

Conference Paper

Path Analysis: Motivation of Pregnant Women's Readiness in Exclusive Breastfeeding

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Abstract

Motivation is one of the most essential factors in the formation of behavior. This study aimed to evaluate the direct and indirect effects of motivation as well as other selected variables on readiness for exclusive breastfeeding. This was a cross-sectional study assessing the association of knowledge, access to information, social, cultural, and readiness of pregnant women to exclusive breastfeeding, with motivation as an intermediate variable. The data analysis technique used is path analysis. The study found that social and cultural factors (X3) improve knowledge ($\beta=0.368$) but do not affect access to information ($\beta=0.151$). All knowledge, information access and socio-cultural factor directly affect the motivation of pregnant women to give exclusive breastfeeding: X1 - Y1 with a value of $\beta=0.264$. X2 - Y1 with a value of $\beta=0.316$, and X3 - Y1 with a value of $\beta=0.284$ while the motivation of pregnant women significantly influences the readiness in exclusive, breastfeeding with the value $\beta=0.333$. So it can be concluded that knowledge, access to information, and social and cultural factors could directly and indirectly influence the readiness of pregnant mothers in exclusive breastfeeding. The indirect effect is mediated by the motivation of pregnant women in breastfeeding exclusively.

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1. Introduction

One of the primary considerations of the Indonesian government to achieve the Millennium Development Goals (MDGs) is a health and nutrition in the first year of life the infant because the infant is a human resource in the future [1]. It is suitable with the declaration of the WHO (2008), the government legitimated a policy through government regulation which states that the local government district/city is responsible for the program of exclusive breastfeeding, which means giving only breast milk to infants up to the age of 6 months. To support this program, every mother is also required to conduct preparation during pregnancy.

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The readiness of pregnant women in exclusive breastfeeding is a form of precedence (early indicators) to them for giving exclusive breastfeeding or not. In other words, the readiness can be said as a form of early behavioral for a mother to decide to breastfeed exclusively. Readiness is a form of maturity for someone to face a new situation and is one of the crucial things that must be owned by a person to decide anything. According to Huncock (1999), the maturation process will lead to development [2]. In the context of exclusive breastfeeding, a pregnant woman progressing until she is ready to provide exclusive breastfeeding is the result of the maturation process both physiologically and psychologically. This study emphasizes the development process from the psychological side.

Preparation of breastfeeding during pregnancy is essential. Mothers who prepare early will be better prepared to breastfeed her infant. One factor that must be considered during pregnancy is the psychological preparation in which the primary step that needs to be done is to cultivate motivation, in addition to other things such as to increase knowledge and to seek support from family and health workers [3]. As the definition put forward by Robins (2007), pregnant women who are motivated to give exclusive breastfeeding will make efforts to achieve that goal [4].

Various studies have reported several factors that can construct and influence the motivation of pregnant women to breastfeed exclusively. In a previous study [5], researchers developed a complete structural model in which one of them involves three factors internal and two external factors that are hypothesized to contribute to motivation. In the current study, researchers ignore the contribution of each factor indicators and try to focus on the relationship between variables. The model proposed now involves only internal factors, namely knowledge about exclusive breastfeeding (how much material is known and understood pregnant women associated with exclusive breastfeeding), access to information (how much effort in finding information about exclusive breastfeeding), and socio-cultural (how much exposure and acceptance of the values or beliefs and traditions that exist in society). The primary objective of this study was to analyze the influence of the three internal factors forming these motivations on the readiness of pregnant mothers in exclusive breastfeeding.

2. Methods

This was a cross-sectional study conducted with the subjects of pregnant women who live in Surakarta. A total of 150 respondents. The instrument was a questionnaire that was enclosed developed to measure the five variables. All the indicators that measured each

variable have been validated both in terms of language or sentence structure (*content validity*) and in terms of the construct (*convergent-divergent validity with confirmatory factor analysis*). All constructs (variables) also had high reliability (*Cronbach's alpha* > 0.9). The Path analysis was used as the data analysis technique. Data processing was performed using *SPSS for Windows* version 13.

3. Results and Discussion

Respondents were mothers expecting her first child with variations in age from less than 20 years until the '30s, where mostly aged 21-25 years (64.0%). The education level of respondents is relatively high because most of them had a minimum of formal education up to graduated from high school and college (81.4%). Most respondents are housewives or do not work (56.7%), and the majority of them were married for less than two years (68.0%). Description of the characteristics of respondents can be seen in Table 1.

TABLE 1: Respondents Characteristics.

