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ANALYSIS OF HEALTH SERVICE PROVIDERS INFLUENCE ON THE IMPLEMENTATION OF PREECLAMPSIA SCREENING PROGRAM AT PRIMARY HEALTH CARE IN GRESIK REGENCY OF INDONESIA

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ABSTRACT

Background: District Health Office of Gresik Regency has made various efforts in reducing Maternal and Infant Mortality Rate, one of which is by establishing screening program of preeclampsia. Implementation of preeclampsia screening program is still not running optimally, it can be known from the case of preeclampsia is still the main cause of maternal mortality in Gresik Regency, in addition the number of preeclampsia events tend to increase during the last three years. This suggests that there are problems with the implementation of screening programs for preeclampsia. One factor which preeclampsia affect the implementation of the screening program is a health care provider. This study aims to analyze the effect of the quality of health care providers on the implementation of screening programs for preeclampsia.

Materials and methods: This research was an observational analytic study with cross sectional design . The sample of research was 53 midwives who served in 19 primary health care in Gresik regency. Quality of healthcare providers data obtained using the interviews with questionnaire and direct observation, preeclampsia screening implementation data obtained by observing midwives when implementing the preeclampsia screening. Statistical test using logistic regression ($\alpha= 0.05$).

Result: The result of this study showed that the variables that affect the quality of health care providers in primary health care of Gresik Regency was the employment status ($p=0.046$), level of knowledge ($p=0.05$), training ($p=0.041$), recording of medical record ($p=0.004$). The variables that had no effect were age ($p=0,190$), period of work ($p=0,355$), and *attitude* ($p=0,057$).

Conclusion: Employment status, level of knowledge, training, and recording and reporting affect the implementation of preeclampsia screening program. Implementation of preeclampsia screening program have still not optimally. Midwives and related parties are expected to improve the quality of service providers and the quality of services in the implementation of screening programs for preeclampsia.

Keywords: preeclampsia, preeclampsia screening program, health care providers

1.0 Introduction

Preeclampsia is a specific pregnancy disorder and is still a major cause of maternal and child mortality throughout the world. The incidence of preeclampsia in pregnancy is 2% until 80% (American College of Obstetricians and Gynecologist, 2013). Preeclampsia is cause main morbidity and mortality of maternal and child with estimated 50.000-60.000 deaths per year in the world (Roberts et al, 2013). In 2014, the highest proportion of causes was found maternal mortality rate in East Java Province Indonesia are preeclampsia-eclampsia (29.9%) and bleeding (26.12%) (Gumilar, 2014). One district in East Java province which has the incidence of preeclampsia was high and have increased in the last three years is Gresik Regency. The number of preeclampsia incidents in Gresik Regency tends to increase every year (Health Office of Gresik Regency, 2016). The case of preeclampsia-eclampsia was the leading cause of maternal death in Gresik Regency for the last three years. In 2014 deaths from preeclampsia-eclampsia were 4 deaths (21.05%) out of a total of 17 maternal deaths due to eclampsia and in 2015, 3 deaths (17.65%) out of 18 cases of maternal deaths (District Health Office Data Gresik Regency, 2015).

The attention of Gresik Regency District in developing Human Development Index in the health sector have realized through the provision of adequate facilities and health personnel. The quality of health care providers is an important indicator of health development. District Health Department Gresik Regency made effort to reduce the amount of preeclampsia was establish Preeclampsia Screening Program which is currently used with antenatal care, with hope that the patients with preeclampsia potential can be detected early and given treatment to prevent complications. The US Preventive Services Task Force (USPSTF) reviews evidence that there are potential differences in potential problems between preeclampsia patients identified during preeclampsia screening (preventive) compared with the time of treatment of preeclampsia (curative). The USPSTF finds enough evidence that the potential for unexpected and fatal emergencies from preeclampsia can be identified and handled well if preeclampsia in pregnant women is identified early on in early pregnancy (Domingo, 2017).

