



Effect of Video-assisted Teaching Programs on the Knowledge, Practices, and Attitude of Pregnant Women at Risk for Preeclampsia

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ABSTRACT

Background: Providing video-assisted teaching programs to pregnant women at risk for preeclampsia is very important and will lower maternal, fetal, and neonatal morbidity and mortality. **The aim of this study** was to examine the effect of video-assisted teaching programs on the Knowledge, practices, and attitude of pregnant women at Risk for Preeclampsia. **Method:** Quasi-experimental research design (pretest/posttest) was adopted. A purposive sample of 120 pregnant women at Risk for Preeclampsia was recruited based on specific criteria. **This study was conducted at** EL Shohada Hospital at the Department of Obstetrics and Gynecology in the Menoufia government. **Four tools were used:** I. A structured Interviewing questionnaire; II. Pregnant women's knowledge regarding preeclampsia; III. Pregnant women's practice regarding pre-eclampsia preventive behavior; IV. Pregnant women's attitude questionnaire regarding preeclampsia prevention. **Results:** In the pre-video-assisted teaching program 51.7%, 89.2%, and 47.5% of pregnant women had poor knowledge, unsatisfactory practices, and a negative attitude respectively. While post-intervention, (60%, 88.3% and 70% of pregnant women had high knowledge, satisfactory practice, and a positive attitude respectively. Pre- and post-intervention differences in women's overall preeclampsia knowledge, practices, and attitudes were highly statistically significant ($p < 0.001$). **Conclusion:** Pregnant women who participated in Video-assisted teaching programs experience an expedited acquisition of knowledge, promote caring practices, and encourage a positive attitude toward the prevention of preeclampsia during pregnancy. **Recommendation:** Applying video-assisted teaching programs during antenatal care for pregnant women at risk of preeclampsia will improve their knowledge, practices, and attitude regarding preeclampsia disease.

Keywords: Video-assisted Teaching programs, Knowledge, Practices, Attitude, Preeclampsia

Introduction

Pregnancy is natural and the most joyful phenomenon in a woman's life. It leads to transient physiological changes that may have widespread ramifications. Pregnancy-related illnesses that worsen the body's physiology leave an imprint of earlier illnesses and have an effect on the health of

affected women for the rest of their lives. Preeclampsia is the leading cause of maternal morbidity and death globally (**Rana et al., 2019**).

Preeclampsia means new-onset hypertension. Preeclampsia can be initially diagnosed based on certain criteria, such as a systolic blood pressure of

140 mm Hg or higher, or diastolic blood pressure of 90 mm Hg or higher on two separate occasions spaced at least four hours apart; alternatively, a shorter interval timing of 160 mm Hg or higher, or a diastolic blood pressure of 110 mm Hg or higher. Additional subtypes of preeclampsia that can be distinguished include mild and severe, all of which must be determined after twenty weeks of gestation (**Garovic et al., 2022**).

Preeclampsia has no known cause. It is understood that altered placental function is the reason, though. It is thought that during pregnancy, inflammatory compounds from the placenta circulate inside the woman's body and influence the artery walls, raising blood pressure and allowing the protein to leak through the kidney's vessel walls (leading to proteinuria). Early-onset preeclampsia frequently results in severe placental insufficiency and decreased fetal growth. Preeclampsia runs in families, primigravida, preexisting hypertension, advanced maternal age (above 35), multiple gestation (twins, triplets, etc.), thrombophilia, women with a few uncommon autoimmune diseases, diabetes, women whose most recent delivery took place more than ten years ago, use of donor egg, and obesity are risk factors (**Magee et al., 2022; Ugurlu et al., 2021; Snead et al., 2020**).

Preeclampsia usually first manifests itself in near-term pregnancies. Additional noteworthy discoveries that might or might not be a component of the clinical manifestation encompass; proteinuria, indications of end-organ

injury, like thrombocytopenia, compromised liver function, epigastric pain, ruling out any other plausible diagnosis, abruptly developing headache that is unresponsive to treatment, pulmonary edema, or renal insufficiency with aberrant laboratory results. (**Sinkey et al., 2020; Phipps et al., 2019**)

Preeclamptic women may eventually experience symptoms like lethargy, swelling of the hands, feet, and face, headache, nausea, and visual problems (usually represented by flickering lights). Some preeclamptic pregnant women also experience reduced fetal movement due to placental insufficiency and Fetal growth restriction, Placental abruption, and Preterm birth (**Garovic et al., 2020; Sinkey et al., 2020; Turbeville et al., 2020**).

Pregnant women may seek care earlier in their pregnancies if they can identify the early symptoms and warning indications of preeclampsia. With the right information and counseling, up to 50% of the serious effects of preeclampsia symptoms in women might be avoided. Preeclampsia adversely affects the quality of life as it relates to health. Additionally, high-risk women's increased risk of preeclampsia can be decreased or avoided by adopting good lifestyle habits (**Iqomatulhaq et al., 2019**).

