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Model of Back Acupressure, Infant Attachment-Position, and Breast Massage on Breast Milk Factors

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ABSTRACT

The most common cause of failure in the breastfeeding process is due to various problems experienced by breastfeeding mothers. One of the causes breastfeeding failure is the mother feels that the milk does not come out or only comes out a little. Efforts that can be made to stimulate milk production are combination of complementary therapies, namely back acupressure, baby positioning and attachment, breast massage. The purpose of the study was to analyze the model of mother's back acupressure, baby position and attachment, breast massage on colostrum and milk production secretion. The research design was descriptive explanatory survey. The sample size was determined based on the rule of the thumb (5 x the number of parameters studied). There were 18 parameters in this study, so the required sample size was 5 x 18 = 90 respondents. The sample was 90 breastfeeding mothers with purposive sampling technique. The sample criteria were mothers who breastfeed babies aged 0-6 months with spontaneous delivery in Sidoarjo Regency. The research was carried out in July-August 2021. Data analysis with structural equation-partial least square (PLS). The results showed that there was an influence of breastfeeding mothers on back acupressure factors, baby position and attachment, breast massage (T=2.587), health care factors on breastfeeding factors (1.957), back acupressure factors, baby position and attachment, breast massage on breastfeeding factors (2,132). Back acupressure, baby positioning and attachment, breast massage can help increase colostrum secretion and breast milk production for breastfeeding mothers. Furthermore, further research can be carried out related to hormonal levels of breastfeeding mothers.

Keywords: back acupressure; breast massage; attachment-position

INTRODUCTION

Background

The best and most important food for babies because the nutritional content is in accordance with the baby's needs is breast milk. Breast milk given to infants at the age of 0-6 months is called exclusive breastfeeding. Then, at the age of 6 months to 12 months, babies get complementary foods. Breast milk is very beneficial for babies because it can optimize their growth and development [(1,2)]. Exclusive breastfeeding can affect infant morbidity and mortality because the content in breast milk includes various kinds of nutrients that are very useful so that babies are not susceptible to infectious diseases.

The World Alliance for Breastfeeding Action (*WABA*) says that babies will not get sick or get infected easily if after birth, especially in the first hour of birth, Early Breastfeeding Initiation is immediately carried out so that the baby's immune system becomes strong. Furthermore, the baby is exclusively breastfed until the age of six months. However, WHO data shows that the average exclusive breastfeeding mother in the world is only about 38%. In Indonesia, data on exclusive breastfeeding mothers is still below the national target (80%) which is 55.7% (2015) and 54% (2016). In East Java it was 74.1% (2015), in 2016 it was 31.3% [(3,4)]. Data for exclusive breastfeeding at Candi Puskesmas is 47.7% (2019) [(5)].

The low number of exclusively breastfeeding mothers is influenced by many factors, including the incessant advertising or promotion of formula milk [(6,7,8,9)], there is a culture of giving mashed bananas with rice then given to

babies aged 4 months [10], culture of giving a pacifier to calm the baby, as well as a culture of giving prelacteal intake such as honey or water when breast milk has not come out [11,12]. The assumption that formula milk is better because the price is expensive and the baby becomes healthy (fat) and the mother does not want to breastfeed because the mother is afraid that breastfeeding can change the shape of the breast so that it is no longer attractive [13]. The assumption that breastfeeding is outdated and imitates friends or neighbors or relatives giving formula milk [14].

Women who have given birth need special skills in caring for babies, especially in meeting baby nutrition. Skills needed to promote milk production include correct positioning and attachment of the baby, postnatal breast massage, or complementary techniques such as oxytocin massage, endorphin massage, or back acupressure. This can help breastfeeding mothers become more confident to breastfeed exclusively. Milk production for the first time until the second day is generally still very little. However, on the fifth day, there will be an increase of about 500 ml. In the second week it increases by about 600-690 ml and in the third to fifth month it increases by about 750 ml. Breast milk production can follow the baby's needs for the necessary nutrients. If the baby's needs increase, the milk production will also increase according to the frequency of breastfeeding. The more often the baby suckles, the more milk is produced. Conversely, if the baby gets additional food other than breast milk or the frequency of breastfeeding decreases, the milk production will also decrease [15,16].

Efforts that can be made to increase breast milk production include early initiation of breastfeeding, correct baby position and attachment, breast massage after delivery, consuming vegetables such as katuk leaves, torbangun leaves, papaya leaves, beluntas leaves, or consuming nuts, herbs, and drink lots of water [12,17]. However, it is still not enough to help breastfeeding mothers in increasing milk production. Therefore, it is necessary to do a combination of actions, namely acupressure on the mother's back, position and attachment of the baby, breast massage after delivery, which is abbreviated as TOPMAS. It turns out that by doing a combination of these actions can help increase milk production.

