

# Kesmas

National Public Health Journal

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# Extrovert Personality Type and Prolonged Second Stage of Labor

## Hubungan Tipe Kepribadian Ekstrovert dan Persalinan Kala II Lama

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### Abstract

Personality can affect individual's response that implicate in duration of labor. Previous studies showed relationship between personality and duration of labor. People with extrovert personality type (type A) tend to be more susceptible to stress than introvert personality type (type B). This study aimed to determine correlation between extrovert personality type and prolonged second stage of labor by considering external variables such as maternal education, economy, age and parity. A case control study was conducted on 156 parturient women who fulfilled the inclusion criteria of study, such as in Yogyakarta in 2015. Case samples were 52 women with prolonged second stage of labor and control were 104 women with normal second stage of labor. Purposive sampling method was used. Personality type assessment used type A/B questionnaire of Jenkins Activity Survey. Data analysis used logistic regression. Results showed that 80.8% prolonged second stage of labor occurred in type A mothers and 19.2% in type B mothers. Extrovert personality type had a significant correlation with prolonged second stage of labor ( $p$  value < 0.05). Type A mothers have a risk 8.2 times (95% CI: 3.7-18.4) of prolonged second stage of labor than type B mothers after be controlled with economic status, parity, maternal education and age.

**Keywords:** Childbirth process, extrovert personality type, delivery

### Abstrak

Kepribadian dapat memengaruhi respons individu yang dapat berdampak pada proses persalinan lama. Penelitian sebelumnya menunjukkan adanya hubungan kepribadian dengan waktu persalinan. Tipe kepribadian ekstrovert (tipe A) cenderung lebih rentan terhadap stres dibandingkan orang dengan tipe kepribadian introvert (tipe B). Penelitian ini bertujuan untuk mengetahui hubungan tipe kepribadian ekstrovert dan variabel luar (pendidikan, ekonomi, usia ibu dan paritas) dengan persalinan kala II lama. Studi kasus kontrol dilakukan pada 156 ibu bersalin yang memenuhi kriteria inklusi pada tahun 2015 di Yogyakarta. Sampel kasus adalah 52 ibu dengan persalinan kala II lama dan kontrol adalah 104 ibu dengan persalinan kala II normal. Penelitian ini menggunakan metode purposive sampling. Tipe kepribadian dinilai menggunakan kuesioner tipe A/B Jenkins Activity Survey. Analisis data menggunakan regresi logistik. Hasil penelitian menunjukkan 80,8% kala II persalinan lama terjadi pada ibu dengan kepribadian tipe A dan 19,2% pada ibu dengan kepribadian tipe B. Tipe kepribadian ekstrovert memiliki hubungan signifikan terhadap kala II persalinan lama (nilai  $p < 0,05$ ). Ibu dengan kepribadian tipe A berisiko 8.2 kali (95% CI: 3,7-18,4) mengalami persalinan kala II lama dibandingkan ibu dengan kepribadian tipe B setelah dikontrol variabel status ekonomi, paritas, pendidikan dan usia ibu.

**Kata kunci:** Proses Persalinan, tipe kepribadian ekstrovert, persalinan

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## Introduction

The second stage of labor starts when the cervix is fully retracted and ends with birth.<sup>1</sup> Prolonged second stage of labor occurs when delivery of the fetus takes more than two hours in primiparous and one hour in multiparous.<sup>2-4</sup> The incidence of prolonged labor in Indonesia is about 5%.<sup>5</sup> Prolonged second stage of labor may lead to maternal and fetal death. Prolonged second stage of labor is the fifth cause of maternal mortality after hemorrhage, eclampsia, infections and complications of childbirth.<sup>2,4,6,7</sup>

The success of the delivery process is strongly influenced by the synchronous interaction effort which involves strength and power, passage, passenger, and psyche.<sup>8</sup> Labor pain that cannot be adapted by the mother will increase feelings of anxiety in the mother. Anxiety can cause a long labor.<sup>9</sup> One of the psychological aspects which is innately embedded in an incline to be permanent is personality. Everyone has a different personality because it is influenced by genotype, an inherited genetic trait. Personality is also influenced by phenotype, the characteristics of an individual resulting from the interaction with the environment. A personality type is relatively permanent and does not easily or significantly change. A personality type is a psychological characteristic which inclines to be unaltered for long periods of time.<sup>10</sup>

