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# MIDWIVES' PERCEPTIONS OF PREECLAMPSIA SCREENING

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**Abstract**

**Background**: Preeclampsia-related maternal mortality is a persistent issue globally, including in Indonesia. The International Federation of Gynecology and Obstetrics (FIGO) recommends universal preeclampsia screening in obstetric services. In Indonesia's NTT Province, pregnant women are screened based on guidelines in the MCH book. Sikka Regency mandates midwives to use the KSPR and MCH manuals for risk factor screening In 2022, 154 out of 9,685 screened pregnant women exhibited signs of preeclampsia risk factors. Despite the reduction in maternal deaths in Sikka Regency, the number of deaths directly linked to preeclampsia increased from one in 2021 to four in 2022. Notably, at Watubaing Public Health Center, two cases of maternal death were specifically attributed to preeclampsia. This underscores a significant gap in midwives' perceptions and clinical practices, elevating maternal mortality risk. This study explores midwives' perceptions of preeclampsia screening. **Method:** Qualitative research with a phenomenological approach at Watubaing Public Health Center involved three informants selected through purposive sampling, meeting the inclusion criteria. Data collection, conducted from April to July 2023, comprised in-depth semi-structured interviews that were subsequently analyzed thematically. **Results:** Midwives' expressed divergent opinions Midwives' expressed divergent opinions Midwives have different opinions. They still use the KSPR for pre-eclampsia screening and the pre-eclampsia screening guidelines in the KIA book.on preeclampsia screening, yet a consensus prevailed on its crucial importance. **Conclusion:** Midwives' perceptions of preeclampsia screening in ANC services are significantly shaped by internal and external factors, including knowledge and experience.

**Keywords:** *Perception, Midwife, Preeclampsia Screening, Antenatal Care.*

## INTRODUCTION

Maternal deaths attributed to preeclampsia represent a critical global challenge, particularly pronounced in Indonesia, where the Maternal Mortality Rate (MMR) remains the highest in Southeast Asia. This stark reality contradicts the Sustainable Development Goals (SDGS) target of reducing the MMR to 183 per 100,000 live births by 2024 and less than 70 per 100,000 live births by 2030. Addressing this challenge necessitates strategic efforts, demanding an annual decrease of at least 5.5% in maternal death (Kemenkes 2020).

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Maternal mortality cases in Indonesia, notably in the East Nusa Tenggara Province (NTT), have witnessed a significant upswing in the past two years. Sikka, a district in NTT, has experienced an overall decline in maternal deaths, but specific causes, such as eclampsia, have shown a notable increase. Eclampsia has emerged as the primary cause of maternal mortality in Sikka, with two out of four cases reported at the Watubaing Public Health Center (Laporan Kematian Ibu 2022)

Efforts to combat preeclampsia in Sikka, particularly at the Watubaing Community Health Center, reveal an escalating trend, with 21 cases reported in 2022 out of 68 pregnancies with complications (LB2S 2022). The surge in global and Indonesian preeclampsia cases has prompted heightened research and debates. The International Federation of Gynecology and Obstetrics (FIGO) recommends the universal adoption of preeclampsia screening in obstetric care practices (Poon et al. 2019)

Initiatives in Indonesia include screening pregnant women during Antenatal Care (ANC) using guidelines from the Maternal and Child Health (MCH) book and the Poedji Rochjati Score Card (KSPR). However, essential screening measures, such as Mean Arterial Pressure (MAP) and Body Mass Index (BMI), remain lacking in many healthcare facilities and Private Midwife Practices (PMB) (Susanti et al. 2022). Research conducted by K Jayanti on 53 midwives working in 19 health centres in Gresik Regency Implementing the screening programme Preeclampsia screening programme still not optimal (Jayanti 2021)

Research by (Khodijah and Lumbanraja 2021) reveals a gap in midwives' proficiency in differentiating between hypertension categories during pregnancy, impacting the timely detection of preeclampsia. A qualitative study by Ansari et al. emphasizes the gap in midwives' perceptions and clinical practices related to preeclampsia detection and management, heightening the risks of maternal and perinatal mortality (Ansari et al. 2019). This research aims to provide a concise overview of midwives' perceptions regarding preeclampsia screening at the Watubaing Public Health Center in Sikka Regency.

