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The Relationship between Expressed Breast Milk Management and The Success of Exclusive Breastfeeding among Working Mothers at Banyumas Regional General Hospital

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(Received:	27 October 2023	Revised: 22 November	Accepted: 26 December)				
KEYWORDS breastfeedin g; working mother; breastmilk	ABSTRACT: Introduction: Maternal employment significantly influence breastfeeding rates. The challenges of exclusive breastfeeding are often more prevalent among working mothers due to limited time spent with their infants, coupled with demanding work schedules that leave little time for expressing breast milk or nursing. Objectives: This study aimed to understand the relationship between expressed breast milk management and						
	the success of exclu Methods : The type sectional approach. 12 months, selected method. Data analys	 the success of exclusive breastfeeding among working mothers. Methods: The type of research employed in this study is retrospective descriptive research with a cross-sectional approach. The research sample consists of RSUD Banyumas working women with children aged 6-12 months, selected based on inclusion and exclusion criteria, totalling 32 individuals using the total sampling method. Data analysis was conducted using chi-square correlation analysis. 					
	Results : The mean a (D3-S1), comprisin respondents (46.9% (53.1%). Based on the expression method breastfeeding, totalit tailed) is 0.002, with reveal a p-value of alternative hypothes expression method a	Results : The mean age of the participants was 26-45 years. The majority of respondents had higher education (D3-S1), comprising 29 respondents (90.6%), and most of them worked as nurses/midwives, totalling 15 respondents (46.9%). Regarding parity, some respondents had more than one child, precisely 17 respondents (53.1%). Based on the research results obtained from 32 respondents, the majority have a moderate breast milk expression method, which is 20 individuals (62.5%), and most of them have successful exclusive breastfeeding, totaling 18 individuals (56.3%). The research findings indicate that the significance value (2-tailed) is 0.002, with a sample size (N) of 32 respondents and an alpha (α) value of 0.05. Chi-square test results reveal a p-value of 0.002, which is smaller than the alpha value of 0.05, indicating the acceptance of the alternative hypothesis (Ha). Therefore, the analysis results demonstrate a correlation between the breast milk expression method and the success of exclusive breastfeeding among working mothers at RSUD Banyumas.					
	Conclusions : Givin the correct method vitamins and minera both the mother an process of successfu	g expressed breast milk correctly can affect benefits both the baby and the mother. F als that are essential for the baby. The appre- d the baby during breastfeeding, leading illy providing exclusive breastfeeding can p	the success of exclusive breastfeeding because Proper breastfeeding maintains the content of opriate technique also enhances the comfort of to maximum milk production. Therefore, the proceed effectively.				

1. Introduction

Maternal and Child Health (MCH) issues persist in Indonesia, primarily driven by the high Infant Mortality Rate (IMR). The IMR is a key indicator of health status under the Sustainable Development Goals (SDGs) and the National Medium-Term Development Plan (RPJMN) 2015-2019. Evaluating the success of health standards involves assessing the number of infants exclusively breastfed for six months. The Indonesia Demographic and Health Survey (IDHS) reported an IMR of 24/1,000 live births and a neonatal mortality rate of 15/1,000 in 2017. SDG Three, "Good Health and Well-being,"

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targets significantly reducing infant mortality by 2030 [1].

Exclusive breastfeeding (EBF) entails providing infants with only breast milk for the first six months, excluding other foods or liquids, starting within 30 minutes of birth. Breast milk is acknowledged as the optimal source of nutrition, surpassing human-made infant foods or animal milk such as cow's milk [2, 3]. Proper nutrition from birth to two years ensures quality growth and development while upholding children's rights [4]. Postnatal nutrition is vital to a baby's healthy growth and development.

While the World Health Organization (WHO) aims for an 80% rate of exclusive breastfeeding, several countries need to catch up to this target, experiencing declines [5]. In Indonesia, the percentage of exclusive breastfeeding for infants aged 0-6 months was 71.58% in 2021, marking an improvement from the previous year's 69.62% (Riskesdas, 2021). Failure to achieve exclusive breastfeeding targets can have consequences for mothers and infants.

Factors such as maternal employment significantly influence breastfeeding rates. Based on the 2016 National Labor Force Survey (Sakernas), 72.2% of employed women, totaling 2.1 million, were breastfeeding mothers. This highlights many working breastfeeding mothers (BPS, 2016). The challenges of exclusive breastfeeding are often more prevalent among working mothers due to limited time spent with their infants, coupled with demanding work schedules that leave little time for expressing breast milk or nursing [6]. Studies, such as one by Sari (2015), show a relationship between maternal employment and exclusive breastfeeding, with only 17% of working mothers providing exclusive breastfeeding [7].

