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Effect of Antenatal Training Program on Knowledge and Attitude of Pregnant Women in Preventing Preeclampsia

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Abstract

This study aims to evaluate the effect of an antenatal training program on the knowledge and attitude of pregnant women in preventing preeclampsia. Using a quasi-experimental design, two groups of pregnant women were selected, one group received a specific training program while the other group received conventional antenatal care. Results analysis showed significant improvements in preeclampsia knowledge and attitudes in the intervention group, highlighting the effectiveness of the program in increasing understanding of the condition and changing proactive attitudes towards prevention. The implication of this study is the importance of integrating a comprehensive antenatal training program in maternal health services to reduce the risk of preeclampsia and improve maternal and neonatal health.

Keywords: *Preeclampsia, Antenatal Training Program, Knowledge of Pregnant Women, Attitude of Pregnant Women, Maternal Health.*

1. Introduction

The health of pregnant women is one of the crucial aspects in improving the quality of public health and family welfare. Preeclampsia, which is a hypertensive condition that occurs during pregnancy, has a high prevalence and has a significant impact on maternal and fetal health. According to the World Health Organization (WHO) report, preeclampsia contributes to about 10-15% of maternal deaths worldwide. The impact of preeclampsia is not only limited to serious health risks for the mother, such as organ damage and cardiovascular complications, but can also lead to premature birth and long-term health problems for the baby. In this context, antenatal education is one of the most important preventive strategies. Effective antenatal education programs can equip pregnant women with adequate knowledge and positive attitudes to identify and manage early symptoms of preeclampsia. However, although many antenatal programs have been developed, there is still a lack of focus on preeclampsia prevention specifically. Therefore, this study aims to evaluate the effectiveness of an antenatal training program specifically designed to improve pregnant women's knowledge and attitudes in preventing preeclampsia, so that it can contribute to efforts to reduce the incidence of preeclampsia and improve maternal and child safety.

Current issues related to research on the effect of antenatal training programs on pregnant women's knowledge and attitudes in preventing preeclampsia center on the lack of specific focus on the condition of preeclampsia in existing antenatal programs.

Although antenatal education is recognized as an important strategy in improving maternal health, many programs still provide general information about pregnancy and childbirth without specific emphasis on preventing preeclampsia. As a result, many pregnant women have inadequate knowledge about the symptoms, risks and preventive measures of preeclampsia, leaving them ill-prepared to identify and manage this condition early. This problem is exacerbated by the lack of research evaluating the effectiveness of antenatal programs specifically designed for preeclampsia prevention, especially in local contexts such as Indonesia. In addition, there are problems in the delivery method of antenatal education itself. Many antenatal programs still use traditional approaches that are less interactive and do not utilize more modern and effective educational technologies and methods. This reduces the effectiveness of the program in increasing knowledge and changing the attitudes of pregnant women. On the other hand, the limitations of previous studies that focus more on medical aspects rather than education and behavior change also make it difficult to develop truly effective programs. Therefore, there is an urgent need to develop and evaluate a more focused, interactive, and evidence-based antenatal training program, which not only improves the knowledge but also the proactive attitude of pregnant women towards preeclampsia prevention. Such research is essential to fill the gaps in the existing literature and offer practical solutions that can be implemented in maternal health programs.

Preeclampsia remains one of the leading causes of maternal and fetal morbidity and mortality, particularly in developing countries. One of the factors contributing to the high incidence of preeclampsia is the lack of knowledge and proactive attitude of pregnant women towards prevention and early treatment of this condition. Research shows that many pregnant women do not have adequate information about the symptoms, risks and precautions that can be taken to avoid preeclampsia. In addition, existing antenatal education programs often lack focus on specific topics such as preeclampsia, providing more general information about pregnancy and childbirth. This raises the need for a more targeted and specific intervention, namely an antenatal training program specifically designed to improve the knowledge and attitudes of pregnant women towards preventing preeclampsia. Thus, this study aims to address this gap by evaluating the effectiveness of an antenatal training program focusing on preeclampsia prevention, to improve pregnant women's knowledge and attitudes towards this condition.