## METHOD

This qualitative study employs a phenomenological design to explore the experiences of midwives conducting preeclampsia screening at the Watubaing Public Health Center in Sikka Regency.

Data were obtained through in-depth interviews, with each session lasting between 22-40 minutes conducted in April 2023. Additional data collection through telephone interviews occurred in August 2023. The sampling technique used was purposive sampling, with three participants selected based on specific inclusion and exclusion criteria.

Inclusion Criteria: a) Midwives employed at the Watubaing Community Health Center, b) Minimum educational qualification of a Diploma III (DIII) in Midwifery, c) Currently active midwives providing maternity care services at the Watubaing Public Health Center, d) Work experience exceeding 10 years, e) One Midwife Coordinator, f) Two Midwife Practitioners with the following specifications: one midwife with documented cases of maternal mortality due to preeclampsia in her working area, and one midwife with no recorded maternal mortality in her working area.

Exclusion Criteria: Exclusion criteria include midwives who meet the inclusion criteria but exhibit specific conditions requiring their exclusion from the study. This may include midwives who refuse to participate as informants during the research period. The data analysis techniques used involved transcribing verbatim data, coding, categorizing, developing thematic contexts, and interpreting data.

## RESULT AND DISCUSSION

### 1. Participants' characteristics

The participants' ages ranged from 35 to 50 years old. All three participants had a Diploma III (DIII) in Midwifery as their latest education level. The length of work experience as midwives varied, with one participant having 13 years of experience, another with 15 years, and the third with 27 years. All participants had additional tasks, such as being the Head of Polindes (Integrated Service Post), and one also served as the Midwife Coordinator and Quality Team Leader. The

interviews took place in different locations, namely the Head of the administration department Room and the Head of the Public Health Center Room, on April 29, 2023. The duration of each interview ranged from approximately 22 to 40 minutes. (Table.1)

**Table 1. Overview of the participants of the study**

| Code | Interview Location | Research Date | Time and Duration | Age (years) | Last Education | Length of Work as a Midwife (years) | Additional Tasks |
|---|---|---|---|---|---|---|---|
| I01 | KTU Room | 29-04-2023 | 08.00-08.40 a.m and 40.51,37 minutes | 35 | Diploma III in Midwifery | 13 | Head of Polindes (Pos Pelayanan Terpadu) |
| I02 | KTU Room | 29-04-2023 | 09.00-09.22 a.m and 22.15,67 minutes | 37 | Diploma III in Midwifery | 15 | Head of Polindes (Pos Pelayanan Terpadu) |
| I03 | Coordinating Midwife | 29-04-2023 | 10.00-10.40 a.m and 40.34,50 minutes | 50 | Diploma IV in Midwifery | 27 | Midwife Coordinator, Quality Team Leader |

The research findings have successfully identified three overarching themes and fourteen sub-themes derived from in-depth interviews, aligning with the research problem and objectives.

**Table.2 Theme Analysis**

| Theme | Sub Theme |
|---|---|
| 1. Overview of Midwive's Regarding Preeclampsia Screening Activities | 1) Information sources related to preeclampsia screening<br>2) Screening guidelines used during the first antenatal visit (K1) for pregnant women.<br>3) Competence in identifying risk factors.<br>4) Reasons for not conducting preeclampsia screening in accordance with the Maternal and Child Health Booklet (MCH) Screening Guidelines.<br>5) Flow of management if risk factors are identified.<br>6) Midwives' opinions on preeclampsia screening. |
| 2. Factors influencing informants in implementing preeclampsia screening in antenatal care. | 1) Policy considerations<br>2) Motivation. |

| | | |
|---|---|---|
| 3. | The Midwives' Perception of Preeclampsia Screening | 1) Knowledge about Preeclampsia Screening<br>2) Experience with Preeclampsia Screening<br>3) Training on Preeclampsia Screening |

**2. Overview of Midwive's Regarding Preeclampsia Screening Activities**

**1) Information sources related to preeclampsia screening**

The information sources are diverse, including human resources, books, journals, the internet, observation, experiments, and interviews. Crucial information from entities such as the health department should be carefully considered regarding reliability, validity, and relevance to the tasks and antenatal services at health centers. In this study, it was found that information about preeclampsia screening was disseminated during the Maternal and Child Health (MCH) book utilization socialization activities conducted by the health department team, both at the district and health center levels (I 01/I 02/ I 03).

