A., & Fanaei, H. (2020). Comparing the effect of group training and telemedicine on exercise during pregnancy: An application of the health belief model. *J Edu Health Promot*, 9, 187.
- Mayo Foundation for Medical Education and Research. (2015). Lifestyle and home remedies. Retrieved from: <http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/basics/lifestyle-home-remedies/con-20019580>.
- Normayanti, Suparyatmo, J. B., & Prayitno, A. (2020). The effect of nutrition education on body mass index, waist circumference, mid-upper arm circumference and blood pressure in obese adolescents. *Electron J Gen Med*, 17(5), em221.
- Norwitz, E. R., Lockwood, C. J., & Barss, V. A. (2020). Preeclampsia: management and prognosis. Retrieved from: <https://www.uptodate.com/contents/preeclampsia-management-and-prognosis/print>.
- Onuigwe, F. U., Udoma, F. P., Dio, A., Abdulrahman, Y., Erhabor, O., & Uchechukwu, N. J. (2015). Platelet count in women with pregnancy induced hypertension in Sokoto, North Western Nigeria. *Research in Obstetrics and Gynecology*, 3(1), 1-4.
- Rasouli, M., Poorheidari, M., & Gardesh, Z. H. (2019). Effect of self-care before and during pregnancy to prevention and control preeclampsia in high-risk women. *International Journal of Preventive Medicine*, 10(1). DOI: 10.4103/ijpvm.IJPVM_300_17.
- Saffari, M., Amini, N., Ardebili, H. E., Sanaeinasab, H., & Mahmoudi, M. (2013). Educational intervention on health-related lifestyle changes among Iranian adolescents. *Iranian journal of public health*, 42(2), 172-181.
- Zarenejad, M., Yazdkhasti, M., Rahimzadeh, M., Tourzani, Z. M., & Esmaelzadeh-Saeieh, S. (2020). The effect of mindfulness-based stress reduction on maternal anxiety and self-efficacy: A randomized controlled trial. *Brain Behav*, 10(4), e01561.