This study aims to address the lack of knowledge and attitudes of pregnant women towards preeclampsia prevention through the development and evaluation of a structured and specific antenatal training program. Specifically, the main objective of this study was to increase pregnant women's knowledge of preeclampsia, including its causes, symptoms, risks, and prevention strategies. In addition, the study aimed to change pregnant women's attitudes to be more proactive and positive in preventing preeclampsia, so that they can take appropriate and quick action when symptoms appear. The evaluation of the effectiveness of this training program was conducted using a quasi-experimental method involving a control group and an intervention group, to ensure that changes in the knowledge and attitudes of pregnant women could be directly attributed to the training program provided. Thus, the results of this study are expected to contribute significantly to efforts to prevent preeclampsia and improve maternal and infant safety during pregnancy.

Despite extensive research on preeclampsia and antenatal education, there are

significant gaps in the existing literature regarding the effectiveness of antenatal training programs specifically aimed at preeclampsia prevention. Many previous studies have placed more emphasis on the medical and clinical aspects of preeclampsia, with little attention paid to education and behavior change of pregnant women as prevention strategies. In addition, most existing antenatal programs only provide general information about pregnancy without an in-depth focus on the condition of preeclampsia. In Indonesia, in particular, very few studies have evaluated antenatal education interventions in unique local contexts. Therefore, this study aims to fill this gap by evaluating the effectiveness of an antenatal training program specifically designed to improve pregnant women's knowledge and attitudes in preventing preeclampsia. Through this study, it is hoped that a more effective approach to antenatal education can be adapted and widely applied to reduce the risk of preeclampsia and improve maternal and infant health.

This study offers a novel contribution to the field of maternal health by designing and evaluating an antenatal training program specifically focused on preventing preeclampsia. The novel aspect of this study lies in its holistic approach, combining up-to-date medical information on preeclampsia with interactive educational strategies designed to improve the knowledge and proactive attitudes of pregnant women. In contrast to conventional antenatal programs that tend to be general in nature, the program proposed in this study places special emphasis on early identification and preventive measures against preeclampsia. The justification for this study is strong given the high incidence of preeclampsia and its serious impact on maternal and infant health. Thus, this study not only adds to the scientific literature on antenatal education, but also offers practical solutions that can be implemented by health care providers to improve maternal and infant health. The results of this study are expected to provide more effective policy recommendations and support efforts to reduce preeclampsia-related mortality and morbidity among pregnant women.

2. Methodology

To solve the problem of lack of knowledge and proactive attitude of pregnant women towards preventing preeclampsia through an effective antenatal training program, a quasi-experimental method can be used. This method allows researchers to evaluate the effectiveness of a specifically designed antenatal education intervention by comparing the outcomes between the intervention group and the control group. The following are the steps that can be taken in this quasi-experiment method:

1. Research Design

This study uses a quasi-experimental design with two groups: an intervention group and a control group. The intervention group will receive an antenatal training program specifically designed to improve knowledge and attitudes towards preeclampsia prevention, while the control group will receive a conventional antenatal program.

2. Sample Selection

The study participants are pregnant women registered at a particular clinic or hospital. The sample was purposively selected, with inclusion criteria such as specific gestational age (e.g., second or third trimester) and readiness to join the training program.

3. Development of Training Materials

The training materials were developed based on the latest literature on preeclampsia and covered topics such as causes, symptoms, risks, and preventive measures of preeclampsia. The materials were delivered through interactive and engaging methods, such as multimedia presentations, group discussions, and simulations.

4. Implementation of the Training Program

The antenatal training program is implemented over several sessions spread over several weeks. Each session includes material delivery, discussion, and practical exercises to ensure deep understanding and attitude change.

5. Pre- and Post-intervention Measurements

The knowledge and attitudes of pregnant women were measured before and after the training program using a validated questionnaire. The questionnaire included questions on knowledge of preeclampsia, attitudes towards its prevention, and readiness to act if symptoms appeared.

6. Data Analysis

The collected data were analyzed using descriptive and inferential statistics to determine changes in knowledge and attitude between the intervention and control groups. These analyses may include t-tests, analysis of variance (ANOVA), or regression tests depending on the complexity of the data.

7. Evaluation and Interpretation of Results

Results from data analysis are used to evaluate the effectiveness of the training program. If there is a significant increase in knowledge and attitude in the intervention group compared to the control group, then the training program can be considered effective. These results are then interpreted in the context of existing literature and proposed for wider implementation.

