

# Five Types of Personality and the Locus of Internal Control in relation to Preeclampsia Pregnancy

Lusiana Meinawati<sup>1</sup>, Kusnanto Kusnanto<sup>2</sup>, Oedojo Soedirham<sup>3</sup>

<sup>1</sup>Doctoral Program of Public Health, Faculty of Public Health, <sup>2</sup>Faculty of Nursing, <sup>3</sup>Faculty of Public Health, Universitas Airlangga, Mulyorejo, Surabaya, Indonesia

## ABSTRACT

Preeclampsia is one of the highest mortality factors for pregnant women. Hypertension, one of the main characteristics of preeclampsia, is the second main causes of maternal mortality at 27.1%. During pregnancy, they will face physical and psychological stressors. One of the factors related to stress management is the woman's characteristics and the locus of control. This study aims to identify the relationship between the five types of personality and the locus of internal control in relation to preeclampsia in pregnancy. This study used a cross-sectional design. The population of this study consisted of pregnant women with preeclampsia who came to the independent midwifery practices in Jombang; 135 women total. The sample was selected using the total sampling method. The data was analysed by regression analysis. The independent variables related to preeclampsia included neuroticism ( $p=0.003$ ;  $\text{Exp}(B)=11.234$ ) and the negative internal locus of control ( $p=0.000$ ;  $\text{Exp}(B)=11.387$ ). It is expected that midwifery professionals can provide counselling services effectively and efficiently in relation to performing antenatal care services.

**Keywords:** *personality, locus of control internal, pregnancy, preeclampsia.*

## INTRODUCTION

Preeclampsia is one of the highest mortality factors for pregnant women<sup>1</sup>. Hypertension, one of the main characteristics of preeclampsia, is the second main cause of maternal mortality at 27.1%, after haemorrhage (30.3%) and before infection (7.3%)<sup>2</sup>. According to the data of *Survey Demografi Kesehatan Indonesia (SDKI)* in 2007 and 2012, the Maternal Mortality Rate (MMR) in Indonesia was still high, by as many as 228 and 359 per-100,000 live births respectively. This number is still far from the target of the Millennium Development Goals (MDGs) 2015, which aims for 102 per-100,000 live births<sup>3</sup>.

According to the health profile of Indonesia's East Java Province in 2012 and 2013, the mortality rate was

97.43 per-100,000 live births and 97.13 per-100,000 live births respectively<sup>4</sup>. In Jombang City in 2017, there were 28 maternal deaths following live births. The number increased from 2016, with 17 deaths. The 28 deaths in 2017 were caused by preeclampsia (5 cases), haemorrhage post-partum (4 cases), eclampsia (3 cases), amniotic embolism (2 cases) and an ante-partum bleeding case, while the other 13 was caused by other co-morbidities. These cases must be considered to devise more effective initial assessments and interventions in order to decrease the maternal mortality rate caused by preeclampsia and eclampsia.

Pregnant women are one of the most vulnerable members of a community. During pregnancy, they will face physical and psychological stressors. Good stress management determines the success of the pregnancy. One of the factors related to stress management is the woman's characteristics and how far the woman can control her emotions in relation to overcoming the stress related to the physical alterations caused by pregnancy and for other reasons.

There are five basic personalities according to Goldberg, encompassing openness to experience,

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### Corresponding Author:

Lusiana Meinawati  
Doctoral Program of Public Health,  
Faculty of Public Health, Universitas Airlangga,  
Mulyorejo, Surabaya, Indonesia  
Email: lusiana85@gmail.com

conscientiousness, extraversion, agreeableness and neuroticism, which affects people in the context of solving their problems<sup>5</sup> The locus of internal control also influences the pregnant women's condition<sup>6</sup> their commitments are influenced by their personality traits, as they are also known as emotional labour. The purpose of this study is to investigate the dominant personality traits in the company based on the Big Five Personality theory, to assess the level of employees' commitment to service quality (quality pledge. This study aimed to identify the relationship between the five types of personality and the locus of internal control with preeclampsia pregnancy.

## METHOD

This study used a cross-sectional design. The study was conducted in Jombang Regency, from July to September 2016. The population of this study were all of the pregnant women with preeclampsia who came to the selected independent midwifery practices in Jombang, totalling 135 women. The sample was selected using the total sampling method. The instrument used was a questionnaire with a Cronbach's Alpha value of 0.862. The data was analysed using regression analysis.

## RESULTS

**Table 1: Demographic characteristics of the respondents (n = 135)**

Characteristics	Parameters	n	%
Age (years old)	18-35	73	54.0
	> 35	62	46.0
Pregnancy	Primigravida	44	33.0
	Multigravida	91	67.0
Occupation	Housemaid	27	20
	Factory workers	53	39
	Teacher	55	41
Education	Senior High School	116	86
	College	19	14
Locus Internal Control	Positive	53	39
	Negative	82	61
Personality	Openness to experience	12	8
	Conscientiousness	18	13
	Extraversion	7	5
	Agreeableness	30	22
	Neuroticism	68	52

**Table 2: Results of logistic regression analysis**

Variable	B	S.E.	Sig.	Exp (B)	95%CI
Neuroticism	2.897	0.432	0.003	11.234	2.899< OR < 43.587
Negative ILC	1.143	0.458	0.000	11.387	1.897< OR < 23.426

Table 1 shows that most of the respondents were 18-35 years old (54%). Most of the women had multigravida (67%). Regarding occupation, most were factory workers (395) and had a senior high school level of education (86%). The most common locus of control had was negative, and the most common personality was neuroticism (52%).

