p-ISSN: 2089-6778
e-ISSN: 2549-5054

ANALYSIS OF SOCIODEMOGRAPHIC FACTORS AND EXCLUSIVE BREASTFEEDING SUCCESS IN KARANGANYAR DISTRICT

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Article Information

Received:
September 15, 2023

Revised:
December 06, 2023

Accepted:
January 08, 2024

Available Online:
January 30, 2024

Abstract

Breastfeeding is a crucial program with a significant impact on the health and nutrition of toddlers. Additionally, it also offers benefits for mothers. In 2018, the rate of exclusive breastfeeding in Central Java Province was 65.57%, while Karanganyar District stood at 62.3%. Various factors influence exclusive breastfeeding, including interpersonal relationships, mother and baby characteristics, environmental factors, support systems, institutional elements, and socioeconomic and cultural conditions. This study aimed to assess sociodemographic factors' influence on exclusive breastfeeding's success. It employed an analytic, cross-sectional approach and utilized purposive sampling, involving 55 mothers with infants aged 0-6 months who visited the Health Center for child immunization. The research instrument used was a closed questionnaire, and data analysis was conducted using logistic regression analysis with the SPSS version 16.0 program. The findings revealed that three of five sociodemographic variables—parity, education level, and maternal employment status—significantly affected exclusive breastfeeding. Sociodemographic factors influence exclusive breastfeeding success by 52.1%, indicating that 48.9% of other factors beyond the variables studied also play a role. These research results can inform the development of health education programs for pregnant women in their third trimester, focusing on exclusive breastfeeding in preparation for the breastfeeding period.

Keywords*: exclusive breastfeeding, sociodemographic*

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1. Introduction

Breast milk is the optimal and most natural nourishment for infants. Exclusive breastfeeding is crucial, providing only breast milk to infants from birth to 6 months without any other foods or drinks. The six months of exclusive breastfeeding is supported by research, which indicates that introducing complementary foods too early can have adverse effects on infants. Prioritizing breastfeeding, especially exclusive breastfeeding, is essential due to its significant impact on infants' health and nutritional well-being.[1,2,3]

Exclusive breastfeeding offers various benefits for infants, providing a complete nutrient supporting their growth and development, enhancing mental and emotional intelligence, and bolstering their immune system against infectious diseases. Furthermore, it provides advantages for the mother, such as improving uterine contractions to reduce bleeding risk, lowering the likelihood of breast cancer, and boosting maternal confidence.[2]

p-ISSN: 2089-6778
e-ISSN: 2549-5054

Despite the numerous benefits of breast milk, there is a lack of motivation among mothers to exclusively breastfeed their babies, as evidenced by the relatively low rates of exclusive breastfeeding. These rates decline as the baby grows older, with only 37.3% of infants aged 0-5 months being exclusively breastfed. In 2018, the coverage of exclusive breastfeeding in Central Java province was 65.57%, compared to 54.4% in 2017. In Karanganyar District, the coverage was 62.3% in 2018.[5,6] The success of breastfeeding is influenced by various factors, including interpersonal relationships, maternal and baby characteristics, environmental factors, support, institutional factors, socioeconomic conditions, and prevailing cultural norms.[7,8]

Research by Sihombing in 2018 highlighted the link between maternal education and exclusive breastfeeding. Additionally, the failure of exclusive breastfeeding can stem from mothers believing that their milk production is insufficient for the baby's needs over six months. [9] Other studies have also shown a correlation between maternal perceptions and exclusive breastfeeding.[10] Successful exclusive breastfeeding requires preparation during the antenatal and intrapartum periods and support and motivation from family members, particularly husbands. This study aimed to provide an overview of sociodemographic factors influencing the success of exclusive breastfeeding, which can be valuable for more effective health education.

2. Method

A study was conducted from April to May 2020 in the health center area of Karanganyar Regency. The data collection sites included five randomly selected public health centers, taking into account the geographical and locational conditions of the Karanganyar Regency area. These public health centers were Karanganyar, Tasikmadu, Kebakkramat, I, Matesih, and Tawangmangu.