Addressing the challenge of exclusive breastfeeding involves managing expressed breast milk. Expressed breast milk management involves systematically regulating milk obtained through various pumping methods, such as manual or electric pumps [8]. This practice serves as a strategy to support the continuity of exclusive breastfeeding programs. Exclusive breastfeeding has been linked to a reduced risk of both infectious and non-infectious diseases, improved Intelligence Quotient (IQ) and Emotional Quotient (EQ) in children, prevention of stunting, and a decrease in infant mortality rates in Indonesia [9]. Mothers equipped with knowledge of effective expressed breast milk management are less likely to resort to formula feeding when faced with situations where direct breastfeeding is not feasible, but milk production remains adequate [10]. Failure in expressed breast milk management may lead parents to introduce formula feeding early, reducing breastfeeding frequency and impacting milk production negatively [11]. Moreover, failure in exclusive breastfeeding may diminish the emotional bond between a mother and her child. Expressed breast milk management allows mothers to store breast milk as a backup for feeding their babies under less conducive conditions.

Working breastfeeding mothers require knowledge of expressed breast milk management to enhance exclusive breastfeeding practices for their infants [12]. Research by Risadi et al (2019) emphasizes that mothers with good knowledge of expressed breast milk management strive to meet their baby's nutritional needs by providing expressed breast milk when leaving home or working [13]. Similarly, Isnawati and Dwihestie (2018) attribute low exclusive breastfeeding rates to mothers' insufficient knowledge of expressed breast milk management [14].

The importance of expressed breast milk management cannot be overstated, as it serves as a solution for mothers facing challenges in direct breastfeeding due to a lack of opportunities to be with their children at all times [15, 16]. Every mother providing expressed breast milk to her baby should be well-versed in appropriate management, including pumping schedules, techniques, storage methods, and when to administer the expressed breast milk. These various aspects of expressed breast milk management are crucial determinants for the success of exclusive breastfeeding, particularly for working mothers.

Given the outlined context, there is a need for research on the relationship between expressed breast milk management and the success of exclusive breastfeeding among working mothers. Expressed breast milk management can contribute significantly to preventing the failure of exclusive breastfeeding practices for their infants.

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2. Objectives

This study aimed to understand the relationship between expressed breast milk management and the success of exclusive breastfeeding among working mothers

3. Methods

Study Design

A retrospective descriptive research with a crosssectional approach using total sampling was conducted. Data were collected from March to May 2023.

Setting and Participants

Women were recruited from RSUD Banyumas in Banyumas District, Central Java Province, Indonesia. The eligibility criteria of participation were women with children aged 6-12 months, aged ≥ 18 years old and working women. Women with a history of mental disorders were excluded. This study recruited 32 participants.

Measurements

The research instruments involve three questionnaires designed to measure the methods of expressing breast milk, storing breast milk, and administering breast milk to working mothers. Before being utilized in the study, these instruments have been tested for validity and reliability.

A sheet of Demographic and Health Characteristics was used to collect information including age, level of education, occupation and parity. All of these variables were self-reported by the participants.

Study Procedure

Ethical approval was obtained from the Institutional Board Muhammadiyah Purwokerto Review of University (KEPK/UMP/55/III/2023). Additionally, permission to conduct the research was acquired from the heads of the hospital RSUD Banyumas prior to conducting the study. The health care providers and staff looked for potential participants among working women visiting the hospital, and then referred potential participants to the researchers, including the principal investigator and five research assistants. If participants met the inclusion criteria and agreed to participate in the study, they were asked to complete a written consent and fill out questionnaires.

Data Analysis

The data were analysed using SPSS version 17. Descriptive statistics (frequencies, percentages, mean and standard deviation) were used to present demographic factors and health characteristics. Chi-square were applied to examine the differences between categorical data.

4. Results

Demographic Factors and Health Characteristics

Based on the research findings, it was discovered that all respondents fell within the adult age range (26-45 years), totalling 32 respondents (100%). The majority of respondents had higher education (D3-S1), comprising 29 respondents (90.6%), and most of them worked as nurses/midwives, totalling 15 respondents (46.9%). Regarding parity, some respondents had more than one child, precisely 17 respondents (53.1%)

Respondent Characteristics	n	%		
Age (Year)				
Adolescent (18-25 years old)	0	0		
Adult (26-45 years old)	32	100		
Elderly (46-65 years old)	0	0		
Education Background				
Elementary Education	0	0		
Secondary Education	3	9,4		
Higher Education	29	90,6		
Occupation				
Nurse/ Midwife	15	46,9		
Pharmacist	5	15,6		
Officer	12	37,5		
Parity				
Primipara (1)	15	46,9		
Multipara (> 1)	17	53,1		

Expressed Breast Milk Management.

