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Research Article

## ASSESS KNOWLEDGE AND PERCEPTION OF NURSES REGARDING PRE-ECLAMPSIA

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**Abstract:**

**Background:** The maternal and child mortality and morbidity is a common health issue specially in economically developing countries due to pre-eclampsia. 40% of gestational mothers face delivery complications during their labour and preconception. Globally, 2-10% antenatal women are afflicted by preeclampsia. By (WHO) the prevalence rate of preeclampsia is seven time high in underdeveloped countries in comparison of developed countries

**Objectives:** (1) To assess the knowledge of nurses regarding pre-eclampsia. So that provision of awareness will be given for the prevention of pre-eclampsia.

(2) Assess perception related to preeclampsia among nurses.

**Material and Method:** In this descriptive cross-sectional study 103 nurses were selected with the varying years of experience to evaluate knowledge and perception by using a pre-validated self-administered questionnaire containing 19 preeclampsia related questions. Convenient sampling method was used for data assortment.

**Results:** Nurses in this research had average level of knowledge regarding preeclampsia knowledge of the participants were observed through different options with the frequency and percentage 55.3% of the participants were aware about the true cause of preeclampsia and 48.5% know about the nutrients required during pregnancy majority of the participants have poor perception only 17.5% participants strongly disagree at young women are not vulnerable to preeclampsia.

**Conclusion:** Nurses have insufficient knowledge about preeclampsia causes, diagnosis and treatment. There is need to organize the training programme for the nurses to enhance the knowledge and perception regarding preeclampsia. There is also need to educate nurses about the causes, effects and prevention of pre-eclampsia by means of workshops and seminars.

**Key word:** Preeclampsia, knowledge, perception, Nurses

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**INTRODUCTION:**

Pregnancy is a unique and exciting period of physical and psychological preparation for birth and parenthood. Pre-eclampsia is characterized by systolic blood pressure is more than 140mmHg and diastolic blood pressure is more than 90mmHg and proteinuria (>0.3g/24 h) with clinical manifestation after 20 weeks of gestation (Romuald et al., 2019). The main cause of pre-eclampsia is still under investigation. Women with pre-eclampsia have many sign and symptoms related to numerous organ system dysfunction in pre-eclampsia are headache, visual disturbances, severe hypertension, low oxygen saturation. Some risk factors of PE are first pregnancy (at advance age or less than 18 years of age), family history, personal history of PE, obesity, gestational diabetes and multiple pregnancies. Preeclampsia can lead to eclampsia and can cause negative fetal outcomes (Fondjo, Boamah, Fierti, Gyesei, & Owiredo, 2019).

The severe forms of the pre-eclampsia is critical for both mother and fetus which are frequently associated with complexities such as, hemolysis inflated liver enzymes and low level of platelet count (HELLP) syndrome, placenta disruption and eclampsia (Firoz et al., 2016). The incidence of pre-eclampsia occurs approximately 10% in Primi gravida and 20 to 25% in women with history of chronic hypertension (Raney et al., 2019).

The maternal and child mortality and morbidity is a common health issue specially in economically developing countries due to pre-eclampsia. 40% of gestational mothers face delivery complications during their labour and preconception. Globally, 2-10% antenatal women are afflicted by pre-eclampsia. By (WHO) the prevalence rate of pre-eclampsia is seven time high in underdeveloped countries in comparison of developed countries (Olaoye, Oyerinde, Elebuji, & Ologun, 2019).

The incidence rate in developing countries of pre-eclampsia is higher than developed countries due to inadequate quality of care to prevent from pre-eclampsia in these countries. Annually estimation ranges of preeclampsia in Nigeria is 2% to 16.7% with relatively 37,000 pregnant women dying because of pre-eclampsia. In Northern Nigeria 40% maternal deaths occur due to the deficit knowledge of health care workers and referral system (Olaoye et al., 2019).

Pre-eclampsia is one of the leading causes of maternal death in Pakistan. Many Studies showed that health care providers have inadequate knowledge

to the management regarding pre-eclampsia. According to World Health Organization (WHO) more than a decade ago MgSO<sub>4</sub> is a first line drug to treat the pre-eclampsia but in Pakistan in national essential drug list it included in 2007. Although these achievements have not come into practice and continuously a greater part of women have suffered from pre-eclampsia without acquiring lifesaving treatment (Sheikh et al., 2016).