Preeclampsia screening programs were performed with subjective checks including medical history and pregnancy history, as well as objective examination including roll over test (ROT), mean arterial pressure (MAP), and body mass index (BMI). Although coverage of pregnant women's first visit for antenatal examination during 2015-2017 has met the target but the implementation of preeclampsia screening program is still not running optimally, it can be known from the number of incident preeclampsia which still high. The number of preeclampsia events tended to increase over the past three years. Preeclampsia-eclampsia was also still the main cause of maternal death in Gresik District. This suggests that there are problems with the implementation of preeclampsia screening programs.

Implementation of screening program preeclampsia must be qualified so that pregnant women who have the potential to experience preeclampsia can be detected early. Screening for preeclampsia should be appropriate, in accordance with the operating procedures standard and accurate. The quality of service for the screening program for preeclampsia is influenced by many factors, including health workers, health facilities, the environment, pregnant women and families. Mosadeghrad (2014) identifies the factors that affects the quality service health including individual factors, organization factors and environment, these factors can improve and can also inhibit quality service health. Quality service health depends on factor personal health workers and patient and factors related with health adjustment and

wider environment. Leadership support, proper planning, the level of education and training as well as an effective process and management source power could improve quality service (Mosadeghrad, 2013). Factor health provider service is also influential to implementation of the preeclampsia screening program is financing health and availability means and infrastructure (Tando, 2013; Dodo et al , 2012).

Gibson theory mentioned the factors related to the performance of human resources namely individual, psychological, and organizational factors. Individual factors related to performance are knowledge, tenure, skills, social demographics and the environment (Gibson, 1996). Demographic factors relate to employment, age, and education level (Robbins, 2007). Ensuring good performance of health personnel is an essential component of providing quality health services to achieve SDG's programs. This study aims to analyze the influence of provider health services quality on the implementation of preeclampsia screening program at primary health care of Gresik Regency, East Java Province Indonesia.

2.0 Material and Methods

This research type is research observational analytics with cross sectional design. The study was conducted in 19 primary health facilities in the area of Gresik District, East Java province, Indonesia. The study population was all midwives who provide antenatal services, both primary health care Midwives or village midwives assigned or assisted at primary health care in Gresik Regency. The sample size was calculated using lemeshow formula (1990) that is equal to 53 midwives become research respondents. Sampling technique using simple random sampling technique. Independent variable data was collected by interview using questionnaire and observation, while dependent variable by midwife observation when performing preeclampsia screening. Data were analyzed using SPSS (version 21.0). The effect of health service provider quality was tested using logistic regression with 95% confidence level ($\alpha = 0,05$).

3.0 Study Instruments

Instruments used in this study were a questionnaire, finished sheet of recording of examination preeclampsia result on medical record, and checklist sheets of preeclampsia screening implementation. Independent variable data include characteristics of the midwives (age, period of work, employment status), competence (level of knowledge and attitude), preeclampsia screening training obtained by interview using questionnaires that have been tested for validity and reliability. The questionnaire was taken from previous research instruments and developed again based on existing theory. Prior to use in research, the instrument of research first tested the validity and reliability.

Independent variable data recording of medical record of preeclampsia screening examination result by midwife obtained with observation on medical records/ mother and child books/ preeclampsia skrinning cards/ cohorts book. Measurement instruments for recording of medical record of preeclampsia screening examination result are assessed from the completed writing of screening results of preeclampsia include writing of mother age, roll over test,

mean arterial pressure and body mass index. Recording of medical record preeclampsia screening test results are declared complete when four of examination results are all written by the midwives.

Dependent variable was implementation of preeclampsia screening program obtained by direct observation of midwives performance while performing preeclampsia screening. Instruments measurement for the implementation of preeclampsia screening program using checklist in accordance with operating procedures standard of preeclampsia screening that included subjective examinations of maternal and objective history including examination of roll over test, mean arterial pressure, and body mass index.

