

Evaluating the Quality of Screening Process for High-Risk Pregnancies in Paser District, East Kalimantan

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KEYWORDS

Quality, High Risk
Pregnancy, Screening

ABSTRACT

Health service programme success is measured by maternal mortality. There have been efforts to reduce maternal and neonatal fatalities. Field observations suggest that high-risk pregnancy referral rates are still low, delaying access to better services. Screening for high-risk pregnancies is an operational technique to prevent maternal and newborn emergency issues by allowing early treatment and referral planning. Health cadres and personnel can provide quality information. Lack of knowledge and awareness will harm society, especially pregnant women, in dealing and seeking health care. This study uses descriptive methods to assess high-risk pregnancy screening in Paser Regency, East Kalimantan, by collecting individual data and watching written and verbal behaviour. This research is qualitative and phenomenological. Health workers, ob-gyns, GPs, and pregnant women were informants. The data was collected through interviews from November to December 2023. The research found that high-risk pregnancy screening was still poor due to lack of knowledge, understanding, staff, time, site, and community culture. This research aims to improve high-risk pregnancy screening in Paser Regency, East Kalimantan Province, so that the policy can become permanent and help the planned referral process by motivating, socialising, training health cadres, and requiring cross-sectoral and cross-program support.

1. Introduction

Indonesia has a relatively high maternal mortality rate compared to other nations in Asia. According to the 2022 data from the Ministry of Health of the Republic of Indonesia, the maternal death rate in Indonesia stands at 183 per 100,000 live births. The Long Form SP2020 by Province conducted by the Central Statistics Agency indicates that the rate has risen to 189 per 100,000 live births, with the latest data available as of 18 July 2023 (BPS, 2023). According to the East Kalimantan Health Office (2021), there has been an upward trend in the Maternal Mortality Rate in East Kalimantan Province. In 2019, there were 79 cases of maternal death, and this number increased to 92 cases in 2020.

The government has implemented several programmes to decrease maternal and infant mortality rates. These initiatives include the Safe Motherhood Initiative (1990), the Mother Care Movement (1996), Making Pregnancy Safer (2000), Expanding Maternal and Neonatal Survival (2012), Millennium Development Goals (2000), and Birth Waiting House (Kurniawan, Sistiarani & Hariyadi, 2017). This endeavour is backed by multiple community institutions, in partnership with various sectors and also receives support from several other developing nations. The desired outcomes have not been achieved thus far, particularly in more isolated regions (Widiastuti, et.al, 2014).

The persistently high maternal mortality rate is attributed to a combination of direct and indirect factors. According to the progress records, the accomplishments of the millennium development include bleeding, eclampsia, problems caused by high blood pressure during pregnancy, delayed labour, infections, and complications after miscarriage (Liabsuetrakul et.al, 2018). Various factors contribute to adverse conditions during pregnancy in pregnant women, including anaemia, pregnancy complications, and the presence of comorbidities such as diabetes, malaria, hypertension, and 4T (too young, too old, too close, and too many children) (Subasinghe, et.al, 2014).

One of the underlying causes of maternal mortality is the failure to diagnose pregnancy early, which leads to high-risk pregnancies in women. According to the World Health Organisation (WHO), it is crucial to identify high-risk factors early on during pregnancy through prenatal care (Ante Natal care).

This is done to decrease maternal death rates and to closely monitor the well-being of the foetus in the uterus. Early and regular detection during pregnancy allows for immediate identification of any abnormalities in both the mother and the foetus. This enables prompt treatment to be administered before any complications or emergencies arise for the mother or newborn (Wiknjastro, 2006; Namsyah Baso, et al, 2024).