Based on the research findings from 32 respondents, it shows that for milk expression techniques, the majority of respondents have moderate proficiency, with 20 respondents (62.5%) having moderate skills, 10 respondents (31.3%) having insufficient skills, and 2 respondents (6.3%) having good skills in milk expression. Regarding breastfeeding techniques, the majority of respondents have inadequate proficiency, with 17 respondents (53.1%) having insufficient skills, 13 respondents (40.6%) having moderate skills, and only 2 respondents (6.3%) having good skills in breastfeeding.

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In terms of breast milk storage techniques, the majority of respondents have moderate proficiency, with 25 respondents (78.1%), while 7 respondents (21.9%) have insufficient skills. As for the success of exclusive breastfeeding, the majority of respondents provide exclusive breastfeeding, with 23 respondents (71.9%), while the remaining 9 respondents (28.1%) do not exclusively breastfeed.

Expressed Breast Milk	n	%		
Management				
Expressed Breast Milk Technique				
Good	2	6,3		
Fair	20	62,5		
Poor	10	31,3		
Breastfeeding Techniques				
Good	2	6,3		
Fair	13	40,6		
Poor	17	53,1		
Breast Milk Storage Techniques				
Good	0	0		
Fair	25	78,1		
Poor	7	21,9		
Success of Exclusive Breastfeeding				
Exclusive Breastfeeding	23	71,9		
Non-Exclusive Breastfeeding	9	28,1		

Relationship between Milk Expression Techniques, Breastfeeding Techniques, Breast Milk Storage Practices and the Success of Exclusive Breastfeeding in Working Mothers at RSUD Banyumas.

Based on the research results obtained from 32 respondents, the majority have a moderate breast milk expression method, which is 20 individuals (62.5%), and most of them have successful exclusive breastfeeding, totaling 18 individuals (56.3%). The research findings indicate that the significance value (2-tailed) is 0.002, with a sample size (N) of 32 respondents and an alpha (α) value of 0.05. Chi-square test results reveal a p-value of 0.002, which is smaller than the alpha value of 0.05, indicating the acceptance of the alternative hypothesis (Ha). Therefore, the analysis results demonstrate a correlation between the breast milk expression method and the success of exclusive breastfeeding among working mothers at RSUD Banyumas.

Based on the research results obtained from 32 respondents, the majority have less optimal breastfeeding practices, with 17 individuals (53.1%) falling into this category. Additionally, most of them have non-exclusive

breastfeeding success, totaling 9 individuals (28.1%). The research findings reveal a significance value (2-tailed) of 0.004, with a sample size (N) of 32 respondents and an alpha (α) value of 0.05. Chi-square test results show a p-value of 0.004, which is smaller than the alpha value of 0.05, indicating the acceptance of the alternative hypothesis (Ha). Therefore, the analysis results demonstrate a correlation between breastfeeding practices and the success of exclusive breastfeeding among working mothers at RSUD Banyumas.

Based on the research results obtained from 32 respondents, it is evident that the majority have moderate breast milk storage practices, accounting for 25 individuals (78.1%). Additionally, the majority of them have successful exclusive breastfeeding, totaling 22 individuals (68.8%). The research findings indicate a significance value (2-tailed) of 0.000, with a sample size (N) of 32 respondents and an alpha (α) value of 0.05. Chi-square test results show a p-value of 0.000, which is smaller than the alpha value of 0.05, indicating that the hypothesis (Ha) is accepted. Therefore, the analysis results demonstrate a correlation between breast milk storage practices and the success of exclusive breastfeeding among working mothers at RSUD Banyumas.

N/:11-							
Expression Techniques	Exclusive		nques Non Exclusive		Total		Sig.
_	n	%	n	%	n	%	
Good	2	6,3	0	0	2	6,3	
Fair	18	56,3	2	6,3	20	62,5	0,002
Poor	3	9,4	7	21,9	10	31,3	
Total	23	71,9	9	28,1	32	100	
Good	2	6,3	0	0	2	6,3	
Fair	13	40,6	0	0	13	40,6	0,004
Poor	8	25,0	9	28,1	17	53,1	
Total	23	71,9	9	28,1	32	100	
Good	0	0	0	0	0	0	
Fair	22	68,8	3	9,4	25	78,1	0,000
Poor	1	3,1	6	18,8	7	21,9	
Total	23	71,9	9	28,1	32	100	

5. Discussion

The research results indicate a correlation between breast milk expression techniques and the success of exclusive breastfeeding among working mothers at RSUD Banyumas. The proper technique for breast milk

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expression can help stimulate the Milk Ejection Reflex. The correct method aims to empty breast milk from the lactiferous sinuses beneath the areola, stimulating prolactin release [17]. The increased prolactin release is expected to trigger mammary alveoli to produce more breast milk [18]. The better the breast milk is emptied or expressed, the more successful the breast milk production, enabling mothers to practice exclusive breastfeeding effectively [19].