Researches from the lower middle-income countries shows that women during their antenatal period have not routinely screened for high blood pressure. At the other hand Studies from the developing countries revealed that caregivers have inadequate knowledge about early screening and managing of pre-eclampsia. Inadequate knowledge of health professionals regarding pre-eclampsia play a vital role in slow reduction of mother and child mortality and morbidity (Buchmann, Stones, & Thomas, 2016).

Insufficient knowledge leads to poor decision making in emergency management of maternal health condition. Adequate knowledge is necessary to correctly identify the women with pre-eclampsia with or without severe features (Angelina, Kibusi, Mwampagatwa, & Ernest, 2020).

This study will give information about the baseline knowledge of pre-eclampsia and provide important recommendation to reduce the maternal death due to pre-eclampsia.

**Study Gap:**

Many studies have been done on knowledge of nurses about preeclampsia but there has never conducted any research on perception of nurses in Pakistan. There is also need to renew the knowledge of preeclampsia and also need to conduct the research at perception of nurses in Pakistan to explore the attention of nurse's perception of preeclampsia in Pakistan.

**Problem statement:**

In Pakistan, the nurses' perception about pre-eclampsia is always ignored. Pakistan has serious discrepancies in this regard due to lack of researchers' attention on the issue. Due to unawareness, certain complexities developed in treatment of the disease. This study is assumed to encounter all the problems regarding pre-eclampsia and its understanding with nurses.

**Significance of the study:**

After completion of this research, participants who participated in the study will have a better

understanding about the knowledge of pre-eclampsia its prevention, identification and risk factors of the pre-eclampsia. This research also give an opportunity to researcher that can improve his/her own understanding and academic performance. It will make able to the researcher to think beyond the one community for more generalized results.

#### Research objective:

The main objective of the research is to:

- ❖ Assess the knowledge of nurses regarding preeclampsia. So that provision of awareness will be given for the prevention of preeclampsia.
- ❖ Assess the perception related to preeclampsia among nurses in UOL Teaching hospital.

#### Research Question:

The study consisted on following question.

- What is the knowledge of nurses regarding preeclampsia?
- What is perception of nurses regarding preeclampsia?

#### Definitions:

##### Conceptual Definitions:

Pre-eclampsia is characterized by systolic blood pressure is more than 140mmHg and diastolic blood pressure is more than 90mmHg and proteinuria (>0.3g/24 h) with clinical manifestation after 20 weeks of gestation (Romuald *et al.*, 2019).

##### Knowledge:

Through experience or learning information or skills gained by an individual related to something. Knowledge involves the cognitive process of individuals (Oxford Dictionary, 2018).

##### Perceptions:

The ability of an individual to receive information and understand through physical sensation (Conaway, 2018).

##### Operational Definition:

##### Knowledge:

Level of familiarity of participants about preeclampsia. Rating scale calculated as follows: 1 correct answer turned into scored 1 and two incorrect answers turned into scored 0. The rating scale intended on the base of totally rating of 9 of questions, total maximum score= 9

If participants will give correct answer of question 7 out of 9 (75%) will lie in good knowledge. If participants will give correct answer of questions between 4 to 6 out of 9 (50%-74%) will be fall in moderate knowledge. if participants give answer of

questions between 0-3 out of 9 (less than 50%) will fall in poor knowledge.

##### Perception:

Aptitude to be aware of preeclampsia. Rating scale of the participant responses intended as follows: for every item there were four responses of strongly agree graded as 4, Agree graded as 3, Disagree graded as 2, and strongly disagree graded as 1. Total maximum grade= 40

If the participants gained 33-40(81-100%) score considered as good perception of nurses about preeclampsia. If participants gained 24-32(60-80%) score considered average perception regarding preeclampsia. If participants gained below 24(below 60%) score considered as poor perception about preeclampsia.

Good perception = 81%-100% = 33-40

Average perception = 60%-80% = 24-32

Poor perception = below 60% = below 24

#### LITERATURE REVIEW

In developing countries like Pakistan due to insufficient health care facilities and lack of seriousness of health care providers magnitude of this issue is yet to be identified. That is why it is necessary to check out the knowledge and perception of health care workers in order to resolve the problem of maternal health. This research article will be helpful in evaluating the knowledge and perception of caregivers about preeclampsia and will also try to put forward ways to make health care facilities better to achieve better maternal health. The study ought to investigate the knowledge, perception and lack of management in health care system related to this problem which will be help full for future researchers to form more concrete plans so that the concrete steps can be taken to eliminate pre-eclampsia.