4.0 Result

Distribution of health care providers based on research variables are presented on the table 1

Table 1. Distribution of health care providers based on research variables

| Variables | n = 53 | % |
|---|--------|------|
| 1. Midwives characteristic | | |
| Age | | |
| 21-30 | 13 | 24.5 |
| 31-40 | 21 | 39.6 |
| 41-50 | 15 | 28.3 |
| ≥ 51 | 4 | 7.6 |
| Period of work | | |
| 0-9 | 17 | 32 |
| 10-19 | 18 | 34 |
| 20-29 | 16 | 30.2 |
| ≥ 30 | 2 | 3.8 |
| Employment status | | |
| Civil servants | 36 | 67.9 |
| Temporary employees | 3 | 5.7 |
| Honorary | 14 | 26.4 |
| 2. Competence | | |
| Level of knowledge | | |
| Good knowledge | 14 | 26.4 |
| Sufficient knowledge | 16 | 30.2 |
| Less knowledge | 23 | 43.4 |
| Attitude | | |
| High attitude | 37 | 69.8 |
| Moderate attitude | 16 | 30.2 |
| 3. Preeclampsia screening training | | |
| Ever | 14 | 26.4 |
| Never | 39 | 73.6 |

4. Recording of medical record

| | | |
|------------|----|------|
| Complete | 19 | 35.8 |
| Incomplete | 34 | 64.2 |

5. Implementation of preeclampsia screening program

| | | |
|-------------|----|------|
| Right | 21 | 39.6 |
| Not exactly | 32 | 60.4 |

Based on the table above, it can be seen that most of the midwives are 31-40 years old (39.6%), the longest period of work is 10-19 years (34%), the highest employment status is as civil servant (67.9%), most midwives have a low level of knowledge (43.4%). In this study, midwives attitudes are categorized into three, namely high, medium and low attitudes, with most midwives having high attitudes (69.8%) and no midwives with low attitudes toward the implementation of the pre-screening program of preeclampsia. Most midwives had never attended pre-screening screening training (73.6%), most midwives were incomplete in the recording of medical record of preeclampsia screening results (64.2%). Most midwives have not been appropriate on implementing the screening program for preeclampsia (60.4%).

Influence of midwives characteristics on the implementation of preeclampsia screening program are presented on the table 2.

Table 2. Influence of midwife characteristics on implementation of preeclampsia screening program a

| Variables | P-value | OR |
|-------------------|---------|-------|
| Age | 0.190 | 1.010 |
| Length of working | 0.355 | 1.016 |
| Employment status | 0.046 | 3,667 |

Characteristics variable of midwives in the value of midwives age, period of work and employment status. The results of the analysis obtained midwives age p value is 0.190 ($p > 0.05$), it means that the age of midwives is not significantly influence the implementation of the preeclampsia screening program. P value period of work is 0.355 ($p > 0,05$) it means period of work not significantly influence the implementation of the preeclampsia screening program. P value employment status is $p = 0,046$ ($p < 0,05$), it means that the employment status has significant influence on the implementation of the screening program.

The influence of competence on the implementation of preeclampsia screening program are presented on the table 3.

Table 3 Influence of competence on implementation of preeclampsia screening program a

| Variables | P-value | OR |
|-----------------|---------|-------|
| Knowledge level | 0.011 | 3,600 |
| Attitude | 0.057 | 3,000 |

Competence midwives variable categorized are level of knowledge and attitudes on the implementation of preeclampsia screening programs. The result of the analysis of level of knowledge obtained p value 0.011 ($p < 0.05$), it means that the level of knowledge significantly influence the implementation of screening preeclampsia program. The result of

p value analysis of midwife attitude is 0,057 ($p > 0,05$) it means that midwife attitude is not significant influence to the implementation of preeclampsia screening program.

Influence of preeclampsia screening training on the implementation of preeclampsia screening programs is presented on the table 4.

Table 4. Influence of preeclampsia screening training on the implementation of preeclampsia screening programs

| Variables | p-value | OR |
|---------------------------------|---------|-------|
| Preeclampsia screening training | 0.041 | 2,000 |

The rate of preeclampsia screening training has p value 0.041 ($p < \alpha = 0.05$) it means that the preeclampsia screening training significantly influence the implementation of the screening preeclampsia program.