To increase women's knowledge and practice, a variety of teaching techniques are employed, including lectures, demonstrations, discussions, self-education, and a video-assisted

teaching program. Video-based training would be advantageous for women since it would enable them to enhance and perfect their current abilities and expertise, leading to improved care (Safwat, 2018). The use of technology to electronically capture, record, store, transmit, and reconstruct a series of images representing situations in motion is known as "Video-assisted teaching." Additionally, because drawings may communicate without using words, they assist those who speak different languages (Balasubramanian et al., 2018).

Because the video teaching method understandably presents complicated concepts and concerns through sight, voice, and motion, it improves women's learning. The video teaches in a way that spoken words alone just cannot, and it bridges the educational gap by making it easier for women with low reading proficiency to understand what they are learning. The fact that drawings and procedures rely on pictures rather than words makes it easier to overcome language obstacles. It is a tool that improves the relationships between women in follow-up discussions by giving nurses and women educators a point of reference or a subject of shared interest (Devi et al., 2019).

The first critical step towards improving maternal well-being is treating preeclampsia in pregnant women pre-post birth. Clinical policies and procedures about women's health providers must be supported by up-to-date, evidence-based guidelines, according to the World Health Organization (2018). Nurses play a crucial role in

addressing misunderstandings and providing women with counseling and support to help them take ownership of their self-care. In addition, by giving pregnant women support, advice, and information, women's health and midwifery nurses contribute significantly to raising the standard of care. In addition, the nurse is crucial in health assessment, counseling, referrals, and educating women about the prevention and treatment of preeclampsia (Ahmed et al., 2021; Shaheen., 2020; Hassan, 2018).

Significance of the study

It is important to identify preeclampsia cases so that they can receive the proper nursing care, which will lower mortality and morbidity (Rastegari et al., 2019). As part of the goals for sustainable development, it aims to reduce the worldwide maternal death ratio to less than 70 per 100,000 people between 2016 and 2030. All preeclamptic women could receive lifestyle recommendations under local, national, and international standards (Ugurlu et al., 2021).

Preeclampsia is a hypertensive disease that occurs during pregnancy. This disease encompasses 2 to 8% of pregnancy-related complications, greater than 50,000 maternal deaths, and over 500,000 fetal deaths worldwide (Centers for Disease Control and Prevention., 2022). Considerable studies have looked into how medical treatment affects preeclampsia women's outcomes. Furthermore, additional research found that pregnant women exhibited inadequate

knowledge, practices, and negative attitudes about preeclampsia, indicating the need to raise pregnant women's understanding and awareness concerning preeclampsia and follow healthy attitudes toward it based on health education provided through antenatal clinics (Chanda, 2023; Ebrahimi et al., 2019; Fondjo et al., 2019).

Early detection and prompt management are essential to prevent morbidity and mortality associated with preeclampsia. This activity reviews the clinical presentation, complications, and management of preeclampsia. It describes the role of the interprofessional team in managing and improving care for women with this condition (Karrar & Hong, 2023). So, Women should practice preventive measures since they can reduce the risk of maternal morbidity and mortality from preeclampsia (Ayed et al., 2021). First prevention measures include preventing pregnancy in women who are at high risk for preeclampsia, enhancing women's nutritional intake, altering their lifestyles to lessen the likelihood of contracting the illness and lessen the stressors connected to these pregnancies, and enhancing the mental health of mothers who are carrying high-risk pregnancies (Hadian et al., 2018).

A Video-assisted teaching program used in education can promote an easy and innovative way to attract today's women to their intervention. Video-assisted teaching is regarded as a crucial component of education since it connects theory to practice (Devi et al., 2019). Sadly few studies explored the effect of video-assisted teaching programs on the knowledge, practices, and attitude

of pregnant women at risk for preeclampsia. Thus, this study aimed at examining the effect of video-assisted teaching programs on the knowledge, practices, and attitude of pregnant women at risk for preeclampsia.

Aim of the study

The aim of the current study was to examine the effect of Video-assisted Teaching Programs on the knowledge, practices, and attitude of pregnant women at risk for preeclampsia.

Research Hypothesis

Pregnant Women who receive Video-assisted Teaching Programs may exhibit higher post-test knowledge, practices, and attitude scores than in the pre-test.

Subject and method

Research design

The current study used a quasi-experimental design (one group pre- and post-test) where the result of interest is tested twice, once before and once after exposing a non-random group of individuals to a particular intervention/treatment (Maciejewski., 2020).

Setting

The study was conducted at the Menofia University Hospital's Obstetrics and Gynaecology Outpatient Clinic in Shebinelkom, Menofia Governorate, Egypt. The clinic is made up of two rooms and is located on the hospital's first floor. The first room is set apart to take a history, make a diagnosis, and do an ultrasound. The second room is intended for clinical examinations related to obstetrics and gynecology. According to local statistics for 2022, the clinic serves about 6830

women yearly (El Shohada Hospital's Department of Obstetrics and Gynaecology, 2022).