Purpose

The purpose of this study was to analyze the model of maternal back acupressure, baby position attachment, and postpartum breast massage on colostrum production and milk production in Candi District, Sidoarjo Regency.

METHODS

The research design used an explanatory survey to explore the gaps between the findings or the reality with the theory related to the factors that can realize the full-blooded model, the baby's attachment position, and postpartum breast massage on colostrum production and milk production. The research population was breastfeeding mothers who live in Candi District, Sidoarjo Regency. The sample size was determined based on the rule of the thumb. This study had 18 parameters so that the required sample size was 5 x 18 = 90 people. The sampling technique used purposive sampling. The research instrument used questionnaires and observation sheets. The inclusion criteria included breastfeeding mothers who were willing to become research respondents, breastfeeding mothers with spontaneous delivery, and mothers breastfeeding infants aged 0-6 months. The research was carried out in three villages in the Candi District, Sidoarjo Regency in April-July 2021.

Data analysis using PLS, namely analysis of structural equations based on variance. This data analysis could simultaneously test the measurement model as well as the structural model. Testing the measurement model (outer model) and testing the structural model (inner model). While testing the structural model to determine the significance of the relationship between exogenous and endogenous factors so as to get the right model [18].

RESULTS

The research was carried out in three villages in the Candi District, Sidoarjo Regency, namely Balongdowo Village, Balonggabus Village, and Kebon Sari Village. Respondents for each village were 30 people with a total of 90 respondents.

Table 1 shows that most of the respondents were aged 25-34 years (60%), the majority of respondents education was senior high school (74.5%), the most respondents' job status was not working (58.9%), the most respondents who have parity were two births (54,5%), the most respondents had one child (54.5%) and the most of the respondents gave birth normally (76.7%). This shows that respondents were of productive age with sufficient education and most of them do not work, gave birth spontaneously, had one child so that the possibility of exclusive breastfeeding is large.

Table 2 shows that the most for the role of health workers with sufficient criteria was 61.1%, the most for early initiation of breastfeeding with sufficient criteria was 90%, the most for the class of pregnant women with less criteria was 68.9%, and the most for postpartum visits with less criteria was 61.1%. This shows that the support of health workers for mothers to be able to breastfeed exclusively is great.

Table 3 shows that the most social kinship factors with sufficient criteria were 62.2% and the most lifestyle factors with sufficient criteria were 66.7%. This shows that family support is needed by mothers in order to be able to breastfeed exclusively.

Table 4 shows that the most back acupressure factor with sufficient criteria was 58.9%, the position and attachment of the most infants with less criteria was 62.2%, and the most postpartum breast massage with less criteria was 55.6%. This shows that it is necessary to take a combination of actions to obtain maximum results in supporting exclusive breastfeeding mothers.

Table 1. Factors of breastfeeding mothers in Candi District, Sidoarjo Regency on April-July 2021

Breastfeeding mother factor		Frequency	Percentage
Age	< 25 year	13	14.4
	25-34 year	54	60.0
	35-45 year	23	25.6
	>45 year	0	0
Level of education	Elementary school	2	2.2
	Junior high school	21	23.3
	Senior high school	67	74.5
Job status	Not work	53	58.9
	Work	37	41.1
Parity	First parity	38	42.2
	Second parity	49	54.5
	Third parity	3	3.3
Number of children	1 child	49	54.5
	2 child	40	44.4
	3 child	1	1.1
Give birth	Spontaneous	69	76.7
	Operation	21	23.3

Table 2. Health service factors in Candi District, Sidoarjo Regency on April-July 2021

Health service factors		Frequency	Percentage
Role of health workers	Good	35	38.9
	Sufficient	55	61.1
Early initiation	Good	6	6.7
	Sufficient	81	90.0
	Less	3	3.3
Pregnant women class	Sufficient	28	31.1
	Less	62	68.9
Postpartum visit	Good	4	4.4
	Sufficient	31	34.4
	Less	55	61.1

Table 3. Environmental factors in Candi District, Sidoarjo Regency on April-July 2021

Environmental factors		Frequency	Percentage
Social kinship	Good	6	6.7
	Sufficient	56	62.2
	Less	28	31.1
Life style	Good	4	4.4
	Sufficient	60	66.7
	Less	26	28.9

Table 4. TOPMAS factor in Candi District, Sidoarjo Regency on April-July 2021

Topmast factors		Frequency	Percentage
Back acupressure	Good	3	3.3
	Sufficient	53	58.9
	Less	34	37.8
Position and attachment	Good	1	1.1
	Sufficient	33	36.7
	Less	56	62.2
Breast massage	Good	10	11.1
	Sufficient	30	33.3
	Less	50	55.6

Table 5. Factor of breastfeeding in Candi District, Sidoarjo Regency on April-July 2021

Factors of breastfeeding		Frequency	Percentage
Colostrum	Sufficient	46	51.1
	Less	44	48.9
Breast milk production	Sufficient	51	56.7
	Less	39	43.4

Table 5 shows that the most colostrum expenditure with sufficient criteria was 51.1% and the most breast milk production with sufficient criteria was 56.7%. This shows that a combination of actions can help expel colostrum and produce breast milk, but still needs to be researched on the frequency and duration of the action.