This analytical approach used a cross-sectional design [12]. The sampling technique was accidental sampling, resulting in a sample of 55 mothers with infants aged 0-6 months who visited the public health center for their children's immunization.

The independent variable in this study is the success of exclusive breastfeeding, while the dependent variable is sociodemographic factors. Data was collected using a questionnaire containing inquiries regarding the mothers' identities and their exclusive breastfeeding history. The data collection process commenced with submitting a permit to the Karanganyar District Health Office and a copy to the targeted public health centers. Prior to data collection, informed consent was obtained from the mothers to use them as research subjects. Subsequently, the researcher conducted interviews and documented the responses provided by the participants.

The interview data was coded, edited, and tabulated. Bivariate analysis was then conducted using logistic regression with the SPSS version 16.0 program.

3. Result and Discussion

a. Univariate analysis

Univariate analysis provides an overview of the characteristics of the research subjects, the following data were obtained

Table 1. Respondents Characteristics

Characteristic	f	%
Exclusive Breastfeeding		
No	21	38.2
Yes	34	61.8
Age		
<30 years old	29	51.7
>30 years old	26	47.3
Parity		
Primipara	23	41.8
Multipara	32	58.2
Education Level		
Below University Degree	26	47.3
University Degree	29	52.7
Employment		

p-ISSN: 2089-6778
e-ISSN: 2549-5054

Yes	14	25.5
No	41	74.5
Family Income		
< minimum wage	21	38.2
> minimum wage	34	61.8

Table 1 shows that most mothers provide exclusive breastfeeding, with 34 respondents (61.8%) falling into this category. Additionally, most respondents are under 30 years old, with 29 mothers (52.7%) in this age group. Furthermore, 32 mothers (58.2%) have given birth more than once (multipara), and 29 people (52.7%) have studied up to high school and college level. Moreover, 34 people (61.8%) come from families with an income above the minimum wage, and 41 people (74.5%) are mothers who do not work outside the home.

b. Prerequisite Test of Logistic Regression Analysis

1) Interation History

Tabel 2. Interation History

Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients Constant
Step 0	1	73.145	.473
	2	73.144	.482
	3	73.144	.482

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 73,144

c. Estimation terminated at iteration number 3 because parameter estimates changed by less than ,001.

The results of the iteration history in block 0 with N = 55 obtained a -2 logarithmic probability value of 74.144, more significant than the X2 table at DF 54 and probability 0.05 = 72.1532. This rejection of H0 indicates that the model, before entering the independent variable, "does not fit" the data.

2) Classification table

Table 3. Variables in the Equation

B	S.E.	Wald	Df	Sig.	Exp(B)
.482	.278	3.014	1	.083	1.619

The Beta (B) coefficient value of the constant is 0.278 with an Odds Ratio or Exp (B) of 1.619. The significance value of the p-values from the Wald test is 0.083.

3) Omnibus test result

Table 4. Omnibus test

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	26.546	5	.000
	Block	26.546	5	.000
	Model	26.546	5	.000

The significance value of the omnibus test is 0.000, which is less than 0.005, indicating a significant effect of the independent variables simultaneously on the dependent variable. This means that the addition of the independent variable has a real influence on the dependent variable.

4) Hosmer dan Lemeshow Test

Hosmer and Lemeshow's test determines the correctness of the model. It is considered correct if no significant difference exists between the model and its observed value. The test yields the following results:

Tabel 5. Hosmer and Lemeshow test result

	Step	Chi-square	Df	Sig.
1		3.344	8	.911

The Hosmer and Lemeshow test results for the model obtained a significance value of 0.911, more significant than 0.05,

p-ISSN: 2089-6778
e-ISSN: 2549-5054

meaning that the logistic regression model is feasible and can explain the relationship between independent and dependent variables.