The management of early detection of high-risk pregnancies involves the implementation of planning, guidance, and supervision/monitoring activities by community health centres. However, there are several obstacles that hinder this process, such as insufficient standard operating procedures, a low ratio of midwife coverage per population, and a low ratio of midwives per population. It is not in conformity with. Therefore, it necessitates the aid and guidance of healthcare professionals who serve as an expansion of the community, working alongside health services and community health centres within their respective jurisdictions. Cadres serve as agents responsible for implementing health development initiatives at the grassroots level (Ramadhan, Maradindo, Nurfatimah & Hafid, 2021). Healthcare professionals, particularly midwives and health cadres, have the potential to contribute to enhancing the overall health condition of the population through both promotional and preventive measures. Cadres possess the power to identify and document the presence of risk factors in pregnant women, thereby enabling them to report and suggest regular check-ups to healthcare professionals. Additionally, cadres can recommend that pregnant women give birth under the supervision of healthcare workers and provide guidance on subsequent medical interventions (Murni, 2020).

The presence of healthcare professionals and medical personnel in the operational region of Paser Regency, East Kalimantan, remains crucial to actively contribute to the government's initiative in reducing maternal death rates. However, data from the Public Health Division of the Health Office Paser Regency in 2022 indicates that the Maternal Mortality Rate in Paser Regency, East Kalimantan is 98.2 per 100,000 live births, resulting in 5 maternal deaths. Furthermore, it is projected that the Maternal Mortality Rate will increase by 11 cases in 2023 (Public Health Division of the Health Office Paser Regency, 2024). In addition, there are other phenomena in the field that indicate that maternal deaths result from delays in referring patients to health service facilities, so preventing the patient's condition from being salvaged. The occurrence of this problem can be reduced to a minimum by ensuring the implementation of high-risk pregnancy screening activities, with the assistance of healthcare professionals, midwives, and health cadres. This study aims to assess the effectiveness of screening methods for identifying high-risk pregnancies in Paser Regency, East Kalimantan. The findings will offer recommendations for improving the sustainability of the programme, with a particular focus on enhancing the involvement of healthcare professionals and community health workers in early screening for high-risk pregnancies, thereby reducing maternal mortality rates.

2. Methodology

This study applied a qualitative research methodology that adopts a phenomenological approach to investigate the effectiveness of high-risk screening for pregnancy in Paser Regency, East Kalimantan. The objective is to uncover the inherent characteristics and attributes of this screening process. The informants in this research consisted of 5 health cadres, 2 obstetrics and gynaecology experts, 1 general practitioner, and 2 pregnant women. The data collection method employs in-depth interviews, specifically by conducting them directly and in person. The interviews had a duration ranging from 45 to 60 minutes. The study was carried out over the months of November and December in 2023. The selection of informants was contingent upon their capacity to respond candidly to questions that were formulated in accordance with the researcher's predetermined criteria. An interactive model is utilised in the process of analysis, as described by Miles and Huberman (Herdiansyah, 2011). There are four stages, including: (1) data collection, starting from pre-field, while in the field (research), and after research; (2) data reduction, which is the processing of data into writing for data interpretation; (3) data display, which is the presentation of data in the form of short narratives which are then interpreted based on the setting of the problem being discussed; and (4) conclusion withdrawal, referring to confirmations

and draw conclusions to provide accurate results based on research questions.

3. Result and Discussion

Description of the Conditions of the Research Site

Paser Regency is situated in the southernmost part of the East Kalimantan Province, within the geographical coordinates of 0°48'29.44"-2°37'24.21" South Latitude and 115°76'0.77"-118°1'19.82"E. It is located at a height ranging from 0-500 metres above sea level. The total area of the region is approximately 11,603.94 square kilometres, which is divided into 10 sub-districts, each containing 5 sub-districts and a total of 139 villages. The eastern region is characterised by a predominantly flat terrain that stretches from north to south. In the southern part of the region, there is a larger expanse of wetlands and waterways. On the western side, the terrain is characterised by undulating hills and mountains, extending up to the boundary of South Kalimantan and Central Kalimantan Provinces.