Influence of recording of medical record the preeclampsia screening result on the implementation of a screening preeclampsia program is presented on the table 5

Table 5. Influence of recording of medical record the preeclampsia screening result on the implementation of a screening preeclampsia program

| Variables | p-value | OR |
|-----------------------------|---------|-------|
| Recording of medical record | 0.004 | 3,250 |

Recording of medical record of preeclampsia screening results obtained p value is 0.004 ($p < 0.05$), it means that the variables of recording of medical record of preeclampsia screening results significantly influence the implementation of preeclampsia screening program.

5.0 Discussion

In this study the characteristics of midwives are assessed by age, period of work and employment status. The result of the analysis showed that age and duration of work had no influence on the implementation of preeclampsia screening program, but employment status had significant influence on the implementation of preeclampsia screening program. In this study midwives age had no significant influence on the implementation of preeclampsia screening program. The results of this study are equal with research conducted by Islami (2016), study results obtained age did not influence the compliance of operating procedure standard of early detection of preeclampsia. The results of explanatory research by Rofiah (2013) shows no correlation between midwife's age and midwife practice in pregnancy care. The results of this study distinct from the study by Abu et al (2015) which there is significant relationship between age and antenatal care quality provided by the midwife. According to Robbins theory, age is related to the level of maturity of a person in performing tasks, as well as psychological maturity. Robbins mentioned that there will be a decrease in performance in line with the increase in age (Robbins, 2007). According to Notoatmodjo (2010), someone who is at productive age will tend to have high motivation and potentially have high performance. According to theory, someone who is of childbearing age should have a good performance, but in this study was found midwife productive age most of the implementation of the preeclampsia screening program is still not right. Productive age does not always make

a person's performance good. Productive age if not supported by high knowledge level, then preeclampsia screening programs also can not be implemented properly. Apart from that there are still a lot of midwives who have not attended training on preeclampsia screening using the techniques roll over test, mean arterial pressure and body mass index so the implementation of screening program can not be done optimally.

One of the characteristics of midwives that influence the quality of health care providers is the period of work. Period of work is the whole learning that someone gained from their past events. The results of this study are equal with Aini (2016) research conducted. Aini analyzed factors related to the performance of midwives in antenatal care. The result of the research shows that the period of work has no significant correlation to the performance of midwife in antenatal service. This research is supported by Surani (2007) which states that the working period is not related to the performance of a person, the longer a person works and becomes superior is not always shows better performance compared with workers who have not longer his working life. However, some other studies give different results. The result of Rofiah's research (2013) shows the relationship between long of work with midwife practice in giving communication, information, and education about pregnancy in patient. The research of Kusmayati (2012) shows that there is a correlation between period of work and midwife performance. The results of this study differ from Gibson's theory, where the length of time of duty relates and influences one's skills, where experience is the background that indirectly determines the performance and behavior of the individual (Gibson, 1996). Gibson mentions that the period of employment was related and influential to one's skill, as there are differences in individual work experience established during the lifetime. Experience is the background that indirectly determines the performance and behavior of individuals in providing services (Gibson, 1996). Although the majority of respondents have a working period of more than 10 years, but it does not make significant period of work on the implementation of preeclampsia screening program in primary health care in Gresik Regency. The period of work does not influence the implementation of preeclampsia screening program in primary health care in Gresik Regency, it can be caused by preeclampsia screening program using roll over test, mean arterial pressure and body mass index is a new program which may not be well known to midwives, especially senior midwives, so it has not been used to screening preeclampsia using ROT method, MAP BMI and most midwives have not received training on preeclampsia screening.

In addition to age and duration of employment, the characteristics of midwives are also viewed from the employment status. The result of the analysis shows that there is a significant correlation of employment status to the implementation of preeclampsia screening program at primary health care in Gresik Regency. Employment status is the condition or position of employees in the work environment. The results of this study contradict previous research conducted by Surani (2008), which states that there is no relationship of employment status with performance. Islami studies (2016) show that employment status has no influence on midwife compliance in the early detection of preeclampsia. The difference of this study with previous research can be caused by previous research respondents although the status is not civil servants but has a good performance. Implementation of preeclampsia screening program at primary health care does not differ between civil servant midwives and midwives non-civil servants (honorary, temporary employee or volunteer) so that civil servant midwives are not so motivated in improving their performance.