Sample

A purposive sample of one hundred and twenty pregnant women at risk for preeclampsia, attended an outpatient clinic to obtain regular antenatal clinic treatment in accordance with their scheduled appointment. The included sample consisted of primiparous with gestational age from 12 to 20 weeks, who were at risk of preeclampsia and met the following criteria: Having a preeclampsia-related family history (mother or sister), obesity, having twins or more, being under the age of 20 or above the age of 35. While some medical issues are disqualified in the sample such as chronic hypertension, also known as gestational hypertension, thrombophilia and antiphospholipid syndrome are examples of blood clotting diseases. Diabetes or renal illness, for example, Lupus, Periodontal disease, and Congenital Anomalies are examples of autoimmune disorders.

Sample Size

Based on data from the literature (Abd Elhaleem et al., 2021), the sample size is calculated using the following formula, which has a 5% precision/absolute error and a 5% type 1 error.

$$n = \frac{(Z_{1-\alpha/2})^2 \cdot P(1-P)}{d^2} \text{ where } Z_{1-\alpha/2} \text{ at } 5\% \text{ type 1 error (} p < 0.05 \text{) is } 1.96, P \text{ represents the population's expected proportion based on past studies, while } d \text{ stands for precision or absolute error. As such, the sample size } n = \frac{(1.96)^2 \cdot (0.90)(1-0.90)}{(0.0536)^2} = 120.3.$$

The algorithm indicates that a total sample size of 120 is needed for the investigation.

Tools of data collection

The data for the study was collected using the following 4 tools:

Tool I: Structured interview questionnaire: The author of the study created this tool following an evaluation of the relevant literature (Abd Elhaleem et al., 2021). It included: **Part 1: Personal data** which included; age, residence, level of education, occupation & family history for chronic diseases. **Part 2: Physical assessment** which included height, weight, and body mass index. **Part 3: Obstetric History** such as gestational age, gravidity, complications during previous pregnancy & type of complications during previous pregnancy.

Tool II: Pregnant women's knowledge regarding preeclampsia: It was created by the researcher to determine the degree of pregnant women's knowledge of preeclampsia following a thorough analysis of the relevant literature (Abd Elhaleem et al., 2021). Five inquiries addressed: Who is susceptible to preeclampsia? How can preeclampsia be avoided? Which supplements help decrease blood pressure when expecting? Does preeclampsia cause Convulsions? Is preeclampsia serious for the fetus in the uterus?

Scoring system

The right answer received a score of two, the incomplete answer received a score of one, and the incorrect answer received a score of zero. Each question's score was added together to provide a final score that ranged from zero to ten. Three

categories were created from the overall knowledge scores: low knowledge (less than 50%, or less than 5); acceptable knowledge (between 50% and less than 75% or from 5 to less than 7.5); and high knowledge (greater than 75%, or equal to or more than 7.5) utilizing the Bloom's cut-off point (Bloom., 1968).

Tool III: Pregnant women's practice regarding pre-eclampsia preventive behavior (pre-post tool); ten questions, such as "Do you try to lose as much excess weight as possible? Do you regularly exercise? Have you cut back on your coffee intake and eaten less salt in your diet? Are you consuming enough calcium, folic acid, and vitamin D in your diet? Do you try to take enough time to sleep? How well-managed is your kidney health? Do you manage or prevent diabetes? Have you been following up with your doctor? Do you take a little dosage of aspirin every day? Do you seek a physician when you have a headache?

Scoring system

If completed correctly, a score of (one); if not, a score of (zero). The entire score fell between zero and ten. The entire practice score was converted to a percent score, with a score of at least five seventy percent indicating satisfactory practice and a score of less than five seventy percent indicating unsatisfactory practice utilizing Bloom's cut-off point (Bloom.,1968).

Tool IV: Pregnant women's attitude questionnaire regarding preeclampsia prevention: It was developed by the researchers. It had five questions. Do you think it should be required for every pregnant woman to have her

blood pressure checked at every antenatal clinic (ANC) visit? Do you think that a mean arterial blood pressure reading is suitable for identifying high blood pressure? Do you believe that all pregnant women should have a proteinuria test performed during ANC? Do you think that pregnant women and all medical professionals must avoid preeclampsia in young women who may be at risk for it? Do you think eating healthy fruit and vegetable foods can decrease the risk of preeclampsia?

Scoring system

Agree received a score of two, disagree received a score of one, and neutral received a score of zero. The scores for five statements were reversed. Each statement was assigned a score, and these scores were added up to calculate an overall attitude score between five and ten. Three levels were assigned based on the overall score: negative (less than or equal to 5) and positive (more than 5), utilizing Bloom's cut-off point (Bloom.,1968).

Validity

A structured interview questionnaire schedule was developed by the researchers, and five academic nursing professionals with expertise in women's health and midwifery nursing evaluated and confirmed its content validity. The accuracy, relevance, and clarity of the tool's contents were verified. That's why the recommended changes were made.