High Risk Pregnancy Screening Quality Interview Results

High-risk pregnancies can be identified through regular monitoring throughout the course of pregnancy. Health workers, particularly those in the healthcare field, possess the necessary authority to conduct screenings and identify potential risk factors during pregnancy. They are responsible for accurately documenting the information of pregnant women who exhibit these risk factors, and subsequently reporting their findings and suggesting regular check-ups to other healthcare professionals. Information on cadres' knowledge regarding high-risk pregnancies was obtained through in-depth interviews with posyandu cadre informants:

"As far as I know... a high risk pregnancy is... ee... a pregnancy with a mother's condition that has risks... dangerous disorders when the mother is pregnant..." (Mrs. TA, cadre, 49 years old).

"In my opinion...ee...pregnancy is dangerous for the mother and fetus...if I'm not mistaken...that's what I remember, sis..." (Mrs. SM, cadre, 30 years old).

"In my opinion, pregnant women are at high risk, it could be said to be more related to the mother's existing condition... an abnormal condition during pregnancy... something that threatens the life of the mother or baby, that is... ee... more precisely, sis... which is not normal..." (Mrs. E, cadre, 33 years old)

The interviews with cadres regarding their understanding of high-risk pregnancies resulted in unsatisfactory results. While the cadre informants were able to provide explanations about high-risk pregnancies, their responses lacked the necessary level of detail and precision. Researchers have raised questions about the fundamental knowledge that cadres need to possess when conducting high-risk pregnancy screening in pregnant women:

"As for the basic knowledge that cadres must have, sis, we must first know what the basics of a normal pregnancy are, then from there we will know what the risks are then..." (Mrs. T. Kader, 51 years old).

"Usually we are knowledgeable about checking weight scales, measuring weight and height, especially to reduce stunting rates, but for training we don't know what this is called..." (Mrs. TA, cadre, 49 years old).

"For me, regarding standard basic knowledge, I am still lacking because there is still a lot of knowledge that I need to improve regarding this activity, for example regarding early detection of risks, for example from blood pressure if there is anemia, but more than that we don't know..." (Mrs. E. Kader, 33 years old)

Following an extensive interview regarding the fundamental knowledge required for cadres to perform high-risk pregnancy screening in pregnant women, the informants reached the conclusion that the

current level of basic knowledge possessed by cadres is significantly inadequate. The gathered information is based on in-depth interviews conducted with posyandu cadre informants, focusing on their roles and attitudes as cadres in relation to screening for high-risk pregnancy:

"In my opinion yes... the cadres go door to door to pregnant mothers, to collect data on pregnancy checks" (Mrs. TA, cadre, 49 years old).

"Screening seems to be more about...ee..collecting data on the number of children and the spacing of pregnancies"(Mrs. SM, cadre, 30 years old).

"In my opinion, screening for high-risk pregnant women is more like an early pregnancy check... such as checking weight and height at the beginning and even that is rare"(Mrs. E, cadre, 33 years old)

There is a lack of understanding of the responsibilities and mindset of cadres when doing high-risk screening during pregnancy. Currently, their knowledge is restricted to only conducting first prenatal tests, and these examinations are not comprehensive. The researchers have posed questions regarding the activities performed by cadres during pregnancy exams and have obtained the following information:

"As usual, sis... initially I weighed the pregnant woman, measured the circumference of the upper arm... the same thing... helped the midwife on the opening day of the posyandu..." (Mrs. TA, cadre, 49 years old).

"That's usually how it is... the activities start from preparation, registration, checking body weight, measuring the upper arm circumference of pregnant women... then taking notes..."(Mrs. SM, cadre, 30 years old).