In order to achieve the objectives of the research method of quantitative analysis will be used in which relationship between different variables will be studied to deduce the results. Many researchers have already pondered on this issue as maternal mortality is a big issue in many countries of the world.

A study was conducted about knowledge, perception and management of pre-eclampsia among healthcare workers in Nigeria where 37,000 women are dying annually due to pre-eclampsia. In order to collect data for the study different healthcare workers like nurses, physicians and medical specialists with volatile service years were chosen and method of questionnaire was used to get the desired results. Results of the study shows moderate knowledge of

pre-eclampsia with score of only 16.69 the reason was mainly gaps in knowledge due to inadequacy of training and lack of proper written guideline on pre-eclampsia management (Olaoye et al., 2019).

In 2020 Angelina et al., researched on knowledge on prevention and management of preeclampsia in Tanzania. She mainly used nurses as research subject because among all health care workers nurses have a critical role in prevention and controlling of preeclampsia. The study was interventional and nurses were selected to answer the self-administered questionnaire. Overall result of the study was not very hopeful as only half 51.2% nurses had sufficient knowledge about pre-eclampsia. These results showed the critical knowledge deficiency in nurses of maternal units of primary health care units and to resolve this situation proper and regular training of staff is required.

A study was explored by Sheikh et al., (2016) she analyzed the healthcare workers knowledge about pre-eclampsia in Pakistan. As pre-eclampsia is the reason of every ten maternal deaths in Pakistan and even though the process of its prevention is quite inexpensive and widely available as well. She used method of interview in order to collect data from the hospitals of rural Sindh. The result showed that the main reason of pre-eclampsia in Pakistan is stress, physical workload and financial restraints. Study results showed that most of the healthcare works knows about pre-eclampsia except from traditional maternal workers. But still due to gap in knowledge system of prevention is not strong enough. In order to prevent deaths from pre-eclampsia proper regular training of preeclampsia is needed for health care providers.

Williams et al., (2019) studied about the situation how to managing the pre-eclampsia at primary health care facilities in Bangladesh. The research was focused on a project of magnesium sulfate intermediation at primary care facilities. He used the method of retrospective record review to access the success rate of the project that how newly trained staff is handling the usage of magnesium sulfate for eclampsia and severe preeclampsia in primary case setting. Results showed the issues regarding accessibility and functionality of blood pressure devices as monitoring of blood pressure is important for supervision of pre-eclampsia.

Billah et al., (2021) researched on the capability of health care works in identifying and managing pre-eclampsia during prenatal check-ups in primary care services in Bangladesh. To collect research data

cross-sectional study was conducted in 26 primary health care units and 1560 primary health care workers were noticed using organized checklist and it was checked by study physicians for validations. The result showed the there were 9% of cases were hypertensive disorders of pregnancy. Women diagnosed with hypertensive disorder were more likely to be in danger of suffering from pre-eclampsia. The FWVs should be trained to assess the risk of pregnant women in order to prevent deaths from pre-eclampsia.

A study was conducted in Nigeria at knowledge and perception of health care providers. Results showed that perception of health care providers was positive towards preeclampsia. More than half of participants (67.3%) had high level of perception of preeclampsia. They denied that young women were not vulnerable to preeclampsia. Mostly participants disagreed at tetanus toxoid vaccine which help in reduction of risk of preeclampsia (Oley et al., 2019)

By analyzing data from these observations and other practical sources the researcher will try to find the reasons of lack of knowledge in health care providers and lack of proper training and facilities across the globes. Lack of knowledge, deficiency of financial resources and shortage of health care facilities seems to be the main reasons of higher maternal mortality rate researcher will try to analyze all of these aspects and will also try to suggest its solution as well.

## METHODS:

### 3.1 Study design:

A quantitative cross-sectional descriptive study design was used in this study.

### 3.2 Study setting:

The setting of this research study was University of Lahore Teaching Hospital.

### 3.3 Study population:

Target population for conducting the research was nurses of University of Lahore Teaching Hospital working in UOLTH.

