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Email : [lppm@unusa.ac.id](mailto:lppm@unusa.ac.id)

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# Paper 4

*by* Sherly Jenlawaty 4

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RESEARCH ARTICLE

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Factors Affecting Menopause

Rijanto<sup>1(CA)</sup>, Sherly Jeniawaty<sup>2</sup>

<sup>1(CA)</sup>Health Polytechnic of Surabaya, Indonesia; ryno\_louhan@gmail.com (Corresponding Author)

<sup>2</sup>Health Polytechnic of Surabaya, Indonesia; sherlyjenyawaty@gmail.com

ABSTRACT

**Background:** The age of menopause between woman and other women is not similar and it depends on the factors that influence it. Some opinions suggest that menopause occurs at the age of 48-50 years, including in the climacteric period which is a syndrome of endocrine, somatic, and psychic changes at the end of the fertile / reproductive period (40-65 years). **Objective:** Analyze factors affecting menopause to woman. **Methods:** The type of this conducted research was survey research that was descriptive analytic. Population in this research was all women who aged 45-50 years at BPS Media in Surabaya, and there were 46 women. Multivariate analysis was conducted by utilizing multiple logistic regression in order to predict how far the value of dependent variable when the value of independent variable changed. **Results:** Multiple logistic regression analysis was performed to determine the effect of independent variables simultaneously to the dependent variable. The variable of menarcheage, job status, number of children, age in childbirthing for last child, contraception use, smoking, alcohol consumption, and disease history had  $p < 0.25$  and treated simultaneously by using forward stepwise method with 95% of confidence level. From the result of multiple logistic regression analysis, it turned out that the variable of menarche age ( $p = 0.762$ ), the last childbirth age ( $p = 0.231$ ), alcohol consumption ( $0.659$ ), and disease history ( $p = 0.711$ ) had no significant influence which  $p$  value was greater rather than  $\alpha$  value ( $0.05$ ), thus, it was excluded from the multiple logistic regression analysis model. Based on the result of multiple logistic regression analysis, the employment status, the number of children, the use of contraception, and smoking correlated with occurrence of menopause with the probability value was smaller than  $\alpha$  value ( $0.05$ ), which work status was  $p = 0.033$ ,  $p = 0.003$ , and smoking was  $p = 0.003$ . **Conclusion:** From the result of multiple logistic regression analysis, it was found that job status, number of children, contraception use, and smoking were simultaneous correlated with the occurrence of menopause, which each variable had a smaller probability value than  $\alpha$  value ( $0.05$ ), employment status ( $p = 0.033$ ), number of children ( $p = 0.000$ ), contraception use ( $p = 0.004$ ), and smoking ( $p = 0.003$ ). From the results of logistic regression equations, it was known that the probability of premature menopause was occurred if woman who worked, had children less than 4 children, never used contraception, and ever smoked were 0.95 or 95%.

**Keywords:** Factors, Menopause, Women

INTRODUCTION

Background

Several women who think to be old often become a frightening thing. This anxiety perhaps begins from a thought that she will be unhealthy, unfit, and will not be beautiful anymore. This condition is actually unpleasant and painful information which are heard. Whereas, menopause period is one of phases that must be coped by woman in her life as well as with phases in other lives, such as childhood and reproduction period. However, the feeling of over anxiety caused the woman very difficult to cope recent period<sup>(1)</sup>. As we know that, menopause age between woman and other women is not similar and it depends on factors that influence it. Several opinions stated that menopause was occurred in the age of 48-50 years, including in climacterium period, which was a syndrome of endocrine change, somatic change, and psychic change in last fertile/ reproductive period (40-65 years old)<sup>(2)</sup> and this period was generally occurred in the age of 50s years. This period reminded the woman against the process to be old which was caused by her reproduction organ lowered. Menopause was occurred in climacterium period, which was a period that was occurred a change from reproductive phase to be non-reproductive phase. The occurrence of menopause itself was very individual (variative), however, generally, it was occurred to the woman who was about 48-55 years old<sup>(3)</sup>. The total and proportion of female population who were above 50 years old that was estimated to be in menopause age from year to year also increased significantly. According to Population Census in 2000, total of female population who were above 50 years old were recently 15.5 million people or

7.6% from the total of population. Meanwhile, in 2020, the total was estimated to increase to be 30 million or 11.5% from the total population. Furthermore, according to projection of Indonesian population in 2035, Indonesian population reached 305,6 millions of people with the total women who were life in menopause age were about 30.3 millions of people and the total male population in andropause age would reach 24.7 millions of people<sup>(4)</sup>.

There were many factors that related to menopause age. According to Kasdu (2002)<sup>(1)</sup>, several factors were the first time age of menstruation, stress, the use of contraception method, family status (such as marriage, the total of children, and the age while birthing last child), family history, occupation, woman who consumed alcohol in Subdistrict of North Krembangan, Surabaya in 2010. Besides, the other factors were also income, smoking, and alcohol drinking. In addition, there were also several other factors, such as water/ air pollution, the impact of pathogen toxic or radiation, the behavior of modern life style, diet habit, physical exercise (sport), the impact of sun, sexual behavior, and mental disorder<sup>(5)</sup>. Regarding many factors that related to menopause age and the limits of data, the researchers of this research only researched the factors, such as menarche age, job status, marital status, the total of children, the age of child birthing for last child, contraception use, smoking habit, and woman who consumed alcohol at BPM Media Surabaya.