Table 2 shows that the independent variables related to preeclampsia included the personality of neuroticism ( $p=0.003$ ;  $\text{Exp}(B)=11.234$ ) and the negative internal locus of control ( $p=0.000$ ;  $\text{Exp}(B)=11.387$ ).

## DISCUSSION

- Age:** Based on age, the respondent's characteristics showed that the majority of the respondents were 18-35 years old. Age is a determinant factor influencing the health status of pregnant women. However, in preeclampsia cases, the mother's age does not influence occurrence. Instead, it is affected by other factors encompassing the environment, health record, parity, metabolism disorders, psychological conditions, and social-economic status<sup>7</sup>. The many occurrences of preeclampsia at a healthy age are due to most pregnancy and childbirth cases occurring between the ages of 18 and 35 years old. According to the Indonesian Ministry of Health, the age of pregnant women who are at the highest level of risk is mothers who are too young (<20 years) or too old (> 35 years).
- Pregnancy:** The characteristics of the respondents based on their pregnancy showed that most of the respondents had multigravida pregnancy. Cunningham (2014) stated that the risk factors for preeclampsia are nullipara, the environment, socioeconomic conditions, seasonal influences, obesity, gemelli pregnancy, maternal age, impaired metabolism and a family history of

preeclampsia or previous history of preeclampsia. A study conducted by Hindun (2015) showed that primigravida has a greater chance of developing by 2.875 times into preeclampsia compared with non-primigravida.

**3. Occupation:** The characteristics of the respondents based on their work indicated that most of the pregnant women work as factory workers. The risk factors for preeclampsia include their socioeconomic condition, in which one of the supporting factors is employment<sup>7</sup>. Work as a factory worker is an activity that involves physical activity. In a factory, the conditions are always pressured, which is a factor that causes psychological disorders that affect maternal pregnancy. A study mentioned that mothers who work in the formal sector have better access to information about their health, more actively have a positive attitude and more independently take care actions<sup>8</sup>.

**4. Education:** The characteristics of the respondents based on education level was that the majority of respondents had a high school level of education. A person's level of education influences how a person makes decisions on the health problems that they experience. The lower the mother's education level, the less the mother has the desire to use health services. A study mentioned that mothers with a higher education level have better access to information about health. It makes them have a better decision-making process related to determining care planning for the duration of their pregnancy<sup>8</sup>.

**5. Personality and Locus of Control:** The regression analysis results showed that the independent variable allegedly related to the preeclampsia cases was the personality of neuroticism with  $\text{Exp}(B)=11.234$ . It means that pregnant women with a neurotic personality are 11.387 times more likely to get preeclampsia. The negative ILC has a relationship with preeclampsia with  $\text{Exp}(B)$  11.387. This means that pregnant women with a negative ILC have 11.387 times the probability of having preeclampsia.

Neuroticism is a personality in which a person can evaluate their ability to handle pressure or stress<sup>9</sup>. The positive characteristic of neuroticism is emotional stability. Individuals with emotional stability tend to be calm in facing problems, have self-confidence and firm principles. However, the negative characteristics

of neuroticism are being easily nervous, depressed, not confident and easily changing their mind<sup>5</sup>. A study proved that there is an influence between stress and the occurrence of hypertension in pregnant women<sup>10</sup>. This is because they are unable to overcome the problems faced by their mental, physical and emotional health.

The negative attributes of neuroticism as mentioned above show that the pregnant women were not ready to adapt to the physical and psychological alterations of pregnancy. It influences their mental and emotional health, and can affect their cardiovascular condition, increasing their blood pressure and thus, leading to preeclampsia<sup>11</sup> who were matched for age and date of delivery. The incidences of diabetes, dyslipidemia, hypertension and cardiovascular events after pregnancy were identified from medical records after the date of delivery to the date of an event or the end of the study.

RESULTS

The median follow-up duration was 9.8 years (interquartile 5.1–12.7 years).

The study showed that there was a relationship between negative locus of control and the incidence rate of preeclampsia. Locus of control is a condition where a person can control him/herself against the problem at hand. When a pregnant woman is unable to adapt to a problem, it means that the pregnant woman has a negative locus of control. The risk factors for preeclampsia are nullipara, the environment, socioeconomic conditions, seasonal influences, obesity, gemelli pregnancy, maternal age, impaired metabolism and a family history of preeclampsia or a history of previous preeclampsia, as well as psychological factors<sup>7,12</sup>.

## CONCLUSION

Based on the results of the study, it showed that out of the five major properties of personality, neuroticism and having a negative internal locus of control were the variables most associated with the incidence rate of preeclampsia. It is expected that a midwifery professional can provide counselling services effectively and efficiently in relation to performing antenatal care services.

**Conflict of Interest:** None.

**Ethical Clearance:** The study passed ethical clearance from Ethical Committee of the Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia.

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