> *"I recall hearing about it during a Health Department event where they were promoting the use of the MCH book. There was also a time when the Health Department team visited during maternal death audits, and they discussed the screening"* (I 01, I 02, I 03).

Certain information sources may have specific interests or biases that can influence screening guidelines. Information sources relevant to the condition or population being screened are crucial. Irrelevant information may lead to guidelines that do not align with the specific screening needs (Rahayu 2018)

**2) Screening guidelines used during the first antenatal visit (K1) for pregnant women**

The Preeclampsia Screening Score Card (KSPR) functions as a family-based antenatal screening tool to identify risk factors in pregnant women, aiding in early condition recognition and preventing complications during childbirth. Structured with a combination format, integrating a checklist of maternal conditions/risk factors with a scoring system, the KSPR was developed as a simple, easily acceptable technology intended for non-professional healthcare providers (Rochjati 2011). However, the KSPR has not yet become the standard reference for preeclampsia screening. Developing countries, particularly in primary healthcare services during ANC visits, prioritize patient identity assessments over preeclampsia screening, without strict adherence to guidelines (Kurniati Ayu 2022)

Differing opinions among midwives regarding preeclampsia screening guidelines were found in this study. Midwives who prefer the KSPR as an initial guide find it simpler (I 01).

> *"For new pregnant mothers on their first visit, I initially refer to the Poedji Rochyati Score Card (KSPR). However, I find the scoring in Puji Royati's version simpler"* (I 01).

Additionally, according to midwives, each primigravida undergoes anamnesis and preeclampsia screening following the guidelines in the Maternal and Child Health (MCH) Book, offering a comprehensive package during ANC (I 02/I 03).

> *"Upon admission, we conduct anamnesis right away. From the anamnesis, we follow the MCH book. We perform screening through its format, specifically taken from the MCH book for preeclampsia screening" (I 02).*
> *"So, for a first-time pregnant mother, the initial healthcare contact includes a complete examination, including screening according to the guidelines in the MCH book" (I 03).*

The Federation of International Gynaecology and Obstetrics (FIGO) recommends that all countries include pre-eclampsia screening in antenatal care. This aligns with FIGO's recommendation for global implementation of preeclampsia screening in midwifery practice (Poon et al. 2019). Despite the same observed object, different perceptions among midwives' stem from various factors, including the preeclampsia screening guideline. Healthcare providers' compliance perceptions are influenced by sensory perception, resulting in diverse understandings and interpretations. In this context, midwives' differing perceptions relate to early condition identification and diagnosis for preventing preeclampsia using various screening guidelines.

**3) Competence in identifying risk factors.**

Efforts to reduce the morbidity and mortality of preeclampsia can be achieved through active screening for risk factors. Unfortunately, a significant number of midwives struggle to convey the complete criteria for moderate and severe risk factors leading to preeclampsia, as outlined in the Maternal and Child Health (MCH) Book guidelines. Midwives can accurately identify 2 out of 7 known high-risk factors, but information on moderate-risk criteria is often omitted. This

discrepancy contradicts the risk factor criteria in the preeclampsia screening guidelines of the MCH Book (Kementerian Kesehatan RI 2022). The criteria for risk factors leading to preeclampsia, embedded in the MCH Book, serve as a screening guideline, and it is expected that all healthcare providers can identify them.