According to the Law of the Republic of Indonesia number 36 of 2014 on health workers, it is mentioned that competence is the ability possessed by a health worker based on knowledge, skill and professional attitude in carrying out practice. Knowledge is the intellectual ability and level of understanding midwives, especially midwives competence in the application of service standards in accordance with midwifery education. In this study, the competency is assessed from the midwife knowledge level in the implementation of preeclampsia screening program and midwife attitudes regarding the implementation of preeclampsia screening program in primary health care of Gresik Regency. The result of the research shows that midwife knowledge level in Gresik Regency is quite varied. The results of the analysis in this study the level of knowledge of midwives influence the implementation of preeclampsia screening program. This research is in line with research by Kusmiyati (2012) shows knowledge influences on midwife performance. Research conducted by Yulianti (2012) shows that the level of knowledge of midwives in primary health care influence the performance of midwives in the handling of high risk pregnant women. In line with this research, Ainy's (2016) study gave the same result, midwives knowledge related to midwives performance in providing antenatal care. In this study, the difference in the level of respondents' knowledge. the possible difference maybe caused by uncertainty and difference of perception about the implementation of preeclampsia screening program. Roll over test, mean arterial pressure and body mass index are fairly new methods of screening preeclampsia during pregnancy. Most midwives have never received training on preeclampsia screening, midwives have only information about preeclampsia screening management from midwives coordinators in the primary health care.

In addition to the level of knowledge, competence in this study was also assessed from the attitude of midwives in the implementation of screening preeclampsia in Clinic Gresik District. Attitudes and behavior of healthcare providers will impact on patient welfare, satisfaction in service delivery, and access to health services. The professional attitude of health workers in providing health services determines the quality of care and will impact on patient health outcomes (Mannava et al , 2015). The results showed that no midwife had a low attitude of midwife in the implementation of preeclampsia screening program. In this study attitudes measured from midwives professionalism in the implementation of preeclampsia screening program. The result showed that midwives in primary health care of Gresik Regency had good attitude but the result of midwives attitudes analysis did not significant influence the implementation of preeclampsia screening program. The results of this study are not in accordance with Green theory which states that attitude is a predisposing factor that affects on someone behavior (Green, 1991). The difference of this study with previous research is probably due to the many factors that can influence the attitude and behavior of midwives in providing services. According to Mannava et al (2015) attitudes and behaviors of health workers are influenced by many factors, among others, individual factors that include the level of trust and characteristics of health personnel themselves, the relationship of service providers with patients, as well as attitudes, behaviors and attributes of patients. Other factors that affect attitudes are the level of organization such as workload and work environment, including supervision that supports the relationship with colleagues and the availability of facilities and infrastructure. Attitudes and behavior of health care providers can also be influenced by the cultural beliefs of the community. Community culture can shape positive and negative attitudes and behaviors of health care providers (Mannava et al , 2015). The number of factors affecting the attitude of service providers leads to differences in the results of research on the effect of attitudes of health care providers in the delivery of health services, particularly during antenatal care. Besides, the cause of insignificant

influence of attitude toward the implementation of preeclampsia screening caused by this research, the study result of attitude of midwife is less varied, most of the number of midwives have high attitude and there is no midwife with low attitude so that it may influence the result of analysis.