One system of personality categorization posits two types, extrovert and introvert. Individuals with introvert personality (type B) tend to have a calm attitude and more patience, so they are able to enjoy life more. On the other hand, individuals with extrovert personality (type A) have a tendency to be easily overcome by frustration and stress. Extrovert personality trait (type A) tend to be more susceptible to stress than people with introvert personality type (type B).<sup>11-14</sup> Personality type can be assessed by type A/B questionnaire of Jenkins Activity Survey. Questionnaires written in Indonesian have been validated. The questionnaires' reliability has also been tested by using a Cronbach alpha of 0.86.<sup>15</sup>

The stress and anxiety that a woman experiences during delivery process results increased sympathetic tone of muscles. This condition also triggers adrenalin leading to constriction of blood vessels. As a result, it reduces the flow of blood which carries oxygen to the uterine. Eventually, it leads to failure in the contractions and prolonged delivery time. Stress during labor can result from personality.<sup>16,17</sup>

A mother's personality type is one of the important factors which affect her psychological condition and labor process. It needs more attention from the early stages of pregnancy to provide mental support and effective stress management. Comprehending the mother's personality type leads to more focused recognition process

and health education to prevent interference/psychological problems which might occur during labor process.<sup>16</sup>

Recently, numerous studies on factors influencing prolonged labor have been conducted. However, the study of the relationship between personality and prolonged labor has not been done yet. This study aimed to determine correlation between extrovert personality type and prolonged second stage of labor after consideration of external variables (maternal education, economy, age and parity).

## Method

This study used a case-control design. Samples were women who gave birth in Wates Hospital Yogyakarta, with inclusion criteria including the birth weight of child < 4000 gram, participants did not have complications and comorbidities and history of mental illness. Subjects were excluded if their address was not found, they were not willing to be sample and not able to communicate. The study was conducted in January to October 2015 with purposive sampling. The case samples were women with prolonged second stage of labor (second stage of labor more than two hours for multiparous and one hour for primiparous) and control women with normal second stage of labor (second stage of labor  $\leq$  2 hours for multiparous and  $\leq$  1 hour for primiparous).<sup>2-4</sup> The data were based on diagnosis recorded in the medical record. Both groups were then searched one by one according to the address on medical record.

The following step was to assess their personality by using a personality type A/B questionnaire of Jenkins Activity Survey. This questionnaire consisted of 20 questions in which each question received a different score. A high score in the questionnaire indicated that the subject was an extrovert personality, and a low score represented an introvert personality. Personality was categorized into extrovert type (type A) if the score of questionnaire reached 201-380. Personality was categorized into introvert type (type B) if the score of questionnaire was 40-200.<sup>15</sup> The questionnaire was translated into Indonesian language. Further, it was validated and underwent a reliability test with Cronbach alpha value of 0.86. Personality type was assessed. In order to ensure the accuracy and comparability of the data collection, a workshop was conducted before the commencement of fieldwork. During the data collection process, the respondents were given a full explanation of the study purpose before being invited to participate. Then after they signed the informed consent, a face-to-face interview was conducted. As a quality control, the supervisors checked the completeness of the questionnaire at the end of each day. If information was missing, the interviewer went back on the same or the following day to obtain the missing information.

Covariates were investigated. A possible confounder



was maternal age. It would be riskier if the mother was younger than 20 years old or older than 35 years old. Moreover, parity is included into risky category if primiparas have parity 1 or parity > 4, while the parity 2 – 4 is included into less risky category. A power test determined that each group should contain a minimum of 52 as calculated by using a case control study according to Kelsey,<sup>18</sup> using  $\alpha = 0.05$ , power = 80. For statistical analysis, the bivariate analysis used chi square tests, and the multivariate analysis used logistic regression. The p value of the likelihood ratio to the chi square was used as a guide to the model's goodness of fit. All p values were two-tailed and statistical significant level was set as less than 0.05.