### Statement of the problem

What were the factors that affected menopause age for the woman?

### Objective of the study

Analyze the factors that affected menopause age for the woman at BPS Media Surabaya.

### Limitations of study

Researchers realized that there were still many limitations in this research that had been conducted. The limitations in this research were correlated with the number of respondents who were obtained.

## METHODS

The type of this conducted research was descriptive analytic survey research. Population in this research was all of the women who were 45-50 years old at BPS Media in Surabaya and there were 46 women. Furthermore, multivariate analysis was conducted by utilizing multiple logistic regression, which was in order to conduct prediction of how far the dependent variable value when independent variable value changed.

## RESULTS

### Simple Logistic Regression Analysis

In order to know the functional correlation between one dependent variable and more than one independent variable, it needed to use multivariate analysis with logistic regression statistic test. In first stage, it was conducted simple logistic regression analysis in order to determine the qualified variable that was as covariate in multivariate logistic regression analysis through determining the significance in 25%. Criteria of the significance that was used was quite big for enabling the covered variables which were actually important to be able to be in model of multivariate logistic regression analysis and so that the variables were collectively to be important predictor for the result of variables and to be able to be in multivariate model.

Table 1. The result of simple logistic regression analysis

No.	Variable	5% CI for EXP(B)		p
		Lower	Upper	
1.	Menarche Age (UM)	0.191	0.889	0.024
2.	Job Status (PK)	0.226	1.276	0.177
3.	Workload (BK)	0.424	1.736	0.671
4.	Marital Status (M)	0.567	2.965	0.730
5.	Total of Children (P)	1.992	10.557	0.000
6.	Age in child birthing for last child (UA)	1.003	6.424	0.049
7.	Contraception Use (KB)	1.621	9.869	0.003
8.	Contraception Type (JK)	0.000	-	0.999
9.	Smoking (RK)	1.250	6.246	0.012
10.	Alcohol Consumption (AK)	0.591	15.745	0.183
11.	Disease History (RP)	0.879	61.783	0.066

By determining p value in 0.25 that was seen in table 4.32, from 11 independent variables which were analyzed, it was obtained 8 variables (menarche age, job status, total of children, age in child birthing for the last child, contraception use, smoking, alcohol consumption, and disease history) which qualified the criteria and being proper to be in the model of multivariate analysis.

### 7 Multiple Logistic Regression Analysis

Multiple logistic regression analysis was conducted in order to know the impact of independent variable together against dependent variable. However, the variable of menarche age, job status, total of children, age in child birthing for the last child, contraception use, smoking, alcohol consumption, and disease history had p value < 0.25 and those were managed together by utilizing forward stepwise method with confidence level in 95%. Based on the result of multiple logistic regression analysis, actually the variable of menarche age ( $p=0.762$ ), age in child birthing the last child ( $p=0.231$ ), alcohol consumption (0.659), and disease history ( $p=0.711$ ) did not have any significant influence. Therefore, it was not in category of multiple logistic regression analysis model.

Table 2. The result of multiple logistic regression analysis

No.	Variable	B	95% CI for EXP(B)		p
			Lower	Upper	
1.	Job Status	-1.396	0.069	0.891	0.033
2.	Total of Children	2.580	4.164	41.836	0.000
3.	Contraception Use	1.655	1.691	16.193	0.004
4.	Smoking	1.841	1.884	21.100	0.003
5.	Constants	-1.806	-	-	0.000

According to the result of multiple logistic regression analysis, it was obtained that job status, total of children, contraception use, and smoking together correlated with the occurrence of menopause with probability value was smaller than  $\alpha$  value (0.05), which were job status ( $p=0.033$ ), total of children ( $p=0.000$ ), contraception use ( $p=0.004$ ), and smoking ( $p=0.003$ ).

## DISCUSSION

From the result of double logistic regression analysis, it was obtained that job status, total of children, contraception use, and smoking together correlated with the occurrence of menopause in which each variable had smaller probability value rather than  $\alpha$  value (0.05): job status ( $p=0.033$ ), total of children ( $p=0.000$ ), contraception use ( $p=0.004$ ), and smoking ( $p=0.003$ ).

Based on the result of logistic regression equation, it could be known that the probability of premature menopause was occurred if the woman who worked had children less than 4 children, never used contraception, and ever smoked, which was in 95%. Furthermore, this was in accordance with Yatim's opinion (2001), who stated that woman who did not work would be older to undergo menopause period rather than woman who worked and being not married because this correlated with woman's psychic condition. The many number of the children, the woman would be longer to be in menopause period because it correlated with the process of pregnancy and childbirth. This was occurred because the pregnancy and childbirth would lower the work system of reproduction organ and lower the process of body aging. Besides, woman who used contraception would be also longer to be in menopause period because the contraception tools suppressed hormone function from ovaries, thus, it would not produce ovum. In addition, woman who smoked would cope premature menopause period rather than woman who did not smoke.

## CONCLUSION

From the result, it was found that job status, number of children, contraception use, and smoking were simultaneously correlated with the occurrence of menopause. For the health workers at Public Health Center, they should cooperate with integrated service post for elderly (Posyandu Lansia) at area of BPS Media in order to conduct a counseling regarding physical and psychological change that would be undergone by the women if they were in menopause period, particularly for the women who would be in pre-menopause period. Hence, the women could cope it by good attitude and good actions when they were in menopause period.

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