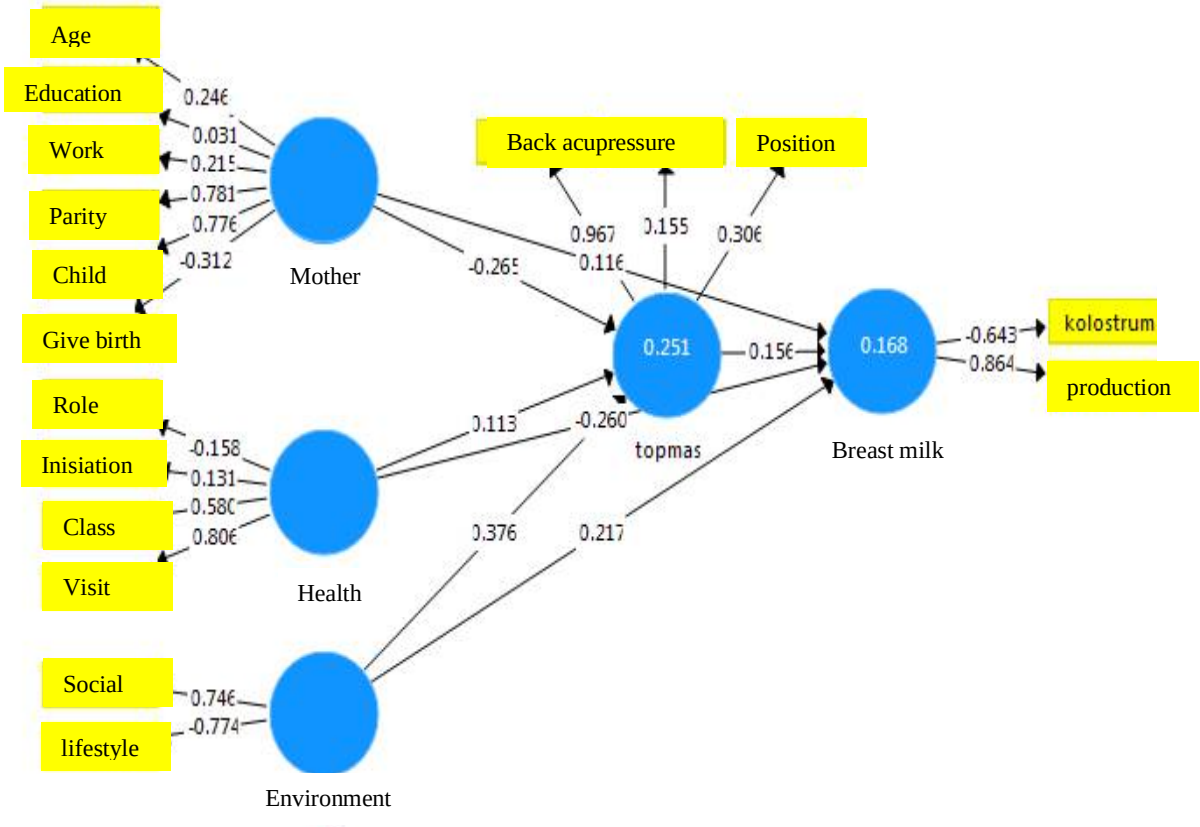

Figure 1. T-statistic value path chart

Figure 1 shows that not all T-statistical values in the path diagram have values greater than the T-table value of 1.96. The path is the path of breastfeeding mother factor (X1) to topmas factor (X4) with T statistic 2.587, health service factor (X2) to breastfeeding factor (Y1) with T statistic 1.957, and topmas factor (X4) to breastfeeding factor (Y1) with a T statistic of 2.132. While the variables that showed an insignificant relationship were the breastfeeding mother factor (X1) with the breast milk factor (Y1) with a T statistic of 1.223, the health service factor (X2) on the topmas (X4) with a T statistic of 1.436, the environmental factor (X3) on the topmas factor (X4) with a T statistic of 1.253, environmental factors (X3) on breast milk (Y1) with a T statistic of 1.267. This shows that not all factor pathways affect the production of colostrum and milk production. The path of the most dominant factor influencing is the path of the breastfeeding mother factor (X1) to the topmas factor (X4) with a T statistic of 2.587.