"Our activities as cadres are... helping with pregnancy checks starting from measuring height, weight, upper arm circumference, the same thing... taking notes"(Mrs. E, cadre, 33 years old)

In response to inquiries on the activities performed by cadres during pregnancy checks, it can be stated that they are generally doing these checks within the scope of their power as cadres and providing assistance in documenting the findings of pregnancy tests. Researchers have raised questions about the actions performed by cadres, particularly in conducting screening for high-risk pregnancies. The following information was gathered in response to these inquiries:

"For pregnancy screening activities, what we do is activities at the beginning of the examination... at the beginning, it is more related to the problem of gestation, so for pregnancy there is no risk, sis, so the program is not carried out as it should be, so at most it is only at the beginning, such as socializing activities so that she eats nutritious food during pregnancy, reducing MSG, that's all, sis."(Mrs. TA, cadre, 49 years old).

"it seems like No" Yes, sis... sorry, I don't know about that... just helping carry out pregnancy check-up activities at the posyandu..."(Mrs. SM, cadre, 30 years old).

"As for the implementation, it's because we never... more precisely, didn't specify or didn't focus on the activity..."(Mrs. E, cadre 33 years old).

Regarding inquiries concerning the actions performed by cadres, particularly in the implementation of high-risk pregnancy screening, it is evident that cadres lack comprehension and fail to consistently execute routine high-risk pregnancy screening. The activities conducted during posyandu opening hours mostly involve doing early pregnancy tests and assisting with routine pregnancy checks. Additionally, counselling services are provided to pregnant women, as reported by the pregnant mother informants:

"I was given a leaflet, sis. It contained something about risky pregnancies... yesterday I got material about maintaining distance during pregnancy, height, limiting age during pregnancy."(Mrs. D. Pregnant mother, 26 years old)

"I was once told by the cadre's mother during a pregnancy check-up at the posyandu...yes...it was about a history of illnesses such as high blood pressure or sugar, that's what sis"(Mrs. L. Pregnant Mother, 32 Years)

Pregnant women are typically provided with literature and counselling during pregnancy checkups at the posyandu to inform them about the elevated risks associated with pregnancy. The information offered by these individuals is insufficient, resulting in a lack of comprehensive understanding among pregnant women regarding high-risk pregnancies.

The researcher's inquiries regarding the goal and significance of screening for high-risk pregnancies, as per the cadre's interview, are as follows:

"Yes, it seems necessary, so that high-risk things don't happen and can't be handled... sorry, I don't know about that..."(Mrs. SM. Kader, 30 Years)

"It's necessary, ma'am, because we don't understand... what we will do in the field and convey it to pregnant women, yes... the point is so that the pregnancy can run smoothly until the birth is also smooth, everyone is healthy... that's how it is, ma'am..."(Mrs. TA. Kader, 49 years old).

"For its purpose, it is definitely very useful for pregnant women... so that it will be easier to identify problems or dangers that occur during pregnancy."(Mrs. E, cadre 33 years old).

Through the administration of questionnaires to cadres regarding the aim and significance of high-risk screening during pregnancy, it has been seen that, on the whole, cadres possess a comprehensive understanding of the objectives of screening for pregnancies at high risk. However, the lack of awareness and understanding among cadres about high-risk pregnancy screening and its implementation has hindered the seamless and regular execution of screening operations.

Counselling by professionals (cadres) is essential for pregnant women as it enables them to independently identify and comprehend potential complications or issues during pregnancy that may pose risks to both the mother and foetus. This aligns with the statements provided by pregnant women informants, as follows:

"Yes, it's very helpful, because I mean people who don't know, lay people, it's very helpful because if we don't know what the characteristics are like, then we think it's at home, oh, this is just normal, but with early detection, we can know when "We have to immediately go to a doctor or a health facility... we can detect for ourselves if there are risks, for example at home, that we don't know about."(Mrs. D. Pregnant mother, 26 years old)

"It is very helpful because with this counseling, especially pregnant women, I can control it early so that risky pregnancies do not occur."(Mrs. L. Pregnant Mother. 32 Years)

Meanwhile, it is imperative to implement a screening programme for pregnancies at high risk, as advised by ob-gyn specialists and general practitioners working in the Paser Community Health Centre area. This programme should be consistently coordinated with healthcare professionals.