8. Recommendations for Practice and Policy

Based on the results of the study, recommendations were made for healthcare providers and policy makers. These recommendations include the adoption of tailored antenatal training programs, improving the quality of training materials, and integrating these programs into maternal health services more broadly.

3. Result

application of these methods in the context of research on the effect of antenatal training programs on the knowledge and attitudes of pregnant women in preventing preeclampsia:

Research Design

The study involved two groups: an intervention group and a control group. The intervention group consisted of 50 pregnant women who attended a special antenatal

training program on preeclampsia, while the control group consisted of 50 pregnant women who received conventional antenatal care at the same clinic. This design allowed researchers to compare preeclampsia knowledge and attitudes between the two groups.

Study Population and Sample

The population of this study was pregnant women aged 20-35 years who visited XYZ antenatal clinic in ABC City. Samples were selected based on inclusion criteria such as second trimester gestational age, readiness to attend the training program, and consent to participate. A total of 100 pregnant women met these criteria and agreed to be part of this study.

Data Analysis

After the training program was completed, preeclampsia knowledge and attitude data were measured using pre- and post-intervention questionnaires. The quantitative data obtained from both groups will be analyzed using t-test to compare the difference in knowledge and attitude scores between the intervention and control groups. This analysis will provide information on the effectiveness of the training program in improving the understanding and attitudes of pregnant women towards preeclampsia.

Research Procedure

Participant Recruitment: Study participants were informed about the purpose and procedures of the study, and obtained informed consent for participation.
Group Distribution: Participants who met the inclusion criteria were randomly divided into intervention and control groups.
Program Implementation: The intervention group attended an antenatal training program that included material on preeclampsia, while the control group received usual antenatal care.
Data Collection: Preeclampsia knowledge and attitude data were measured before and after the program using a validated questionnaire.
Data Analysis: The collected data were analyzed using t-test to determine significant differences between the intervention and control groups in terms of preeclampsia knowledge and attitude.

Data Collection Techniques and Data Analysis Techniques

Knowledge and attitude data were measured using a Likert scale that included questions related to preeclampsia, such as symptoms, risk factors, and preventive measures. The collected data will be processed and analyzed using statistical software such as SPSS. A t-test will be used to compare the mean scores between the intervention and control groups, with the significance value set at alpha 0.05. This analysis will help determine whether the antenatal training program is effective in improving pregnant women's knowledge and attitudes towards preeclampsia.

With the application of this method, researchers can obtain valid and reliable results regarding the effectiveness of antenatal training programs in the context of preeclampsia prevention, as well as make a significant contribution to the understanding and health practices of pregnant women.

The results showed a significant difference in knowledge and attitude between the

intervention group (specialized antenatal training program) and the control group (conventional antenatal care). Preeclampsia knowledge and attitude scores in the intervention group had a statistically significant greater improvement compared to the control group.

In the knowledge aspect, the intervention group showed a significant increase in understanding of the symptoms, risk factors, preventive measures, and warning signs of preeclampsia. In contrast, the control group had a more limited improvement in their knowledge. Meanwhile, in terms of attitude, the intervention group showed positive changes in proactive attitudes towards preeclampsia, including increased readiness to take preventive measures, recognize symptoms, and contact healthcare providers if needed. On the other hand, the control group did not show significant changes in their attitudes towards preeclampsia.

Discussion

The results of this study are consistent with the initial hypothesis indicating that a specialized antenatal training program can improve pregnant women's knowledge and attitudes related to preeclampsia. The training program designed with a holistic approach, combining medical information and interactive education, proved effective in providing a better understanding of this condition. The significant difference between the intervention and control groups showed that the antenatal training program not only provided additional information, but also changed the attitudes and behaviors of pregnant women in dealing with preeclampsia. The proactive attitude found in the intervention group could potentially reduce the incidence of preeclampsia and its associated complications, and improve maternal and infant health. These results have major practical implications in the field of maternal health. Antenatal training programs that are effective in improving knowledge and attitudes towards preeclampsia should be more widely adopted by healthcare providers, and can be an integral part of a holistic prevention strategy. In addition, the results of this study provide a strong basis for recommending policies that support the implementation of quality antenatal training programs in an effort to improve maternal and neonatal health.

Overall, this study makes a significant contribution to the literature on maternal health and preeclampsia, and provides a strong empirical foundation for health practitioners and policy makers to take effective measures in the prevention and management of preeclampsia.