Reliability

The reliability of the recommended instruments was evaluated using the Cronbach's alpha coefficient test. The structured interview questionnaire schedule's Cronbach's alpha of 0.89

showed a high degree of positive correlation between its components. In contrast, the test-retest validity and reliability of the knowledge, practices, and attitude of the prenatal population was 0.95.

Ethical Considerations

Participants who agreed to participate in the study provided written informed consent. Each participant received information about the purpose and designs of the study, as well as assurances that confidentiality, privacy, and anonymity would be upheld and that participation was entirely voluntary and may be withdrawn at any time without compromising the quality of care received. On 21-6-2023, the Ethical Committee of Menoufia University Research No: 958 met and issued initial approval to conduct the study, and following data collection, final approval was obtained for the study.

Pilot Study

Ten percent of the samples (twelve women) were enrolled in pilot research that was done to evaluate the tools' objectivity, clarity, and viability. According to the pilot study, the tools took an average of one hour to complete (fifteen minutes for socio-demographic tools and thirty hours for other tools).

Procedure

Between June 2023 and November 2023, a period of five months was used to gather data. The researcher spent four days from 10:00 am to 2:00 pm in the prearranged location. In order to conduct this study, assessment, implementation, and evaluation were done through interviews.

Interviewing and assessment: In a calm setting, each woman was questioned one-on-one

by the researcher, who documented her responses to questions. Each woman's interview lasted approximately fifteen minutes. Information about socio-demographic characteristics such as age, education level, occupation, place of residence, and family history, was gathered. Additionally, the Last Menstrual Period (LMP) data were collected to calculate the Expected Date of Delivery (EDD) and determine gestational age.

In addition, at the first session, an assessment was done for each woman both groups at (12th to 20th week of gestation) through maternal blood pressure, and lab investigation. BMI assessment was performed by measuring height by measuring tap with cm and weight utilizing an adult scale and calculation of BMI; blood pressure was measured through a sphygmomanometer; lab investigation as albumen in urine was taken from woman's record, ultrasound was done by the obstetrician to rule out the presence of twins and any congenital anomalies.

In addition, each woman was assessed for their knowledge, practices, and attitude related to the preeclampsia prevention pretest questionnaire; tools were completed by the women attending the outpatient clinic who agreed to engage in the study as baseline information and to develop the content of the health education intervention. Researchers distributed the tools to the attending pregnant women at risk for preeclampsia. Baseline interviews for about 20-25 minutes were done in the outpatient clinic with each pregnant woman at risk for preeclampsia.

Implementation

Two video sessions teaching programs regarding preeclampsia were conducted for pregnant women liable to preeclampsia. For four weeks, they received one theoretical and one practical session per two weeks in the lecture room of the outpatient clinics. The sessions lasted 45 to 60 minutes each and were given to twelve groups of eleven to twelve pregnant women. Susceptible to preeclampsia, avoiding preeclampsia, supplements will decrease blood pressure when expecting, complications of preeclampsia such as convulsions, preeclampsia serious for the fetus in the uterus. All previously mentioned were covered in the first session.

The second session focused on the effort to lose as much excess weight as possible, do regular exercise, cut back on coffee intake, eat less salt in the diet, get lots of good sleep, consume enough calcium, folic acid, and vitamin D in the diet, manage kidney health effectively, prevent diabetes occurrence, regular following up with the doctor, take a little dosage of aspirin every day and seek medical attention when experiencing a headache. Every pregnant woman could measure her blood pressure during follow-up visits and identify mean arterial blood pressure, pregnant women and all medical professionals must avoid preeclampsia in young women who may be at risk for it. Eating a healthy diet rich in fruits and vegetables helps decrease the risk of preeclampsia.

Presentations of edited films and eye-catching images were made. At the conclusion of every meeting, the key elements were examined again. Every group of women received the same

instruction twice. At the conclusion of the first session, each pregnant woman who was at risk of developing preeclampsia received an instructional booklet as a guide and was advised of the time of the following session.

The Evaluation phase

Video-assisted teaching programs were evaluated after two weeks of the implementation using the same tools two, three, and four.

Statistical Analysis

All statistical analyses were performed using SPSS for Windows, version 26.0 (SPSS, Chicago, IL). The continuous data had a normal distribution and were shown as mean \pm standard deviation (SD). Categorical data were expressed as numbers and percentages. To compare variables related to categorical data, the chi-square test was used. The correlation coefficient test was used to look for correlations between two variables in continuous data. The study's questionnaires' reliability (internal consistency) test was calculated. Statistical significance was established at $p < 0.05$.

Results of the research

The current study's conclusions are presented in 5 primary sections:

Section I: Personal data of the studied sample; **Section II:** Family History of the studied sample; **Section III:** The body mass index of the studied sample; **Section IV:** Obstetric history of the studied sample; **Section VI:** Pregnant women's knowledge, practices, and attitude regarding preeclampsia.

Table (1) shows that the age range was 15–39 years; the mean age of the sample was 32.3

±6.2 years. Regarding residence, more than half (64.2%) of the sample were living in rural areas. Concerning educational level, more than one-third (38.3%) had higher education. As regards occupation, less than two-thirds (61.7%) of the sample were housewives.