"cadres must be given an explanation beforehand... counseling so far has not gone well... for example regarding stunting, there has been a lot of counseling for cadres about this problem(Dr. Y. Specialist in ob-gyn and gynaecology).

"Several things must be paid attention to in its implementation, especially in refreshing material for cadres so that there is no miss information. Cadres also need to always coordinate with local health workers in accordance with the existing program, then an evaluation of the program is carried out. Cadres must be given a workshop/training or provide materials so they can carry out and provide education to the community. "As for standard procedures or references, I myself have never seen or known" (Mrs. N. General Practitioner)

According to the obstetrics and gynaecology specialist, the majority of referrals in the Paser Regency region were made late. This means that pregnant patients were already in a critical situation by the time

they arrived at the referral location, and unfortunately, they could not be rescued:

"There are quite a lot of ob-gyn doctors in Paser district... but the problem is that the referral rate for high-risk pregnancies is still low... health workers, for example... midwives, these cadres don't understand about high-risk pregnancies and the importance of appropriate and planned referrals... so, referrals who arrive at the hospital are already in bad condition..sometimes there has been a rupture, the baby has died, pregnant women have narrow pelvises, PEB, sometimes seizures have occurred and infections have occurred...(Dr. Y. Ob-Gyn Specialist).

"In the Paser Regency area..ee..it has 1 government hospital, there are no private hospitals and many small clinics owned by midwives..because of the long distances, high risk pregnancies are usually handled at home and in these clinics..so this makes referral for high risk pregnancies becomes late. When he arrived at the hospital the patient's condition was already in bad condition." (Mrs. N, general practitioner)

According to the statements of obstetrics-gynecology specialists and general practitioners in the Paser Regency area, it can be inferred that the rate of referring high-risk pregnancies is still insufficient, and the level of understanding among healthcare workers regarding high-risk pregnancies is also inadequate, resulting in delays in referring patients to healthcare facilities.

The researchers have identified questions regarding the barriers and obstacles to implementing high-risk pregnancy screening. These questions were conveyed by cadre informants:

"The obstacle is, for example, Miss, we haven't had any kind of training provided by the community health center... I think it's still normal."(Mrs. T. Kader, 51 years old).

"The obstacle is that there is no special training related to this program so we don't know much about early detection or screening for high risk pregnancies, ma'am..."(Mrs. SM. Kader, 30 Years)

"The obstacle, for example, is that for example, our lady, there hasn't been any kind of training held by the community health center... "In my opinion, it's still just normal" (Mrs. TA. Kader, 49 years old).

Meanwhile, experts in obstetrics and gynaecology, as well as general practitioners, have identified the challenges associated with implementing high-risk pregnancy screening:

"Yes, there are quite a lot of obstacles, firstly the cadres who want to be involved voluntarily are very limited, secondly it will definitely be related to their time, well their time is also related to sometimes some are already working and some are not working so we really have to be smart in choosing time for those things..."

And...in my opinion, the most important cadres are PKK women who are the main priority for cadres both in the sub-district, at the sub-district level, at the village level, it is important for PKK women to become cadres, because there is no other choice, there must be program attachment in the sub-district, in the sub-district, including programs in the district, there will definitely be activities at the posyandu, so to produce a workforce to produce qualified cadres, that's quite a challenge, it will definitely be related to the problem of sometimes their transport costs being a problem too, well that's if it's not allocated for "These activities will actually result in suboptimal outcomes later."(Mr. M, ob-gyn specialist)

"In terms of obstacles, especially in the Paser area itself, one of them is that the place is far away... the village is far away... it is difficult to reach, which might hinder health services, especially for pregnant women who are at risk."(Mrs. Y, ob-gyn specialist)

"Obstacles related to the implementation of this program include varying terrain or access in each health facility, especially those in remote areas which are difficult to reach, certain customs, habits and beliefs that exist in the community, so that the presence of these cadres helps health workers in increasing early detection of high risk pregnancies."