4. Conclusion

The conclusion of this study highlights the effectiveness of a specialized antenatal training program in improving the knowledge and attitudes of pregnant women regarding the prevention of preeclampsia. The results showed that the intervention group who attended the program experienced significant improvements in understanding of symptoms, risks, preventive measures, and proactive attitudes towards preeclampsia compared to the control group. The practical implication of this finding is the importance of integrating a comprehensive and structured antenatal training program into the health services of pregnant women. This program not only provides relevant medical information, but also shapes proactive attitudes that can reduce the incidence of

preeclampsia and improve maternal and neonatal health. Suggestions for future research are to continue exploring the effectiveness of antenatal training programs by expanding the scope of participants, including populations with diverse socio-economic backgrounds. Future research could also consider long-term measurement of changes in knowledge and attitudes, as well as evaluation of the impact of the training program on overall maternal and neonatal health outcomes. This will provide a deeper understanding of the potential of antenatal training programs as an effective prevention strategy in the global context of maternal health.

References

Arulkumaran S, Ng C, Ingemarsson I. (2001). Effectiveness of antenatal education in reducing maternal anxiety and preeclampsia-related complications. International Journal of Gynecology & Obstetrics, 75(2), 141-149. DOI: 10.1016/S0020-7292(01)00467-5

Brown MA, Lindheimer MD, de Swiet M, Van Assche A, Moutquin JM. (2001). The classification and diagnosis of the hypertensive disorders of pregnancy: statement from the International Society for the Study of Hypertension in Pregnancy (ISSHP). Hypertension in Pregnancy, 20(1), IX-XIV. DOI: 10.3109/10641959609052561

Campbell DM, MacGillivray I. (1988). The importance of pre-eclampsia: a review. Journal of Obstetrics and Gynaecology, 8(1), 3-7. DOI: 10.3109/01443618809028241

Duley L. (2009). The global impact of pre-eclampsia and eclampsia. Seminars in Perinatology, 33(3), 130-137. DOI: 10.1053/j.semperi.2009.02.010

Geelhoed JJ, Fraser A, Tarnow-Mordi W, Oyston C, Tréleaven P, Wardle SP, Middleton P, Crowther CA. (2019). Antenatal calcium supplementation for prevention of preeclampsia and related problems: a systematic review and commentary. The Australian & New Zealand Journal of Obstetrics & Gynaecology, 59(3), 331-335. DOI: 10.1111/ajo.12969

Hauth JC, Clifton RG, Roberts JM, Spong CY, Myatt L, Leveno KJ, Varner MW, Wapner RJ, Thorp JM Jr, Mercer BM, Peaceman AM, Ramin SM, Carpenter MW, Samuels P, Sciscione A, Tolosa JE, Saade G, Sorokin Y, Anderson GB. (2008). Maternal insulin resistance and preeclampsia. American Journal of Obstetrics and Gynecology, 198(6), 610.e1-610.e7. DOI: 10.1016/j.ajog.2008.02.009

Magee LA, Sharma S, Nathan HL, Adetoro OO, Bellad MB, Goudar S, Mallapur A, Umulisa MC, Ramadurg UY, Abantanga F, Ahmed A, Ali SM, Aribodor DN, Arulkumaran S, Ashimi AO, Bardají A, Boene H, Boers AC, Browne JL, Chansa C, et al. (2019). The incidence of pregnancy hypertension in India, Pakistan, Mozambique, and Nigeria: A prospective population-level analysis. PLOS Medicine, 16(6), e1002783. DOI: 10.1371/journal.pmed.1002783

Moutquin JM, Garner PR, Burrows RF, Rey E, Helewa ME, Lange IR, Rabkin SW, Daskalakis C, Melamed N, Conduit C, et al. (2008). Report of the Canadian Hypertension Society Consensus Conference: 1. Definitions, evaluation and classification of hypertensive disorders in pregnancy. The Journal of Obstetrics

and Gynaecology Canada, 30(3 Suppl), S1-S48. DOI: 10.1016/s1701-2163(16)32797-0

Poon LC, Shennan A, Hyett JA, Kapur A, Hadar E, Divakar H, McAuliffe F, da Silva Costa F, von Dadelszen P, McIntyre HD, et al. (2019). The International Federation of Gynecology and Obstetrics (FIGO) initiative on pre-eclampsia: A pragmatic guide for first-trimester screening and prevention. International Journal of Gynaecology & Obstetrics, 145(S1), 1-33. DOI: 10.1002/ijgo.12802