Table (2) shows that the family history of the sample for PIH revealed that, the majority (85 %) of pregnant women had a history of PIH.

Figure (1) illustrates the distribution of pregnant women for the family history regarding the classification of PIH. Less than half of them (47.06 % & 45.10%) had preeclampsia and eclampsia respectively and the least of them (7.84%) had gestational hypertension.

Table (3) It shows that the body mass index of the current pregnancy, 18.3%, 35.8%, and 34.2 % of the sample were underweight, overweight, and obese respectively.

Table (4) It reflects the gestational age of the current pregnancy, which spanned from 12 to 20 weeks, with fewer than half of them (40.8%) falling between 12 and 14 weeks. While just around three-quarters of them (70%) were multigravida. The majority of the sample (90.5%) had problems during their last pregnancy, with PIH accounting for more than one-third (38.16%).

Table (5) demonstrates the distribution of knowledge, practice, and attitude among the study sample at risk of preeclampsia before and after

video-assisted teaching programs. In terms of knowledge level in the pre-video-assisted teaching programs, 51.7% and 16.6% of the sample had poor knowledge and high knowledge respectively. While post video-assisted Teaching programs 60% and 12.5% of the sample had high knowledge and poor knowledge respectively. In terms of practice level, the majority (89.2%) of the sample had unsatisfactory practice and the majority (88.3%) of the sample had satisfactory practice, pre-, and post-video-assisted Teaching programs respectively. Meanwhile, over half of the examined sample (47.5%) of the sample had a negative attitude during the pre-video-assisted teaching programs, but nearly three-quarters (70%) of the sample had a positive attitude during the post-video-assisted teaching programs. Pre- and post-intervention differences in women's overall preeclampsia knowledge, practices, and attitude were highly statistically significant ($p < 0.001$).

Table 1 Personal data of the studied sample (n=120).

Items	Frequency	%
Age (Years)		
15 – 19	17	14.2
20 – 24	24	20.0
25 – 29	22	18.3
30 – 34	24	20.0
35 – 39	33	27.5
Mean \pm SD		32.3 \pm 6.2
Residence		
Rural	77	64.2
Urban	43	35.8
Educational Level		
Cannot read and write	16	13.3
Read and write	12	10.0
Primary education	13	10.8
Preparatory education	13	10.8
Secondary education	20	16.7
Higher education	46	38.3
Occupation		
Housewife	74	61.7
Working	46	38.3

Table 2 Family History of the studied sample (n=120).

Item	Freq	%
Family history of PIH		
Yes	102	85
No	18	15

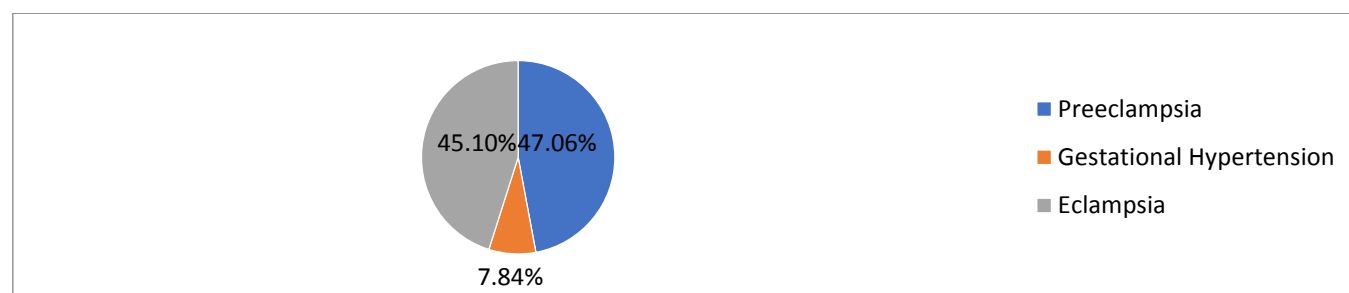
**Figure 1** The Family History of the studied sample regarding the Classification of PIH.

Table 3 The body mass index of the studied sample (n=120).

Items	Frequency	%
Body mass index		
Underweight (< 18.5)	22	18.3
Normal (18.5 – 24.9)	14	11.7
Overweight (25 – 29.9)	43	35.8
Obese (30 or Higher)	41	34.2

Table 4. The obstetric history of the studied sample (n=120)

Items	Frequency	%
Gestational age (Weeks)		
12 – 14	49	40.8
15 – 17	30	25.0
18 – 20	41	34.2
Gravidity		
Primigravida	36	30.0
Multigravida	84	70.0
Complications during previous pregnancy (n=84)		
Yes	76	90.5
No	8	9.5
Type of complications during a previous pregnancy (n=76)		
Multiple gestations	12	15.79
Pregnancy-induced hypertension (PIH)	29	38.16
Abortion	17	21.37
Intrauterine fetal death	18	23.68

Table 5 Comparison of the Knowledge, Practices and Attitude levels between Pre – & Post – Intervention (n=120).