"It takes time to prepare counseling for both health workers who provide counseling and those who receive counseling, but this is needed to upgrade the knowledge and information needed to provide quality health services." (Mrs. N. General Practitioner)

There are several challenges associated with implementing early detection screening for high-risk pregnancy. These include a shortage of volunteer cadres, remote living locations with limited transportation facilities, and difficulties in accessing healthcare due to strong cultural beliefs and customs. The presence of health workers and health cadres is crucial for enhancing early detection of high-risk pregnancies. This can be achieved through effective collaboration and close cooperation with all relevant stakeholders.

The researcher aims to address the challenges associated with implementing a high-risk pregnancy screening program. According to the informant, their question revolves around enhancing readiness for this program:

"I don't know, ma'am. For myself, I'm a housewife, so I don't have any knowledge about screening for high-risk pregnancies... if perhaps another friend of mine is a midwife, it's possible that she already has the readiness, she already has the basic knowledge, that's what I think." (Mrs. Y. Kader. 38 years old)

"I'm not ready because I haven't been trained yet." If I had more knowledge or if we were given knowledge both in terms of action and socialization of activities regarding early detection of risky pregnancies, the cadres would be ready to carry out these activities" (Mrs. E. Kader, 33 years old)

"Readiness is in the form of having basic knowledge about risky pregnancies by taking part in training about pregnancy with village cadres"...we the cadres...yes we do it because we carry out activities together" (Mrs. TA. Kader. 49 years old).

There is a lack of readiness among cadres when it comes to high risk pregnancy screening. This is primarily due to a lack of knowledge and insufficient training. This sentiment is shared by the majority of health cadres who serve as informants.

DISCUSSION

Every woman will inevitably undergo pregnancy, which is a natural physiological state. However, at any point, this state can transition into pathology, which refers to complications or disorders that occur with pregnancy. Pregnancies in which pregnant women have conditions that lead to illness or death before giving birth are referred to as high-risk pregnancies. Failure to promptly identify and address the underlying factors contributing to high-risk pregnancies can jeopardize the well-being of both the mother and the baby, perhaps leading to maternal and fetal mortality (MYR Anandita and I. Gustina, 2021).

The health status of pregnant women during pregnancy is a crucial determinant of the progression of the pregnancy process. Emergency situations can arise at any point throughout pregnancy, including the early, middle, or late stages, as well as before to childbirth. Within society, there persists a multitude of views that regard pregnancy as a commonplace occurrence, inherently natural, and hence negate the necessity for routine pregnancy evaluations conducted by healthcare professionals. Consequently, there is a significant likelihood of pregnancy going undetected in its early stages, leading to subsequent delays. (Angraini, E. et al, 2017).

Prenatal screening is a proactive measure aimed at identifying and managing complications in pregnant women at a higher risk (L. Darwati, V. Fatmawati, and I. Susila, 2022). The primary objective of this early screening initiative is to mitigate any potential difficulties that may arise during pregnancy, labor, and the postpartum period. The presence of healthcare professionals such as midwives and health cadres can enhance the accuracy of screening for pregnancies at high risk, increase the standard of healthcare services, and ultimately decrease maternal mortality rates. Having well-trained midwives and health cadres can contribute to addressing the health issues of pregnant women by conducting data

collection to identify high-risk pregnancy cases, documenting and reporting information, and providing health education during pregnancy (DI Angraini, et al, 2017).