### 3.4 Sample Size:

Sample size is calculated by using Solvin's formula

$$n = \frac{N}{1 + Ne^2}$$

n= Number of sample size, N= total population and e was margin of error

to use formula first solve the margin of error if a confidence level of 95% then margin error was 0.05% and target population which is use in this study was 140.

$$n = \frac{140}{1 + 140(0.05)^2}$$

$$n = \frac{140}{1 + 140(0.0025)}$$

$$n = \frac{140}{1 + 0.35}$$

Sample size calculated by Solvin's formula was 103.

**3.5 Sampling technique:**

Convenient, randomized sampling technique was used in sample selection.

**3.6 Inclusion and Exclusion Criteria:****Inclusion Criteria:**

- The inclusion criteria of my study was based on 100% nurses aged 22-55 years who are health care workers of UOLTH as they expressed the willingness of participation for the study were included after consent.
- Both male and females were included.

**Exclusion Criteria:**

Following population were excluded from the study:

- Those who refuse to take part in the study.
- Those who, don't show willingness to participate in this study and all other people of the UOL were excluded from the study.

**3.7 Research tool:**

The researcher used (SPSS) version 21.0 statistical software for data analysis and results were shown in charts, tables and figures.

**3.2 Data Analysis:**

The researcher used (SPSS) version 21.0 statistical software for data analysis and results were shown in charts, tables and figures.

**3.8 Ethical Considerations:**

The rules and regulations set by the ethical committee of University of Lahore were followed while conducting the research and rights of the research participants were respected.

- All information about participants kept confidential.
- Self-respect of all the respondents were kept intact and each participant given the right to withdraw yourself from the research process any time she wants.
- Permission was taken from University of Lahore Teaching Hospital and consent from signed before data collection of participants.

**3.10 Study Duration:**

This study was conducted from September 2021 to January 2022.

**RESULTS:****Demographic Characteristics**

According to table no.1 shows that the total population of participants was 103, in which 80.6% were female and 19.4% were male. Age group from 20-29 had high score of percentage of about 80.6% and from 30-39 had least score of percentage of about 19.4. out of 103 participants 59.2% were doing Generic Nursing, 33.0% were doing BScn and 7.8% were doing LHV.

**Table#01: Demographic data of the participants**

| Age group         | Frequency (f) | Percentage % |
|-------------------|---------------|--------------|
| 20-29             | 83            | 80.6         |
| 30-39             | 20            | 19.4         |
| 40-49             | 0             | 0%           |
| Gender            | Frequency(f)  | Percentage%  |
| Female            | 83            | 80.6         |
| Male              | 20            | 19.4         |
| Educational level | Frequency(f)  | Percentage % |
| GeneralNursing    | 61            | 59.2         |
| BSCN              | 34            | 33.0         |
| LHV               | 8             | 7.8          |
| Work experience   | Frequency(f)  | Percentage%  |
| 1-2 year          | 65            | 63.1         |
| 3-4 year          | 38            | 36.9         |



**Table#02: Respondent's knowledge towards preeclampsia**

| S/N | Variables   | (f) | (%)   | Total (%)        |
|-----|---|-----|-------|------------------|
| 1.  | <b>What is preeclampsia?</b><br>Pregnancy specific disorder with high blood pressure        | 88  | 85.4% | (103f)<br>(100%) |
| 2.  | <b>What population is affected by preeclampsia?</b><br>pregnant women                       | 61  | 59.2% | (103f)<br>(100%) |
| 3.  | <b>What trimester of pregnancy is affected by pre-eclampsia</b><br>3rd Trimester            | 36  | 35%   | (103f)<br>(100%) |
| 4.  | <b>Blood pressure considered to be hypertensive</b><br>140/90MMHg                           | 67  | 65%   | (103f)<br>(100%) |
| 5.  | <b>What are symptoms of preeclampsia</b><br>Blurry vision                                   | 68  | 66%   | (103f)<br>(100%) |
| 6.  | <b>What physiological change that can cause pre-eclampsia</b><br>Pregnancy, protieninuria   | 57  | 55.3% | (103f)<br>(100%) |
| 7.  | <b>What nutrients required in diet to prevent pre-eclampsia</b><br>Vitamin C and Folic acid | 50  | 48.5% | (103f)<br>(100%) |
| 8.  | <b>What complication of Pre-eclampsia could the pregnant woman face?</b><br>Convulsions     | 62  | 60.2% | (103f)<br>(100%) |
| 9.  | <b>What are the screening tests for the prediction of Pre-eclampsia?</b><br>Urine analysis  | 61  | 59.2% | (103f)<br>(100%) |