Items	Pre – Intervention		Post – Intervention		Chi-Square	
	n	%	N	%	X ²	P
Knowledge						
Poor Knowledge	62	51.7	15	12.5	58.432	<0.001**
Acceptable Knowledge	38	31.7	33	27.5		
High Knowledge	20	16.6	72	60.0		
Practice						
Unsatisfactory Practice	107	89.2	14	11.7	144.160	<0.001**
Satisfactory Practice	13	10.8	106	88.3		
Attitude						
Negative Attitude	57	47.5	17	14.2	82.265	<0.001**
Neutral Attitude	48	40.0	19	15.8		
Positive Attitude	15	12.5	84	70.0		

**Highly significant at p <0.01

Discussion

Preeclampsia is one of the most prevalent causes of preventable maternal and neonatal death and illness. (Lee et al., 2022; MacDonald et al., 2019). Therefore, the present study was carried out to examine the effect of video-assisted teaching programs on the knowledge, practices, and attitude of pregnant women at risk for preeclampsia. The finding of the current study revealed that Satisfactory Knowledge with highly significant after intervention. This revealed evidence concerning the efficacy of video-assisted teaching programs, its increased awareness of pregnant women related to pre-eclampsia disease, and will be given a chance for pregnant women's self-determination, resulting in a strong commitment to preventing pre-eclampsia behaviors.

These findings are in line with a study conducted by Bromfield et al., (2023), who reported that sufficient knowledge about risk factors associated with progression from a less to more severe hypertensive disorder during pregnancy. This could be a result of prenatal education enabling expectant mothers to recognize any warning signs and symptoms that could result in an early diagnosis and treatment of the illness, thereby averting complications and lowering morbidity and mortality. Another study by Parfenova et al. (2021) found that mothers' knowledge of the symptoms of childbirth risks increases when prenatal care is more widely available and women have higher levels of education.

This result was congruent with Gingras-Charland et al. (2019). They showed that the

control group's global knowledge score was considerably lower than the pregnant women who received instructional tools like brochures and videos. Also, These results link with a study conducted by Parsa et al. (2019) who demonstrated the efficacy of using a mobile-based educational application to increase pregnant women's awareness of the symptoms, signs, and complications of pre-eclampsia.

The current study's findings revealed that Satisfactory practice with highly significant after intervention, which matches the findings of a study conducted by Malone et al., (2022) who illustrated that Efforts should be made to identify earlier preeclampsia predictors to begin interventions before sixteen weeks.

The current study's findings revealed that the preeclampsia preventive behavior total practices score and attitude of pregnant women pre and one month after the intervention had improved to good practices for the majority of pregnant women. This matches the findings of a study conducted by Abd Elhaleem et al.,(2021) to demonstrate the significance and efficacy of introducing education through PRECEDE Mode, which is commonly associated with improving practice. This may be because intervention may increase pregnant women's self-determination, resulting in a strong commitment to preventing pre-eclampsia behaviors.

According to the findings of this study, the majority of pregnant women had a positive attitude following the intervention. According to the pregnant women's" attitudes toward pregnancy-induced hypertension, the majority of the sample

preferred to go to hospitals/clinics whenever they experienced various symptoms such as abdominal pains and headaches.

These results confirm that of **Kamal et al., (2020)**, who report that pregnant women's knowledge and practices regarding the prevention of preeclampsia were effectively improved in the intervention group as compared to the control group by the application of the health promotion model and self-determination theory-based intervention.

The current study's findings revealed that Pre- and post-intervention differences in women's overall preeclampsia knowledge, practices, and attitudes were highly statistically significant ($p < 0.001$). These findings were consistent with the findings of **Abd Elhaleem et al., (2021)**, who revealed that all study participants had adequate knowledge, a positive attitude, and good practices towards Preeclampsia. Our findings conflicted with those of **Chanda. (2023)**, who found that pregnant women lacked preventive practices, negative attitudes, and insufficient knowledge. This can be explained by the fact that efforts to lower maternal mortality are seriously hampered by video-assisted teaching programs.

Conclusions

It was determined based on the research's conclusions and hypothesis that, the hypothesis was accepted and then summarized Pregnant Women who received video-assisted teaching programs on preeclampsia prevention had higher post-test knowledge, practice, and attitude scores than in the pretest to prove this.

Recommendations

In light of the study's findings, the researchers recommended that:

- ✓ Applying video-assisted teaching programs to promote and improve their knowledge, practices, and attitudes among pregnant women at risk of preeclampsia.
- ✓ Suggest including video-assisted teaching programs among pregnant women at risk of preeclampsia in the nursing curriculum.
- ✓ Future research could replicate the current study in a different setting to allow for generalization.