Health workers, particularly health cadres, demonstrated inadequate understanding of high-risk pregnancies in this study. However, there is still a significant deficiency in fundamental understanding of the process of identifying high-risk pregnancies. One's knowledge and comprehension are only confined to the topic of pregnancy in a broad sense. Cadres assist in doing first pregnancy examinations, while incomplete examinations support the midwife's responsibilities during posyandu opening days. This does not align with the theory that outlines the role of health cadres, which involves assisting health workers in raising public awareness about health, facilitating access to health services, monitoring adherence to treatment and health conditions, serving as a link between health workers and other social services, and facilitating communication between health workers and the community (Restanty & Purwaningsih, 2020).

This study's result aligns with the studies conducted by Suhartini in 2019 and Fathoni in 2012, which found that the knowledge and awareness of health cadres regarding high-risk pregnancies is generally inadequate, ranging from approximately 43.8% to 50%. Lack of comprehension and expertise can subsequently impact the dissemination of accurate and reliable information, particularly with the screening of high-risk pregnancies in the region. Multiple factors contribute to this phenomenon, such as age, education, and employment (Suhartini, 2019; Fathoni, 2012).

Health cadres actively monitor the development of pregnancy and provide health education, particularly emphasizing pregnant women's awareness of the elevated risks associated with pregnancy. Nevertheless, this research highlights the deficiency in providing pregnant women with comprehensive education of the substantial perils associated with pregnancy. Education is imparted through the distribution of leaflets, and counseling typically takes place during prenatal examinations at the posyandu. The information offered by these individuals is insufficient, resulting in a lack of comprehensive understanding among pregnant women regarding high-risk pregnancies. This occurs due to the insufficient comprehension and expertise of the cadres.

The incidence of referrals for high-risk pregnancies in Paser Regency remains low due to expectant women's inadequate comprehension of high-risk pregnancies. This leads to delays in the process of referring patients to health treatment facilities. Various challenges arise from the scarcity of volunteer health workers, the rural nature of the living areas, inadequate transportation infrastructure, limited accessibility, and the community's deeply ingrained cultural habits, rituals, and beliefs. The presence of health professionals, midwives, and health cadres is crucial for enhancing the early identification of high-risk pregnancies, namely through effective collaboration and close cooperation with all relevant stakeholders.

This finding aligns with the research conducted by Kurniawan (2017), which states that midwives have the responsibility of conducting early identification of high-risk pregnancies. This includes collaborating with local cadres to disseminate information about pregnancy issues in the community, as well as playing a significant role in conducting anamnesis and pregnancy examinations (Kurniawan et al., 2017). Midwives and doctors have a significant role in achieving good health outcomes. According to Ximba's (2012) research, midwives are the primary healthcare providers at the primary care level. In addition, midwives have the responsibility of advocating for natural childbirth, identifying and preventing difficulties in both the mother and baby at an early stage, and arranging suitable referrals when needed (Ximba et al., 2021).

The findings of this study align with the research conducted by Ederson (2013) in Usman (2022), which emphasizes the continued necessity for training and support for all healthcare professionals in the local region to actively conduct screenings for high-risk pregnancies. This enables them to make well-planned and high-quality referrals to appropriate healthcare services based on the patient's condition. The responsibilities of cadres in early pregnancy screening include conducting urine tests, providing basic education, referring individuals to more suitable healthcare institutions, and offering information

on safe abortion and family planning (Usman et al., 2022).

The primary objective of training, provision, and socialization activities is to enhance the knowledge, comprehension, and expertise of cadres in alignment with relevant authorities and policies. Enabling health professionals to conduct screenings for high-risk pregnancies and manage prenatal risk factors necessitates collaboration from various stakeholders, such as the government, private sector, and community. This collaboration should include both moral encouragement and financial assistance. The reason for this is that cadres serve as more than just an extension of health workers. They are regarded as a link between the health center and the community, enabling them to reach a broader population. Health cadres in the community can initiate the process of high-risk pregnancy screening. This screening helps identify individuals who require specialized medical attention. They can then refer these individuals to appropriate healthcare professionals in their vicinity, such as midwives, nurses, doctors, community health centers, or hospitals.