**Table#03: Respondents perception regarding preeclampsia**

| Variables  | Strongly agree f(%) | Agree f (%)   | Disagree f (%) | Strongly disagree f (%) |
|--|---------------------|---------------|----------------|-------------------------|
| Preeclampsia is not a serious of severe condition?             | 16<br>(15.5%)       | 28<br>(27.2%) | 34<br>(33%)    | 25<br>(24.3%)           |
| Young women are not susceptible to preeclampsia?               | 22<br>(21.4%)       | 32<br>(31.1%) | 31<br>(30.1%)  | 18<br>(17.5%)           |
| Convulsion during pregnancy is hereditary.                     | 21<br>(20.4%)       | 25<br>(24.3%) | 29<br>(28.2%)  | 28<br>(27.2%)           |
| Tetanus toxoid vaccine reduces risk of onset of pre-eclampsia? | 27<br>(26.2%)       | 24<br>(23.3%) | 32<br>(31%)    | 20<br>(19.4%)           |

|  |               |               |               |               |
|--|---------------|---------------|---------------|---------------|
| Pre-eclampsia can be prevented?  | 36<br>(35%)   | 45<br>(43.7%) | 14<br>(13.6%) | 8<br>(7.8%)   |
| It is the duty of only pregnant women to prevent pre-eclampsia?  | 18<br>(17.5%) | 36<br>(35%)   | 31<br>(30.1%) | 18<br>(17.5%) |
| Expecting mothers should not be educated on the risk factors of pre-eclampsia?                                     | 20<br>(19.4%) | 29<br>(28.2%) | 23<br>(22.3%) | 31<br>(30.1%) |
| Up to date trainings will improve the knowledge and management practices of health care providers on preeclampsia? | 33<br>(32%)   | 33<br>(32%)   | 25<br>(24.3%) | 12<br>(11.7%) |
| It is the primary duty of health care provider to prevent preeclampsia?  | 29<br>(28.2%) | 37<br>(35.9%) | 25<br>(24.3%) | 12<br>(11.7%) |
| Preeclampsia has no cure?  | 22<br>(21.45) | 20<br>(19.4%) | 38<br>(36.9%) | 23<br>(22.3%) |

Table#02(B)

| Knowledge   | Mean | Median | Mode | Std. Deviation |
|---|------|--------|------|----------------|
| What is pre-eclampsia?  | .89  | 1.00   | 1    | .441           |
| What population is affected by preeclampsia?                      | .50  | 1.00   | 1    | .670           |
| What trimester of pregnancy is affected by pre-eclampsia?         | .20  | .00    | 0    | .677           |
| Blood pressure considered to be hypertensive?                     | .52  | 1.00   | 1    | .752           |
| What are symptoms of pre-eclampsia?                               | .50  | 1.00   | 1    | .827           |
| What physiological change that can cause pre-eclampsia?           | .40  | 1.00   | 1    | .745           |
| What nutrients required in diet to prevent pre-eclampsia?         | .18  | .00    | 1    | .872           |
| What complication of Pre-eclampsia could the pregnant woman face? | .41  | 1.00   | 1    | .798           |
| What are the screening tests for the prediction of Pre-eclampsia? | .43  | 1.00   | 1    | .762           |

Table#03(B)

| Perception   | Mean | Median | Mode | St. Deviation |
|--|------|--------|------|---------------|
| Pre-eclampsia is not a serious of severe condition?  | 2.34 | 2.00   | 2    | 1.015         |
| Young women are not susceptible to preeclampsia?   | 2.56 | 3.00   | 3    | 1.016         |
| Convulsion during pregnancy is hereditary?   | 2.38 | 2.00   | 2    | 1.095         |
| Tetanus toxoid vaccine reduces risk of onset of pre-eclampsia?   | 2.56 | 2.00   | 2    | 1.082         |
| Pre-eclampsia can be prevented?  | 3.06 | 3.00   | 3    | .895          |
| It is the duty of only pregnant women to prevent pre-eclampsia?  | 2.52 | 3.00   | 3    | .979          |
| Expecting mothers should not be educated on the risk- factors of pre-eclampsia?                                    | 2.37 | 2.00   | 1    | 1.111         |
| Up to date trainings will improve the knowledge and management practices of health care providers on preeclampsia? | 2.84 | 3.00   | 3    | 1.007         |
| It is the primary duty of health care provider to prevent preeclampsia?  | 2.81 | 3.00   | 3    | .981          |
| Preeclampsia has no cure?  | 2.40 | 2.00   | 2    | 1.060         |