Characteristics	N (total=150)	F%
Age		
16-20 years old	11	7.3
21-25 years old	96	64, 0
26-30 years old	38	25.3
31-35 years old	3	2.0
36-40 years old	2	1.3
Education		
Elementary	2	1.3
Junior High School	26	17.3
Senior High School	79	52.7
College	43	28.7
Employment Status		
Working	65	43,3
Do not work	85	56,7
Length of Marriage		
< 2 years	102	68.0
2-5 years	44	29.3
> 5 years	4	2.7

The relation between variables was analyzed in this study and was described in the form of structural models without involving the measurement model, or in other words, assuming all the variables are *manifest* (grades or scores was observed, by summing the score of all items indicator). This type of structural model does not need to be analyzed

with SEM (*Structural Equation Modeling*) complex but by path analysis. The statistics are used to assess the degree of correlation between one variable with another variable called path coefficient which is a standardized regression coefficient (or often called *beta* coefficient). The relationship schema determines the regression model required for the analysis is shown in the path diagram as shown in Figure 1.

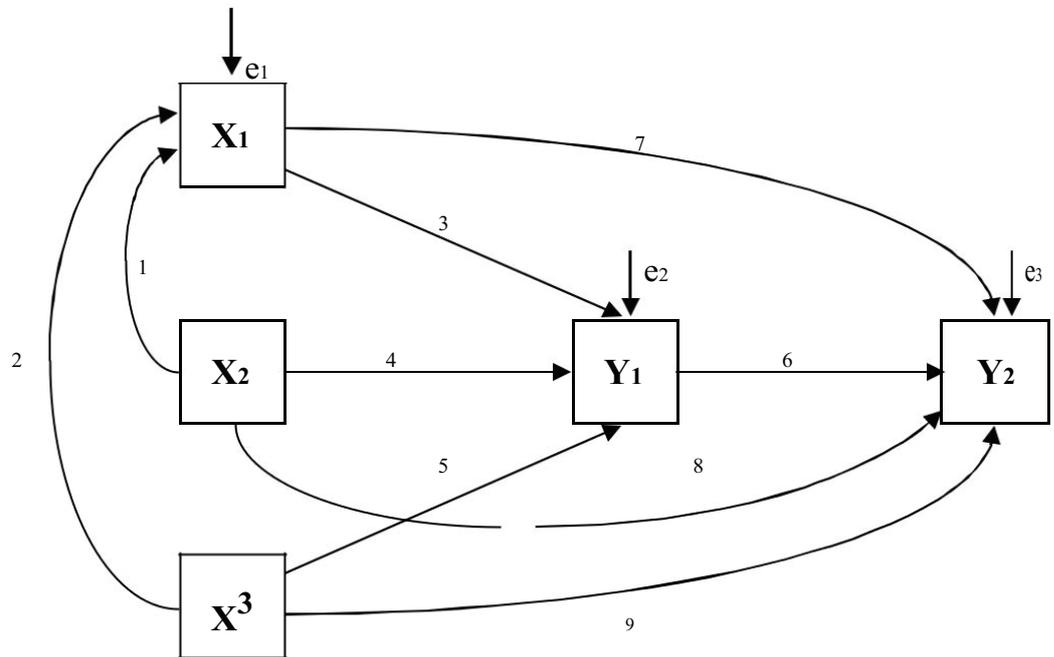


Figure 1: Line Diagram Scheme (*Path Analysis*) and Path Coefficient. The relation between Research Variable

Based on the path diagram in Figure 1, the relationship between variables in this study can be formulated mathematically in the form of regression equations of the standard as follows:

$$X_1 = {}_1X_2 + {}_2X_3 + e_1$$

$$Y_1 = {}_3X_1 + {}_4X_2 + {}_5X_3 + e_2$$

$$Y_2 = {}_6Y_1 + {}_7X_1 + {}_8X_2 + {}_9X_3 + e_3$$

Description:

X = the knowledge about exclusive breastfeeding

X2 = information access

X3 = socio-culture

Y1 = motivation in exclusive breastfeeding

Y2 = the readiness of exclusive breastfeeding

1 ... 9 = path coefficient or beta coefficient

$e_1 \dots e_3 = \text{error model}$

Path coefficients or beta coefficient declare the direct relationship between two variables connected with an arrow where the path coefficients are. The relationship is indirectly calculated by multiplying the coefficient values in each lane lines which are not straight and then summing the product of all the indirect pathway. The result of the calculation of the coefficient values track (direct connection) and indirect relationships between variables can be seen in Table 2.

TABLE 2: A Complete Recapitulation of Direct (Path Coefficient) and Indirect Connection Between Variables in This Research.