> *"From what I know, it might be related to blood pressure. If the blood pressure is possibly over 140. Then maybe the previous pregnancy, perhaps with symptoms of hypertension or high blood pressure. Also, with the previous childbirth. That too, if she had a history of obstetrics that wasn't good, along with the lab results. Usually, we recommend pregnant women have their first check-up, where we can check for urine protein and examine her. That's where we can categorize it as moderate. If it's high, it might be calculated from... um... I forgot the term, something like arterial pressure or something... ummm... maybe it's calculated from there, then it can be determined. But for the ones before that, honestly, we only rely on their blood pressure" (I 01).*

Another midwife conveys information about 2 out of 9 moderate risk factors and 2 out of 7 high-risk factors, albeit not in detail. The midwife also emphasizes collaboration with doctors when such cases are identified. This aligns with the management flow of preeclampsia screening, where if a pregnant woman has at least 2 moderate risk factors or 1 high-risk factor, referral is initiated. Healthcare professionals are expected to identify and control preeclampsia risk factors to enable primary prevention (US Preventive Services Task Force et al. 2017) Seventeen factors proven to increase the risk of preeclampsia, as outlined in the MCH Book's preeclampsia screening page, were gathered from several studies.

> *"Usually, we look at the screening. During anamnesis, we assess if there are causes, such as if she is multiparous, then her age is over 35 years, chronic hypertension, and then if her mean arterial pressure is above ninety. For diseases, hahahaha... ummmm... for preeclampsia, if she is already diagnosed with hypertension. Hypertension is indicated by a diastolic reading above ninety, and if the measurement is done twice with a one-hour interval. Usually, if we find such a case, we proceed to collaborate with a doctor for blood and urine tests" (I 02).*

Another midwife responds that she cannot categorize due to her long career, expressing reliance on the KSPR criteria. If midwives cannot accurately perform early detection, cases of preeclampsia are often discovered too late and in severe conditions, leading to maternal and fetal mortality.

> *"In that case, it's not about how many, but it's been a long time. It's just that in the MCH book, there is a section, I don't remember which page, but there's a sheet there, maybe it's yellow or white, if I'm not mistaken. I don't remember. In that section, there are several questions related to preeclampsia screening for mothers. One of them is whether the mother complains of a headache or dizziness, then asked about how. Basically, there are several questions we use for screening. Several cases of preeclampsia have occurred like that. The mother is already too old. The mother is old. And she has more than 4-5 children. That's the first. The second is due to stress factors" (I 03)*
>
> .

**4) Reasons for not conducting preeclampsia screening in accordance with the Maternal and Child Health Booklet (MCH) Screening Guidelines.**

To reduce the incidence of preeclampsia, screening is crucial for all pregnant women during Antenatal Care (ANC), following guidelines provided in the Maternal and Child Health (MCH) Book or the Poedji Rochjati Score Card (KSPR) as a general risk detection tool (Kementerian Kesehatan RI 2022). While preeclampsia screening is essential in health facilities based on the MCH Book, many healthcare facilities and Private Midwife Practices (PMP) fail to implement Mean Arterial Pressure (MAP) and Body Mass Index (BMI) measurements in preeclampsia screening (Susanti, Yani, and Yudianti 2022)

A qualitative study by Ansari et al. found a striking gap in midwives' perceptions and clinical practices in detecting and managing preeclampsia across various health facilities, increasing the risk of maternal and perinatal mortality (Ansari et al. 2019). In this study, it was also observed that a significant number of midwives do not adhere to preeclampsia screening guidelines for various reasons. These include an overwhelming workload with repeated record-keeping and screening activities causing fatigue, ultimately leading to non-compliance with established procedures. Some midwives avoid using preeclampsia screening guidelines because they find the assessment items confusing and time-consuming to register. Additionally, the repetition of cohort and SOAP formats further extends the process, and the overall busyness of village midwives hinders consistent implementation.

> *"In the book, to be honest, at first, I was confused about the assessment items that had to be done like that. And what made it time-consuming is that they forget we have to ask slowly. Moreover, with the human resources there,*

*some are not educated enough, so the understanding of the discussion is slow. When asked, it takes a while for them to answer, and then they quickly write. After that, they still have to fill in all the data because this filling is not just for one book. There's the register, and then there's the cohort. There's another format like SOAP. The writing is the same, but it has to be transferred from one to another. That's what makes it take a long time" (I 01).*

*"It's possible. We, who work under these midwives, maybe haven't fully reached the maximum potential to conduct screening according to the format in this book. Because sometimes it's due to busyness" (I 03).*

**5) Flow of management if risk factors are identified**

Procedures for preeclampsia screening indicate that if at least 2 moderate-risk factors or 1 high-risk factor are identified, pregnant women should be referred (Kementerian Kesehatan RI 2022). In this study, a common perception was found among all midwives that collaboration and referral are necessary when risk factors are identified (I 01/I 02/I 03).