The concern for working women in breastfeeding is maintaining milk production during working hours. Regular breast milk expression and the availability of breast milk storage facilities are ways to address this issue, as regular expression stimulates increased breast milk production [20]. Workplaces can provide five facilities to support exclusive breastfeeding: a breast pump, a room for expressing or breastfeeding, break time for expressing breast milk or breastfeeding, a refrigerator for storing breast milk, and support from the workplace [21].

According to Rosida (2020), breast milk management is closely related to the timing, duration, and frequency of breast milk expression [6]. For working mothers, the more frequent and shorter the duration of expression, the higher the breast milk production. Failure to manage time in expressing breast milk may risk reducing the success of exclusive breastfeeding, especially for female workers [22]. Several studies have also indicated that more frequent breast milk expression can significantly increase milk production compared to infrequent expression.

The researcher assumes that the correct breast milk expression technique can influence the success of exclusive breastfeeding because proper expression stimulates milk production. The more frequently a mother expresses breast milk, the more milk she can produce, facilitating the success of exclusive breastfeeding. Working mothers can still provide exclusive breastfeeding by pumping their milk daily before work [23]. The lack of proper expression is often due to limited break time and the absence of dedicated breast milk expression spaces provided by companies. Support from healthcare professionals can enhance knowledge about expressed breast milk. It may include facilities such as breastfeeding rooms and other supportive equipment in the workplace, both in the public and private sectors, to increase the success of working mothers in providing exclusive breastfeeding [24].

Breast milk storage is a practical solution for mothers who work outside the home and may not always be with their infants. Proper breast milk storage contributes to the longevity of breast milk [25]. It can be stored in bottles or plastic clips in approximately 80-100 ml portions, tightly sealed to preserve the milk for an extended period. Correct breast milk storage enhances the success of exclusive breastfeeding. The correct method for giving expressed breast milk involves taking the bottle from the freezer to a warmer compartment in the refrigerator. Subsequently, the bottle containing expressed breast milk stored in the fridge can be placed in a clean bowl with warm water before being given to the baby. Repeated freezing after thawing should be avoided. Additionally, heating expressed breast milk with a microwave or boiling it should be avoided as it can damage the vitamins in the milk and make it too hot for the baby's mouth. Breast milk can be given to the baby using a bottle or a special baby cup (cup feeder). However, if the mother is with the baby, it is advisable to encourage direct breastfeeding to stimulate optimal milk production [26].

The correct breastfeeding method requires patience and commitment to achieving success in exclusive breastfeeding. There are various methods for breastfeeding, either directly from the breast or indirectly using a dropper, bottle, or spoon. Knowledge of the correct breastfeeding process, including how to hold the baby to ensure proper breastfeeding and adjusting body positions for comfort during breastfeeding, is crucial. Learning these techniques contributes to the success of exclusive breastfeeding, as emphasized in the study by Zuraidah (2019) [27]. According to the study, proper breastfeeding techniques are one of the factors associated with optimal milk production. Comfort in breastfeeding is not only about the mother's comfort but also about the baby's comfort, which impacts maximum milk production. Achieving comfort and optimal milk production can occur when the mother has proper breastfeeding techniques, and this is the key to the success of exclusive breastfeeding.

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Conclusions

Giving expressed breast milk correctly can affect the success of exclusive breastfeeding because the correct method benefits both the baby and the mother. Proper breastfeeding maintains the content of vitamins and minerals that are essential for the baby. The appropriate technique also enhances the comfort of both the mother and the baby during breastfeeding, leading to maximum milk production. Therefore, the process of successfully providing exclusive breastfeeding can proceed effectively.

Proper storage of expressed breast milk can influence the success of exclusive breastfeeding. Incorrect storage can compromise the nutritional quality of breast milk, leading to spoilage and failure in providing exclusive breastfeeding. Additionally, proper breast milk storage is influenced by maternal knowledge. In this study, most respondents have a good level of education and are in a hospital environment, where information about breastfeeding is abundant. Therefore, providing exclusive breastfeeding can be successful even when mothers are working.

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