Health service programs rely on community participation and foster a collaborative partnership to greatly impact the success of health initiatives. Efficient utilization of community partnerships is crucial for health workers to effectively deliver healthcare services. They need to possess the necessary skills to comprehend and work alongside community members, fostering positive transformations, particularly in the area of health (Desmarnita and Hasnani, 2023).

This research uncovered a lack of preparedness, particularly among cadres, to conduct high-risk pregnancy screening. This lack of readiness was attributed to a lack of knowledge and inadequate training obtained by the cadres. Almost all health cadres who were interviewed expressed this sentiment. This research contradicts the findings of Retna (2020), who concluded that cadres are prepared and eager to perform tasks such as measuring height, weight, upper arm circumference, completing the Poedji Rochjati Score Card (KSPR), offering counseling to individuals and groups, and providing assistance to pregnant women. This is accomplished by reminding individuals of their visit schedules, medication taking schedules, and conducting screenings in their residential area by completing the KSPR sheet. According to a study conducted by Retna P. et al. in 2022, nearly all of the 116 cadres (80.2%) successfully performed early diagnosis of pregnancy-related high risk.

The screening for high risk pregnancies in Paser Regency, East Kalimantan is generally of low quality. This is evident from the low referral rate of high risk pregnant women. Additionally, health cadres lack knowledge and understanding of high risk pregnancies and screening methods. Other obstacles include a limited number of volunteer health cadres, remote living locations, difficult transportation, and challenging access. Furthermore, cultural habits, customs, and community beliefs strongly influence the situation. The presence of cadres is crucial in facilitating health workers to enhance early identification of high-risk pregnancies through collaboration and close cooperation with all relevant stakeholders. The process of identifying high-risk pregnancies necessitates the active participation of several societal entities within the local community, including health personnel, medical practitioners, and governmental authorities. Enhancing the proficiency of public health personnel in identifying warning signs and complications during pregnancy, along with the engagement of local personnel and midwives in educating and motivating the community, particularly pregnant women, to be more attentive to their pregnancy condition and facilitating suitable and high-quality referrals, will lead to a decrease in maternal and infant mortality rates.

4. Conclusion and future scope

In conclusion, the government is actively working to expedite the decrease in maternal mortality rates. Their approach involves screening for high-risk pregnancies, promptly addressing pregnancy complications, and ensuring quality referrals. The risk approach to pregnancy is a practical strategy aimed at reducing morbidity and mortality by improving effectiveness and efficiency. This is achieved through the provision of education and support to pregnant women, as well as involving health cadres and workers in the community. The goal is to identify and prevent emergencies and complications in both mothers and babies at an early stage. Ensuring the effectiveness of cadres and health workers in

their crucial role of providing quality information and education is of utmost importance in screening for high-risk pregnancies. In order to address this issue, it is imperative to enhance the knowledge and understanding of health cadres in the field of screening for high-risk pregnancies. This will enable midwives and health workers to effectively contribute towards reducing maternal and infant mortality rates. One way to achieve this is by organizing regular training sessions and outreach programs.

Authors' contribution

MDT, SS, MW, S and **ANF** designed the study. **MDT** served as principal investigator of the study in Paser District. **MDT** analyzed and wrote the first draft of the manuscript. **SS, MW, S** and **ANF** contributed to the development or revision of study instrument, and reviewed the manuscript by providing the scientific oversight. Hence, **all authors** read, edited and approved the final manuscript.

Conflict of interest

The authors declare that no financial or commercial relationships that might be construed as a potential conflict of interest existed during the course of the research.

Funding

None

Acknowledgement

The present authors of this study gratefully acknowledge the valuable support provided by Universitas Sebelas Maret, Surakarta.

Availability of data and materials

Once de-identified, the dataset used and/ or analyzed during the current study will be available from the corresponding author on reasonable request

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