No	relationship between	Direct		Indirect	
		Notation	Value	Notation	Value
1	X2 with X1	β_1	0,151	-	-
2	X3 with X1	β_2	0,368 *	-	-
3	X1 with Y1	β_3	0,264 *	-	-
4	X2 with Y1	β_4	0,316 *	$\beta_1 \beta_3$	0,040
5	X3 with Y1	β_5	0,284 *	$\beta_2 \beta_3$	0,097
6	Y1 with Y2	β_6	0,333 *	-	-
7	X1 with Y2	β_7	0,142	$\beta_3 \beta_6$	0,088
8	X2 with Y2	β_8	0,051	$\beta_4 \beta_6 + \beta_1 \beta_3 \beta_6 + \beta_1 \beta_7$	$(0,105) + (0,013) + (0,022) = 0,140$
9	X3 with Y2	β_9	-0,012	$\beta_5 \beta_6 + \beta_2 \beta_3 \beta_6 + \beta_2 \beta_7$	$(0,094) + (0,032) + (0,052) = 0,179$

Description: the notation in bold represents the path with the path coefficient value or the largest path coefficient multiplication results; * $P < 0.05$

Based on the calculations in Table 2 the interpretation of the path analysis as follows:

- 3.1. X3 (social and cultural) had a significant direct effect on X1 (knowledge of exclusive breastfeeding) while X2 (access to information) did not give a significant effect directly to X1 (knowledge of exclusive breastfeeding). There was no indirect path relation on X2 and X3.
- 3.2. X1 (knowledge of exclusive breastfeeding) had a significant direct effect on Y1 (motivation for exclusive breastfeeding). There is no indirect path relation X with Y1
- 3.3. X2 (access to information) and X3 (social and cultural) each have a significant effect directly on Y1 (exclusive motivation breastfeeding). Both X2 and X3 had an indirect relation path with Y1 through X1, but the magnitude of indirect relationships are relatively much smaller than the direct relationship.
- 3.4. Y1 (exclusive motivation breastfeeding) significant direct effect on Y2 (readiness for exclusive breastfeeding). There is no indirect path relation on Y1 and Y2.

3.5. X1 (knowledge of exclusive breastfeeding) had no significant effect directly on Y2 (readiness for exclusive breastfeeding). X1 has an indirect path relation to Y2 through Y1, but the magnitude of such an indirect relationship is not greater than the direct relationship.

3.6. X2 (access to information) and X3 (social and cultural) each no significant effect directly on Y2 (readiness for exclusive breastfeeding). Both X2 and X3 both have three indirect path relation to Y2 through X1 through Y1 and X1 and Y1. The relations of all channels (direct or indirect), the most significant influence X2 and X3 respectively on Y2 obtained on a track indirectly through Y1.

From the description above, it can be concluded that the socio-cultural influence on the knowledge of exclusive breastfeeding but does not affect to access to information. These three variables are each directly influence the motivation of exclusive breastfeeding. The motivation for exclusive breastfeeding affects the readiness of exclusive breastfeeding. Knowledge, information access, social and cultural have no direct influence on the readiness of exclusive breastfeeding. Nevertheless, these three factors contribute to readiness in exclusive breastfeeding is as forming motivation.

Various models explain how the formation of the behavior of which the developmental theory of Erikson [6] and *precede-proceed* theory from Green [7]. The model proposed in this study is based on the merger of both theories with theoretical expectations of Victor [8] as in how big is the effort in finding the information (access to information) and how much exposure and acceptance of the values or beliefs and traditions that exist in society (social and cultural) is estimated to have an influence on a pregnant woman's knowledge about exclusive breastfeeding. The analysis of the proposed model of social and cultural shows only a significant effect on knowledge. Our previous studies [9] assumed independence between knowledge, access to information, and social, with the aim of giving a focus on internal factors such a third contribution in the form of motivation. Thus, the assumption of independence between knowledge and access to information remains valid, while the assumption of independence between the social knowledge of the culture needs to be reviewed. The results of this study provide empirical evidence of how the level of exposure and acceptance of the values and traditions of the community is a little more, but it certainly can determine the understanding of pregnant women about exclusive breastfeeding.

Internal and external factors can form motivation. External factors for motivation pregnant mothers in exclusive breastfeeding may include support from family and health workers [10]. This study only analyzed the internal factors and external factors even

without involving even just a control variable. Nevertheless, the results obtained are consistent with our previous studies [9] which include both internal and external factors. As the results of previous studies, third internal factors such as knowledge, information access, and socio-cultural, significant effect on motivation and have no direct influence on the readiness of pregnant women in exclusive breastfeeding. Further motivation significantly affects readiness. Even though it is not proven yet, but the results of this study indicate the role of internal factors, such as knowledge, access to information, social and cultural, in encouraging readiness of pregnant women in exclusive breastfeeding, forming motivation.

4. Conclusion

The main conclusion of this research is that there are several factors that influence the motivation of pregnant mothers to exclusively breastfeed and to the readiness in exclusive breastfeeding. The internal factors including knowledge about exclusive breastfeeding, access to information as well as social and cultural factors influence the readiness in exclusive breastfeeding. The third contributing factor forms the motivation of pregnant mothers to exclusively breastfeed.

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