References

- Abd Elhaleem Ebraheem Elagamy, M., Emad Eldien Hussien Sabbour, M., Kamel Yousef Ali, F., Ebrahim Ahmed, S., & A Shahin, M. (2021).** Effect of Nursing Intervention Guided by PRECEDE Model on Knowledge and Practice of Preventive Behavior of High-Risk Pregnant Women regarding Preeclampsia. *Egyptian Journal of Health Care*, 12(2), 1298-1314.
- Ahmed Mohammed Sabry, F., Ahmed Galal Atia, H., & Kamal Abd Elkhalek, N. (2021).** Effect of PRECEDE Model Educational Program on Nurses' Knowledge and Attitude toward Health Promotion of preeclampsia. *Egyptian Journal of Nursing and Health Sciences*, 2(2), 137-158.
- Akpor, O. A., Fadare, R. I., & Oziegbe, O. B. (2016).** Knowledge and attitude of pregnant women towards management of pregnancy-induced hypertension in Southwest Nigeria. *Journal of Advances in Medical and Pharmaceutical Sciences*, 11(2), 1-11.
- Ayed, A. Y., & Ibrahim, R. H. (2021, October).** Effect of Educational Program of Eclampsia Management on Knowledge of Maternity Nurses at Mosul Teaching Hospitals. In 1st International Ninevah Conference on Medical Sciences (INCMS 2021) (pp. 175-180). Atlantis Press.
- Balasubramanian, P., Shetty, O. P., & Rao, S. (2018).** Video-Assisted Teaching Module (VATM): developed for primary caregivers on home care of schizophrenic patient. *Nursing & Care Open Access Journal*, 5(6), 337-341.
- Bloom, B. S. (1968).** Learning for Mastery. Instruction and Curriculum. Regional Education Laboratory for the Carolinas and Virginia, Topical Papers and

- Reprints, Number 1. Evaluation comment, 1(2), n2
- Bromfield, S. G., Ma, Q., DeVries, A., Inglis, T., & Gordon, A. S. (2023).** The association between hypertensive disorders during pregnancy and maternal and neonatal outcomes: a retrospective claims analysis. *BMC Pregnancy and Childbirth*, 23(1), 1-10..
- Centers for Disease Control and Prevention.(2022).** Preeclampsia, Genomics and Public Health.
- Chanda, T (2023).** The Knowledge, Attitude and Beliefs about Pre-eclampsia and Eclampsia among Pregnant Women at Selected Antenatal Clinics in Kitwe. *Journal of Clinical Research*, 7(5), 194.
- Devi, B., Khandelwal, B., & Das, M. (2019).** Comparison of the effectiveness of video-assisted teaching program and traditional demonstration on nursing students learning skills of performing obstetrical palpation. *Iranian Journal of Nursing and Midwifery Research*, 24(2), 118.
- Ebrahimi, A., Abbood, E., Al Jobori, S. S., & Al Safi, W. (2019).** Knowledge About Pregnancy Induced Hypertension Among Pregnant Women Attending Gynecology and Obstetrics Teaching Hospital in Kerbala. *Kerbala Jorunal of Medicine*, 12(2).
- Fondjo, L. A., Boamah, V. E., Fierti, A., Gyesi, D., & Owiredo, E. W. (2019).** Knowledge of preeclampsia and its associated factors among pregnant women: a possible link to reduce related adverse outcomes. *BMC pregnancy and childbirth*, 19(1), 1-7.
- Garovic, V. D., Dechend, R., Easterling, T., Karumanchi, S. A., McMurtry Baird, S., Magee, L. A., ...& August, P. (2022).** Hypertension in pregnancy: diagnosis, blood pressure goals, and pharmacotherapy: a scientific statement from the American Heart Association. *Hypertension*, 79(2), e21-e41.
- Garovic, V. D., White, W. M., Vaughan, L., Saiki, M., Parashuram, S., Garcia-Valencia, O., ...& Mielke, M. M. (2020).** Incidence and long-term outcomes of hypertensive disorders of pregnancy. *Journal of the American College of Cardiology*, 75(18), 2323-2334..
- Gestational Hypertension and Preeclampsia: ACOG Practice Bulletin, Number 222.** *Obstet Gynecol.* 2020 Jun;135(6):e237-e260. [PubMed]
- Gingras-Charland, M. E., Côté, A. M., Girard, P., Grenier, A., Pasquier, J. C., & Sauvé, N. (2019).** Pre-eclampsia educational tool impact on knowledge, anxiety, and satisfaction in pregnant women: a randomized trial. *Journal of Obstetrics and Gynaecology Canada*, 41(7), 960-970.
- Hadian, T., Mirghafourvand, M., Mohammad-Alizadeh-Charandabi, S., Ghanbari-Homayi, S., Nahaeii, J., & Meedya, S. (2018).** The Effect of Prenatal Home Visiting for Adolescent Mothers on Maternal and Neonatal Outcomes: A Systematic Review and Meta-Analysis.
- Hassan, H. (2018):** effectiveness of a structured teaching program on anxiety among seropositive pregnant women. Available from: <http://researchgate.net>.
- Iqomatulhaq, H., & Solehati, T. (2019).** Healthy life behavior in pregnant women with risk of preeclampsia in the PHC of Ciparay Bandung district. *Journal of Maternity Care and Reproductive Health*, 2(1).
- Kamal Helmy, H., & El-Sayed Ibrahim, R. (2020).** Effect of Health Promotion Model and Self-Determination Theory Based Intervention on Preeclampsia Prevention among Pregnant Women at Beni-Suef Governorate. *Egyptian Journal of Health Care*, 11(3), 591-602.
- Karrar, S. A., & Hong, P. L. (2023).** Preeclampsia. In *StatPearls* [Internet]. StatPearls Publishing.
- Lee, K., Brayboy, L., & Tripathi, A. (2022).** Preeclampsia: A Scoping Review of Risk Factors and Suggestions for Future Research Direction. *Regenerative Engineering and Translational Medicine*, 8(3), 394-406.
- MacDonald, E. J., Lepine, S., Pledger, M., Geller, S. E., Lawton, B., & Stone, P. (2019).** Preeclampsia causing severe maternal morbidity—A national retrospective review of preventability and opportunities for improved care. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 59(6), 825-830.
- Maciejewski, M. L. (2020).** Quasi-experimental design. *Biostatistics & Epidemiology*, 4(1), 38-47.
- Magee, L. A., Brown, M. A., Hall, D. R., Gupte, S., Hennessy, A., Karumanchi, S. A., ...& von Dadelszen, P. (2022).** The 2021 International Society for the Study of Hypertension in Pregnancy classification, diagnosis & management recommendations for international practice. *Pregnancy hypertension*, 27, 148-169.
- Malone, S. L., Haj Yahya, R., & Kane, S. C. (2022).** Reviewing accuracy of first trimester screening for preeclampsia using maternal factors and biomarkers. *International Journal of Women's Health*, 1371-1384.
- Parfenova, M., Côté, A. M., Cumyn, A., Pesant, M. H., Champagne, M., Roy-Lacroix, M. È., ...& Sauvé, N. (2021).** Impact of an educational pamphlet on knowledge about health risks after hypertensive disorders of pregnancy: a