DISCUSSION

This study emphasizes that full-bloodedness, baby attachment-position, and postpartum breast massage are done to influence breastfeeding factors (colostrum production and milk production) so that mothers are able to meet the nutritional needs of their babies with exclusive breastfeeding. Back acupressure, baby latching position, and postpartum breast massage are a combination of complementary techniques to help expel colostrum and increase milk production. Back acupressure is done by pressing the right and left shoulder blades alternately, followed by pressing the T1-T6 area with the thumbs (right, left, and the top of T1-T6). Next, press with the tips of the ring, middle, and index fingers (from bottom to top) on the middle of the back alternately between the right, middle, and left.

One type of complementary therapy that is carried out in the back area is back acupressure, which is commonly abbreviated as topung. Back acupressure aims to break down fat deposits in the blood vessels that block blood circulation and stimulate the back nerves. High levels of cholesterol in the blood increase the likelihood of thickening

of the artery walls caused by cholesterol plaques. When the walls of the blood vessels become thick and stiff due to the buildup of cholesterol, the arteries lose their elasticity and become stiff. As a result, the blood vessels cannot expand elastically when the heart pumps blood through the blood vessels and the blood is pushed hard to get through the narrow blood vessels. As a result, the supply of oxygen needed by body cells for the continuity of their functions (physiological organs) is disrupted.

Blood is responsible for delivering nutrients and oxygen to the body's cells. When blood flow is disturbed (not smooth), then the supply of nutrients and oxygen needed by the body's cells will be disrupted. Back acupressure is done by pressing and vibrating the fingertips at certain points in the back area. This pressure makes blood flow smooth so that breastfeeding mothers feel comfortable and stimulates the release of endorphins and lactation hormones. Emphasis and vibration is carried out for about 10-15 minutes, which can increase a sense of comfort and relaxation so as to stimulate the release of endorphins which give the client a calming effect. Endorphin hormone increases, can stimulate the release of prolactin and oxytocin hormones so that milk production increases [(19)]. Research conducted by Kuswati & Istikhomah (2017) shows that giving oxytocin massage can increase the speed of colostrum expulsion and increase milk production.

According to researchers, by doing massage or acupressure such as full-blooded back, can stimulate the production of endorphins as a result of relaxation and comfort of breastfeeding mothers so as to stimulate the release of the hormones prolactin and oxytocin.

The correct breastfeeding position is that the baby's earlobe and upper arm are in a straight line (if a line is drawn). While the correct attachment is that most of the areola goes into the baby's mouth, the baby's mouth is wide open, the baby's lips are folded out while feeding, the baby's chin is attached to the mother's breast, and the baby's cheeks are puffy because they are expressing milk. Research conducted by Kusumawaty (2015) shows that the success of exclusive breastfeeding is supported by good knowledge and insight possessed by mothers. In addition, information support from health workers makes mothers more optimistic in facing obstacles in breastfeeding [(22,23)].

According to researchers, the application of full-blooded back which provides a comfortable feeling coupled with doing the correct position and attachment while breastfeeding, can help increase milk production so that mothers can breastfeed exclusively.

Postpartum breast massage is an action or effort that can be done by the mother so that the breast condition is good and ready to produce breast milk and breastfeed the baby. Postpartum breast massage is useful for stimulating the breasts and improving blood circulation so that it affects the pituitary to secrete the hormones prolactin and oxytocin. The hormone prolactin from the anterior pituitary will affect the amount of milk production. While the hormone oxytocin from the posterior pituitary will affect the process of expulsion of breast milk. Postpartum breast massage also takes care of the nipples of nursing mothers to keep them clean and prevent blisters. Research conducted by Fatmawati, *et al* (2019) showed that milk production increased after breast massage was performed.

According to researchers, the application of three actions, abbreviated as topmast, can launch and increase milk production because all three are able to stimulate the release of hormones related to breast milk production, namely the hormones prolactin and oxytocin. Mother's back acupressure, correct breastfeeding position and attachment, and breast massage after delivery can stimulate the production of endorphins as a result of relaxation and comfort for breastfeeding mothers, thereby stimulating the release of the hormone oxytocin. However, further research is needed on the duration and frequency needed to help breastfeeding mothers increase milk production.

CONCLUSION

The model found in this study is the path of the breastfeeding mother factor (X1) to the topmas factor (X4), the health care factor pathway (X2) to the breastfeeding factor (Y1), and the topmas factor pathway (X4) to the breastfeeding factor (Y1) so that the combination Several measures, namely mother's back acupressure, baby-attachment position, and breast massage after delivery can facilitate the release of colostrum and milk production. However, to find out how big the effect of the combination of actions is, further research can be done, especially the effect of the combination of actions (topmas) on the release of the hormones prolactin and oxytocin.

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