*"Usually, if we find such a case, we proceed to collaborate with a doctor for blood and urine tests" (I 02).*

*"In every case, whether it's a mild or severe preeclampsia, consultation is usually done. If it's my duty, I will monitor it, and if necessary, I recommend immediate consultation with a specialist doctor. I also involve them in education" (I 03).*

*"I haven't done screening like this before. I have never referred based on this screening. Most of the time, if I find high blood pressure during my blood pressure check, then I refer" (I 01).*

**6) Midwives' opinions on preeclampsia screening.**

Preeclampsia screening is mandatory for all pregnant women undergoing antenatal examinations, with primary healthcare facilities conducting simple screenings through anamnesis and physical examinations (Rochjati 2011). This aligns with the guidelines recommended by FIGO, outlining global standards for preeclampsia screening in the first trimester, targeting healthcare providers such as doctors, midwives, and nurses (Poon et al. 2019). In this study, it was found that all midwives consider preeclampsia screening a supported and obligatory method for healthcare professionals, including midwives, doctors, and nurses.

*"In my personal opinion, and probably all my colleagues feel the same way. I think it's necessary. It's not just for us midwives but can also apply to doctors and nurses. It's good to be socialized to all healthcare providers. It's more focused on midwives, though" (I 01).*

*"I think it's excellent. If all midwives use screening as a guideline" (I 02).*

**7) Training on Preeclampsia Screening**

Training plays a crucial role in influencing preeclampsia screening, where comprehensive and in-depth training assists healthcare professionals, such as midwives and doctors, in gaining a better understanding of the symptoms, signs, and risk factors of preeclampsia. It enables them to operate and interpret the results of medical tools used in screening, following official guidelines and protocols for preeclampsia screening, including the recommended frequency of screening during pregnancy.

Additionally, through training, professionals can determine the necessary actions if preeclampsia is detected, such as closer monitoring, treatment, or pregnancy management. This also encompasses effective communication skills to explain screening results to patients, provide advice, and help them understand the importance of closer monitoring if preeclampsia is suspected (Ansari et al. 2019). With proper training, healthcare professionals can enhance their ability to conduct preeclampsia screening, ultimately aiding in the early detection of preeclampsia, improving care, and reducing the risk of serious complications during pregnancy.

In this study, it was found that all midwives conveyed that they have not received specific training on preeclampsia screening from the Health Department. Instead, they only received information during socialization sessions conducted by the Health Department, particularly during Maternal Mortality Audits (AMP) and socialization on the use of the latest Maternal and Child Health (MCH) Book.

> *"But specifically for screening, there has been no training. I heard about it once, if I'm not mistaken, from someone from the health department. There was an activity related to the new MCH Book at that time" (I 01).*
> *"For specific training on preeclampsia screening, we have never had it. We only received socialization from the coordinator about how to fill out the MCH Book, and there is a section on preeclampsia screening, but it's done by doctors in the MCH Book. Also, when there are activities at the village clinic, if I'm not mistaken, three times I heard there were visits from the health department" (I 02).*
> *"If talking about training, it has never happened. It was explained about the use of the latest MCH Book, and there was socialization about filling out the MCH Book. Inside it, there is a sheet about preeclampsia screening" (I 02).*

### 3. Factors influencing informants in implementing preeclampsia screening in antenatal care.

#### 1) Policy considerations

Government policies regarding the use of preeclampsia screening guidelines, especially those found in the Maternal and Child Health (MCH) Book, have a significant impact on midwives' perceptions and implementation of screening. Currently, there is variation in policies and guidelines for detecting risk factors, affecting the implementation of preeclampsia risk factor anamnesis by midwives. Several challenges have been identified, such as disagreements among relevant institutions regarding the use of preeclampsia screening guidelines in the MCH Book, insufficient socialization to midwives, and informants' confusion about existing risk factor detection guidelines.