- randomized trial. *Journal of Obstetrics and Gynaecology Canada*, 43(2), 182-190.
- Parsa, S., Khajouei, R., Baneshi, M. R., & Aali, B. S. (2019).** Improving the knowledge of pregnant women using a pre-eclampsia app: a controlled before and after study. *International journal of medical informatics*, 125, 86-90.
- Patel, B. B., Gurmeet, P., Sinalkar, D. R., Pandya, K. H., Mahen, A., & Singh, N. (2016).** A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra. *Medical Journal of Dr. DY Patil University*, 9(3), 354-362.
- Phipps, E. A., Thadhani, R., Benzing, T., & Karumanchi, S. A. (2019).** Pre-eclampsia: pathogenesis, novel diagnostics and therapies. *Nature Reviews Nephrology*, 15(5), 275-289.
- Rana, S., Lemoine, E., Granger, J. P., & Karumanchi, S. A. (2019).** Preeclampsia: pathophysiology, challenges, and perspectives. *Circulation research*, 124(7), 1094-1112.
- Rastegari, Z., Yarmohammadian, M. H., Mohammadi, F., & Kohan, S. (2019).** A comprehensive home-care program for health promotion of mothers with preeclampsia: protocol for a mixed method study. *Reproductive health*, 16, 1-6.
- Safwat, A. M. (2018).** Effectiveness of a computer-based learning module on arterial blood gas interpretation among staff nurses in critical care units. *International Journal of Nursing Didactics*, 8(03).
- Shaheen, A. P. A. (2020).** Effect of Educational Program on the Knowledge of Nurses Caring for Women with Eclampsia and Pre Eclampsia
- Sinkey, R. G., Battarbee, A. N., Bello, N. A., Ives, C. W., Oparil, S., & Tita, A. T. (2020).** Prevention, diagnosis, and management of hypertensive disorders of pregnancy: a comparison of international guidelines. *Current Hypertension Reports*, 22(9), 1-10.
- Snead, C. M., Strassberg, E., Overcash, R., Stark, L., Paglia, M. J., Schulkin, J., & Jelin, A. (2020).** Obstetricians' knowledge and practices regarding the management of preeclampsia. *The Journal of Maternal-Fetal & Neonatal Medicine*, 33(17), 2970-2975.
- Turbeville, H. R., & Sasser, J. M. (2020).** Preeclampsia beyond pregnancy: long-term consequences for mother and child. *American Journal of Physiology-Renal Physiology*, 318(6), F1315-F1326.
- Ugurlu, M., Yavan, T., & Karasahin, K. E. (2021).** The Effect of an Education and Counseling Program on Maternal/Neonatal Outcomes in Pregnant Women at Risk of Preeclampsia. *Puerto Rico health sciences journal*, 40(3), 127-135.
- World Health Organization. (2018).** WHO recommendation: calcium supplementation during pregnancy for prevention of pre-eclampsia and its complications. World Health Organization.