### DISCUSSION:

The study was held to assess the knowledge and perception of nurses regarding preeclampsia. The research held on the nurses of University of Lahore Teaching Hospital Lahore aimed at investigating the level of knowledge, awareness and perception of nurses about preeclampsia. To cure Pre-eclampsia on time in order to protect the lives of mother and child nurses should know that at which trimester of pregnancy mothers show symptoms of pre-eclampsia. As collected data shows that most of the participants was unaware that pre-eclampsia symptoms occur during 3<sup>rd</sup> trimester of pregnancy as only 35% participants know about the exact trimester. And most participants 55.5% give wrong answer as they chose the option of 2<sup>nd</sup> trimester and 14.6% participants choose 1<sup>st</sup> trimester as a period when pre-eclampsia symptoms occur. These findings were relate to a study was conducted by (Olaoye et al., 2019) in Maternity hospital among health care providers at knowledge and perception in which only 45% participants know about what trimester is affected by preeclampsia.

Results revealed poor knowledge of the nurses regarding preeclampsia in this study majority of the

participants 57% have moderate knowledge about the preeclampsia 11.7% have poor knowledge in this study and 31% have good knowledge about the preeclampsia. Hence, overall perception of the nurses regarding preeclampsia was concluded 4% participants have good perception regarding preeclampsia 70% of the participants have moderate perception and remaining 25% participants have poor perception about preeclampsia.

In order to cure pre-eclampsia, it's important to know about its physiological causes. As Pakistani women don't care much about the nutritional factors of diet during pregnancy mostly due to poor economic situation. Most of the participants (55.3%) were aware of the true cause of pre-eclampsia as they choose proteinuria but 29% participants choose the wrong answer of decrease in cardiac output. In order to prevent pre-eclampsia to occur in mothers certain nutrients should be added in their diets. Due to lack of proper knowledge only 48.5% participants choose the right option of vitamin C and Folic acid. And 21.4% participants choose the option of Vitamin A and 30.1% participants choose Aspirin which is wrong answer and had nothing to do with the cure of pre-eclampsia.



To sum up this discussion we can say that there is need to educate nurses about the causes, effects and prevention of pre-eclampsia by means of workshops and seminars. As most of the knowledge of nurses have no solid grounds and they don't know about the pre-eclampsia in detail, that's why they are unable to educate pregnant women about its complications. In Pakistan our health care system is very weak and there are need to train and educate health care staff properly. Especially in rural areas of Pakistan due to general lack of health care systems there is need to form remote health care units who can educate women about maternal health care and how to prevent diseases like pre-eclampsia in order to reduce number of maternal deaths.

### CONCLUSION:

This study shows that nurses had average knowledge about the nutritional factors during the pregnancy. It's shocking that only half of the participants know about the specification of pre-eclampsia that it is a disease that occurs during pregnancy. They have poor perception about young women are not susceptible to preeclampsia. Years of experience was associated the knowledge and perception of preeclampsia most of the participants were new with 1 to 2 years of experience. These results give information that indicate the need of training about the knowledge of preeclampsia for nurses. There is also need of educational interventions to promote the nurses perception regarding preeclampsia.

### Recommendations:

- Regular training should be organized to enhance the knowledge of nurses regarding preeclampsia risk factors its management and how to prevent the women from its complications.
- Addition of education to the pregnant women during their antenatal visits.
- Other studies are needed to figure out the impact of training sessions of nurses regarding the knowledge and their perceptions and management applications of preeclampsia.

### LIMITATIONS:

This research has some limitations. It was held only in hospital in University of Lahore Teaching Hospital as a result of limited resourcefulness. So, results can neither be generalized beyond the one hospital. So, this is a cross sectional study we cannot draw inference in the combination found in the study.

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