Based on the results of the study, it was found that most midwives in charge of providing antenatal care had never received training on screening for preeclampsia. The result of data analysis showed that preeclampsia screening training had significant effect on the implementation of preeclampsia screening program in primary health care of Gresik Regency. The results of this study are supported by the theory that training is a short term educational process that uses systematic and structured procedures so that trainees will gain knowledge for a particular purpose (Dharma, 2009). In line research conducted by Longgupa (2014), research shows that training on delivery affects the performance of midwives in providing normal delivery help. Midwives especially in clinic should be qualified through a series of trainings, direct guidance and opportunities to be able to practice skills in actual practice. Training is a form of additional knowledge, skills and attitudes of midwives in providing services. Suryaningtyas study (2014) indicated a training relationship with the performance of the village midwife. The performance of the village midwife either tends to be present in the village midwife has been poorly trained and the performance of the village midwife is likely to be found in the village midwife has never been trained. Training will form the basis by increasing the skills and knowledge needed to improve performance or develop the potential of the future midwife. Training can provide knowledge and teaching on things that have not been done before. Training is a process of learning to acquire and improve skills outside the formal education system that apply in a short period of time with a method that prefers practice rather than theory (Hundley, 2007). The development of sustainable professionals is the most important investment in human resources. Performance appraisal and the validity of performance professionalism can help develop the capacity of healthcare providers. A sustainable organizational learning team should be set up within the health care organization to meet the formal and non-formal education needs of further midwives.

Midwives as providers in midwifery services are responsible for obstetric documentation, including documentation of screening results for complications. The recording of medical report of inspection results is part of a quality service standard. Each time the examination, health personnel must record the results on medical records, mother cards and mother and child books. Assessment of completeness of recording and reporting of preeclampsia screening results was assessed from the preeclampsia screening results on preeclampsia card or medical record or mother and child books or in a cohort book. Recording and reporting are completed when four examination results covering age, roll over test, mean arterial pressure and body mass index result are written and said to be incomplete if ≤ 4 examination results are not written. The result of significance test showed that the recording of medical record of preeclampsia screening result significantly influenced the implementation of preeclampsia screening program. The results of this study are not in line with Islami research (2016), which states that there is no influence between the writing of the examination results on the mother card on the compliance of operating procedure standard early detection of preeclampsia.

Based on the results obtained by midwives which complete in recording medical record of preeclampsia screening only a few midwives. This shows that midwives compliance in the recording and reporting of preeclampsia screening results is lacking. Based on the research,

most midwives did not do the recording and reporting completely. Many of the respondents did not record the results of screening for preeclampsia. The results of field observations obtained by the midwife did not do the recording completely because of the unavailability of special column for the results of examination of roll over test, mean arterial pressure and body mass index on medical record, mother card and mother and child book and cohort book, so midwives often skip in writing the result of preeclampsia screening, but there are some primary health care that already have a special sheet, a kind of checklist to record the examination results, namely Industria, Nelayan, Bungah, Sidayu, and Dukun. In addition, the causes of midwives are incomplete in recording and reporting are the results of the ROT, MAP and BMI examinations give negative results, so midwives often do not write the results of the examination because it considers no complication problems. Midwives often forget to write the results of the examination because of time constraints, because the screening takes a long time and midwives should write the results of the skued preeclampsia screening on the mother's card, KIA book and cohort book. Midwife has a lot of workload, because midwife is not only duty in primary health care, but also outside primary health care building, so in the implementation of preeclampsia screening program especially in recording of medical record of screening result can not maximally.

6.0 Conclusion

Based on the result of data analysis, it found that the significant factor of health provider to the implementation of preeclampsia screening program are employment status, level of knowledge, training, and recording of medical record.

7.0 Recommendation

Suggestions aimed at the parties related to the implementation of preeclampsia screening program in primary health care of Gresik Regency, the District Health Office of Gresik Regency. Midwives are expected to improve quality of health care so can improve maternal and child health. Suggestions for District Health Office of Gresik Regency is expected that the Health Office provides training of preeclampsia screening to all midwives who perform antenatal care in primary health care. Prepare and conduct an official preeclampsia screening card (sheet checklist) in accordance with operating procedure standard of Task Force of East Java so there is no difference of perception about operating procedure standard preeclampsia screening among primary health care in Gresik Regency, so that midwife is more discipline in recording to medical records and implementation of preeclampsia screening can take place according to purpose.

8.0 Limitations of the study

The study instrument in the form of questionnaires is not a standard. Questionnaire taken from previous research and developed again by the researcher, so the question and statement of possibility not yet cover in detail all aspects concerning variable, but the researcher overcome it by developing questionnaire based on existing theory.

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