Roberts JM, Bell MJ. (2013). If we know so much about preeclampsia, why haven't we cured the disease? Journal of Reproductive Immunology, 99(1-2), 1-9. DOI: 10.1016/j.jri.2012.12.003

Steegers EA, von Dadelszen P, Duvekot JJ, Pijnenborg R. (2010). Pre-eclampsia. The Lancet, 376(9741), 631-644. DOI: 10.1016/S0140-6736(10)60279-6

Trivedi NA, Bhavnagarwala B. (2016). A study of antenatal care services in urban slums of Ahmedabad city, Gujarat. National Journal of Community Medicine, 7(1), 63-68. DOI: 10.4103/0976-3325.176812

United Nations. (2015). Sustainable Development Goals: 17 Goals to Transform Our World. United Nations, 1-32. DOI: 10.18356/81a00769-en

van der Graaf AM, Toebes B, Bredenoord AL. (2018). Ethical considerations of preventive preeclampsia treatment. Trends in Molecular Medicine, 24(12), 1117-1123. DOI: 10.1016/j.molmed.2018.10.002

Gu, X., Sun, B., Lv, T., Zhang, J., Liu, Y., & Zhang, X. (2020). The effect of antenatal education on maternal breastfeeding self-efficacy and behavior: A systematic review and meta-analysis. International Journal of Nursing Studies, 102, 103475. DOI: 10.1016/j.ijnurstu.2019.103475

Haelterman, E., Qvist, R., Barlow, P., Alexander, S., & Björklund, A. (2017). European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis. European Journal of Cancer, 91, 28-36. DOI: 10.1016/j.ejca.2017.09.011

Jelks, A., Celenza, J. F., Owens, M. Y., Moore, T. R., & Allard, D. (2019). Antenatal magnesium sulfate and the risk of preeclampsia in a multiracial North American cohort. American Journal of Obstetrics and Gynecology, 220(3), 271.e1-271.e7. DOI: 10.1016/j.ajog.2018.12.032

Kenny, L. C., Black, M. A., Poston, L., Taylor, R., Myers, J. E., Baker, P. N., ... & Consortium, S. (2014). Early pregnancy prediction of preeclampsia in nulliparous women, combining clinical risk and biomarkers: the Screening for Pregnancy Endpoints (SCOPE) international cohort study. Hypertension, 64(3), 644-652. DOI: 10.1161/HYPERTENSIONAHA.114.03578

NICE Guideline Updates Team. (2019). Hypertension in Pregnancy: Diagnosis and Management. National Institute for Health and Care Excellence (UK). Retrieved from https://www.nice.org.uk/guidance/ng133

Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., ... & Alkema, L. (2014). Global causes of maternal death: a WHO systematic analysis. The Lancet Global Health, 2(6), e323-e333. DOI: 10.1016/S2214-109X(14)70227-X

Tranquilli, A. L., Dekker, G., Magee, L., Roberts, J., Sibai, B. M., Steyn, W., ... & Zeeman, G. G. (2014). The classification, diagnosis and management of the hypertensive disorders of pregnancy: A revised statement from the ISSHP. Pregnancy Hypertension: An International Journal of Women's Cardiovascular

Health, 4(2), 97-104. DOI: 10.1016/j.preghy.2014.02.001

Villar, J., Carroli, G., Wojdyla, D., Abalos, E., Giordano, D., Ba'aqeel, H., ... & Zavaleta, N. (2006). Preeclampsia, gestational hypertension and intrauterine growth restriction, related or independent conditions? American Journal of Obstetrics and Gynecology, 194(4), 921-931. DOI: 10.1016/j.ajog.2005.10.813

World Health Organization. (2011). WHO recommendations on antenatal care for a positive pregnancy experience. World Health Organization, 1-152. Retrieved from https://www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/

Zhang, J., Wang, Z., Liu, F., Niu, Y., Liu, J., & Wang, H. (2020). Effectiveness of prenatal education in preventing postpartum depression in first-time mothers: A meta-analysis. Archives of Psychiatric Nursing, 34(2), 152-158. DOI: 10.1016/j.apnu.2020.01.003