The use of preeclampsia screening guidelines is still scattered, with midwives feeling confused due to the lack of agreement on their use. High workloads and the lack of standardization by the Health Department in establishing preeclampsia screening guidelines pose challenges. Although some midwives agree with the policy of using preeclampsia screening in the MCH Book, there is still confusion and a lack of understanding about these guidelines. This indicates the need for further efforts to socialize, clarify, and support the implementation of this policy.

> *"I must admit that for preeclampsia screening, we are confused. There's the Pudjiroyati score, 18 screenings, MCH. What the Health Department standardizes, we don't know. Up to now, there's no clarification from the department to the community health centers. Even among us midwives, some don't know. Honestly, I'm not very familiar with this screening" (I 01).*
> *"There's no specific SOP for screening; we just refer to the MCH Book. It would be great if all midwives follow the screening guidelines. It seems it's not too late. Hahaha" (I 02).*
> *"In my opinion, it's good. I hope all first-trimester pregnant women undergo screening because in the MCH book, there are numerous questions. If, from the beginning, we know that it aligns with the format, it means our management is clear" (I 03).*

#### 2) Motivation

A midwife's practice in providing maternity services, especially in anamnesis of preeclampsia risk factors, is significantly influenced by motivation

and supervision from the coordinating midwife. Motivation is a psychological factor that can impact performance (Fatkhiyah 2015). Motivation is a driving force that compels someone to take action to achieve goals (Notoatmodjo, S 2018). Understanding motivation needs to be based on the assumption that motivation is a positive influence and a determinant of work performance. In the context of healthcare services, work motivation determines the direction of behavior in the workplace and the level of self-mastery in overcoming obstacles, making it crucial in determining job performance (Fahmi 2020). In this study, it was found that motivation from the coordinating midwife regarding antenatal care and the detection of risk factors is consistently communicated. During every meeting, information is provided, and encouragement is given to all midwives to implement screening for pregnant women. However, direct supervision in the village clinics (polindes) regarding the actual implementation of preeclampsia screening guidelines during antenatal care is not evenly distributed among all midwives.

> *"There is no specific training for preeclampsia screening, only general information about pregnant women with PEB is frequently conveyed" (I 01).*
> *"The motivation from our coordinator is always there... always detect risk factors, no matter what... during meetings and even during visits to village clinics, sometimes we call the coordinator if we find risk factors, and if we can't handle it, the coordinator usually comes down to help us. As for specific training on screening, I attended it once at the integrated service post (posyandu) but with someone from the health department at that time" (I 02).*
> *"So, during every regular meeting at the primary health center or sub-district level, or during midwife meetings, we always convey to village midwives and midwives at the health center that we should conduct screening for every pregnant woman. We don't wait for formal training. I share my knowledge with them. So, the knowledge is always transferred to them. Thus, it's not just me who knows, but they also know" (I 03).*

## CONCLUSION AND SUGGESTION

The knowledge of midwives is influenced by reliable sources of information, experience, and in-depth training, playing a role in shaping their attitudes and practices in conducting preeclampsia screening. In this context, the availability of clear guidelines and support from health authorities can enhance motivation and the effectiveness of using these guidelines. Internal and external

factors, including supportive policies, also play a crucial role in shaping perceptions of preeclampsia screening in antenatal care.

To enhance understanding and the implementation of preeclampsia screening, further efforts are required, such as disseminating and providing comprehensive training to midwives on the use of preeclampsia screening guidelines in the Maternal and Child Health (MCH) book. Additionally, the socialization and clarification of policies and guidelines related to preeclampsia screening need to be intensified by relevant authorities to ensure consistent usage. The development of specialized training programs for midwives is also crucial, emphasizing practical aspects and the development of communication skills needed in antenatal care.

**Declaration :**

**Conflict of Interest**

Author declare there is no conflict of interest in this research

**Authors' Contribution**

All author contribute from concept until writing draff article.

**Ethical Approval**

Research Ethics Committee of Faculty o Medicine, Universitas Airlangga. No.90/EC/KEPK/FKUA/2023

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**Data Availability**

The data supporting this research are available from the authors on reasonable request.

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