### Results

There were 656 births in Wates Hospital Yogyakarta in 2015, which met the inclusion criteria. Of these, there were 69 cases (prolonged second stage of labor) and 587 controls (normal second stage of labor). As many as 69 subjects from case group were traced by finding their address obtained from their medical record. After finding the study subjects, then their personalities were assessed. Of these 69 subjects, five subjects could not be found. Thus, the case group contained 52 subjects. Subjects for the control group were 104. Therefore, the total of subjects who participated in the study was 156 subjects (52 for case group and 104 for control group).

Table 1 presents the comparability of the study subjects between case and control groups based on their educational background, parity, age, economy. Table 1 shows no significant differences in the characteristics of educa-

tion, economic level, age and parity between the case and control. This illustrates that these two groups had comparable characteristics. Correlation between extrovert personality type and duration of labor process was analyzed by chi square.

Table 2 performs the correlation between extrovert personality type and prolonged second stage of labor. Type A mothers had higher risk 8.2 times with 95% confidence interval (CI) 3.72-18.4 than type B mothers. Correlation between extrovert personality type, type B maternal education, economy, maternal age, parity and duration of labor process was analyzed by logistic regression using the backward method. The first step regression analysis was performed by bivariate selection. Variables with p value  $\leq 0.250$  were entered in the selection multivariable. The analysis showed that age, parity, economics and education had p value > 0.250, so they were not included in the multivariable selection.

Table 3 shows the correlation between extrovert personality type and the duration of labor after consideration of external variables (maternal age, parity, economy and education). Type A mothers had 8.2 times higher risk (95% CI: 3.72-18.4) than type B mothers. Parity and maternal age were not confounder variables in determining correlation between personality type and the duration of labor.

### Discussion

This study found a correlation between extrovert personality types with prolonged second stage of labor. This strong association is marked by relative risk (RR) of 8.2. These results are in line with previous studies conducted.

Table 1. Subject Comparability (Case vs. Control)

Variable	Category	Case		Control		p Value
		n=52	%	n=104	%	
Maternal educational background	Low (elementary, junior high)	18	34.6	35	33.7	1.000
	High (high school, university)	34	65.4	69	66.3	
Economy	Low	40	76.9	76	73.1	0.746
	High	12	23.1	28	26.9	
Maternal age	Risky (< 20 years and >35 years)	6	11.5	16	15.4	0.684
	Not risky	46	88.5	88	84.6	
Parity	Risky (1 and > 4)	24	46.2	48	46.2	1.000
	Not risky	28	53.8	56	53.8	

Notes:

n = Number of Sample

Table 2. Correlation between Extrovert Personality Type and Prolonged Second Stage of Labor

Variable	Category	Case		Control		p Value	OR
		n=52	%	n=104	%		
Personality type	Personality type A	42	80.8	35	33.7	0.000	8.2
	Personality type B	10	19.2	69	66.3		

Notes:

n = Number of Sample; OR = Odds Ratio



Table 3. The Correlation between Extrovert Personality Type and Prolonged Second Stage of Labor After Consideration of External Variables

Variable	$\beta$	SE	p Value	OR	95% CI	
					Lower	Upper
Personality type						
Type A	2.114	0.409	0.000	8.2	3.72	18.4
Type B (Ref)						

Notes:

SE = Standard Error; OR = Odds Ratio; CI = Confidence Interval

The results of this study supports previous studies, among others, study by Hassan,<sup>11</sup> and Allison *et al*,<sup>16</sup> who stated that individuals with type A personality were more vulnerable to stress. Thus, it causes physiological changes such as an increase in serotonin in response to emerging stressors.<sup>12,17,19</sup>

Personality type influences biological and psychological responses. In theory, people with type A personality are more prone to stress and anxiety, so the condition affects the labor process. Personality determines a person's reaction to stress.<sup>20</sup> Stress can lead to an increasing sympathetic muscle tone. This condition also triggers adrenaline release leading to constriction of blood vessels. As a result, it reduces the flow of blood which carries oxygen to the uterine. Eventually, it can lead to failure in the contractions and prolonged labor time.<sup>11,16,17</sup>

Individuals with an introvert personality tend to be more reserved. These people are shy and not very talkative. They prefer things related to knowledge rather than socializing. Introverts prefer regularity in life and always have an organized plan before doing something. In facing problems, an introvert rarely behaves aggressively. They tend to be calm and able to control their feelings well. Therefore, this kind of person is able to maintain patience. Introverts have much better ability in conflict management than extroverts.<sup>14,16</sup>

According to Eysenck and Wilson in Cale,<sup>21</sup> people with type A personality tend to develop symptoms of stress, characterized by irritability, aggressiveness, and lack of self-control in expressing displeasure and disappointment. Extroverts are prone to stress. People with this personality type tend to have a competitive nature, aggressive, like challenges, and are prone to emotional outbursts. The competitive nature makes extroverts try hard to prove superiority to others and are achievement-oriented. In addition to their competitive nature, this personality type also like challenges, so it is often made under pressure both from themselves and their environment. Aggressive nature makes extroverts impatient and irritable when dealing with people who are against them. Explosive emotion may not be useful in this type of problem. An event may be considered as normal for some people, but for this personality type the same events are

major events that can cause serious problems.<sup>14,21</sup> This is reinforced by the opinion of Potter and Perry,<sup>22</sup> that personality causes different reactions to the same sources of stress.

According Gunarsa,<sup>23</sup> a person's personality type affects the psychological response of the mother during childbirth. In this study, the personality type that was assessed as a risk for the incidence of prolonged second stage was extrovert or type A. Some mothers felt that birth was a traumatic experience. For type A personality, childbirth may trigger a greater of stress hormones, such as catecholamines and adrenaline. The release of these hormones can inhibit the release of the hormone oxytocin which is a hormone produced naturally by the body which aims to stimulate uterine contractions. When the hormone oxytocin is inhibited, it will weaken uterine contractions. This resulted in prolonged childbirth process.<sup>23</sup>

Personality type has significant influence on the duration of second stage of labor. It is necessary to provide support and psychological support from family and birth attendants to avoid stress on mothers, especially for extrovert women in order to prevent prolonged labor. A mother's personality type is one of the important factors which affect her psychological condition and labor process.<sup>16</sup>

This study used a case control design because the prevalence of prolonged second stage of labor was rare. The main focus of retrospective investigation was the outcome (prolonged second stage of labor). Then it was traced backward to see the exposure (personality type). Similar study was conducted on the relationship between personality traits and labor pain intensity by Yadollahi *et al*,<sup>24</sup> but study used cross-sectional design. Some biases in this study were controlled. Selection bias was controlled by selecting the case and control groups, which used the same criteria and sampling from the same population. Bias control was conducted by blinding in data collection (personality type). This means that data were gathered by an enumerator who did not know the status of outcomes (duration of labor). This study also involved a control. Control of confounders was conducted by using multivariable analysis. The results showed that the correlation between personality type and duration of labor remained significant when covariates were controlled for. Chance variation was accounted for by using CI and p value.<sup>18</sup>

The results of this study indicated that there was a significant correlation between extrovert personality type and prolonged second stage of labor with p value = 0.000 and 95% CI 3.72 to 18.4, p value < 0.05 with narrow CI. These results strongly suggest that the relationship found was not due to random variation. The results of this study may reasonably be generalized to all women who give



birth with the same type in all district hospitals in Yogyakarta.

### Conclusion

Extrovert personality type has a strong correlation with prolonged second stage of labor after controlled by other factors. Type A mothers have a risk 8.2 times higher (95% CI: 3.7-18.4) for prolonged second stage of labor than type B mothers.

### Recommendation

It is necessary to provide support and psychological support for family and birth attendants to avoid stress among mothers, especially for extrovert women in order to prevent prolonged labor. To expand the domain of study, it is necessary to replicate this study in various multicenter populations.

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