c. Bivariate Analysis

Table 6. Bivariate Analysis Results

Variable	N	Df	Sig	Exp (B)
Age	55	1	0.294	0.325
Parity	55	1	0.021	13.958
Education Level	55	1	0.005	21.071
Employment	55	1	0.020	7.617
Family Income	55	1	0.086	0.196

The analysis presented in Table 6 shows that three out of the five dependent variables under consideration influence exclusive breastfeeding in infants. The sociodemographic factors encompass parity, educational attainment, and maternal employment status. Notably, the p-value associated with the age variable is 0.294, surpassing the 0.05 threshold, thereby signifying that maternal age does not exert a statistically significant impact on the exclusive breastfeeding of infants. This finding is consistent with the outcomes of Astuti's research (2013), which similarly indicated a lack of substantial correlation between maternal age and exclusive breastfeeding ($p \geq 0.05$).[13] Conversely, Sriningsih's study (2011) divulged that factors such as age, education, knowledge, motivation, attitude, and belief were pivotal in influencing a mother's decision to breastfeed. Notably, the mean age of respondents who engaged in breastfeeding was 30, while those who did not breastfeed averaged 26 years of age.[14]

Concerning maternal parity, the calculated p-value stands at 0.021, falling below the 0.05 threshold, thus indicating that maternal parity impacts exclusive breastfeeding. The Exp(B) value of 13.958 suggests that multiparous mothers are significantly more inclined to engage in exclusive breastfeeding than first-time mothers (primipara). Notably, most participants in the study were multiparous, constituting 32 mothers (58.2%). The variance in the number of children has a discernible effect on a mother's breastfeeding experience and childcare responsibilities. First-time mothers typically necessitate more direct exposure to breastfeeding. These findings are congruent with the conclusions drawn from Mahud's investigation (2014), which similarly demonstrated a notable association between parity and exclusive breastfeeding, with most respondents being multiparous (57.1%, $p=0.04$).[15]

The correlation analysis pertaining to maternal educational attainment yielded a p-value of 0.005, signifying that maternal education does indeed influence exclusive breastfeeding. Most mothers had attained educational qualifications up to high school and possessed a university degree, accounting for 29 individuals (52.7%). The Exp(B) value of 21.071 suggests that mothers with higher educational attainment are markedly more inclined to engage in exclusive breastfeeding than those with lower education levels. Education represents a fundamental human necessity; higher levels of educational attainment render information more accessible, and the knowledge acquired can significantly influence behavior, including breastfeeding practices. These outcomes align with Astuti's research (2013), which similarly identified a significant correlation between education and exclusive breastfeeding ($p=0.025$).[13]

The bivariate analysis revealed a statistically significant association

p-ISSN: 2089-6778
e-ISSN: 2549-5054

between maternal employment status and exclusive breastfeeding of infants, as evidenced by a p-value of 0.020, less than the conventional threshold of 0.05. Most respondents in the study are identified as housewives, constituting 41 individuals, or 74.5% of the sample. This observation is consistent with previous research conducted by Sihombing (2018), which also indicated a notable correlation between maternal employment and exclusive breastfeeding, supported by a p-value of 0.005. Furthermore, Wigunantiningsih (2021) corroborated these findings, demonstrating a significant relationship between the employment status of mothers and exclusive breastfeeding, as indicated by a chi-squared (X2) value of 8.785, surpassing the critical X2 table value of 3.841, with a p-value of 0.003, falling below the 0.005 threshold. It is worth noting that non-working mothers tend to have more flexibility in breastfeeding their infants while working mothers encounter challenges due to time constraints and the process of expressing and administering breast milk to their infants. These findings contrast the study by Fakhidah and Palupi (2018), which reported no significant impact of employment status on exclusive breastfeeding, with a p-value of 0.088. This discrepancy may be attributed to similar knowledge about breastfeeding among working and non-working mothers.[17]

Moreover, the analysis of family income variables revealed no significant influence on exclusive breastfeeding, with a p-value of 0.086, exceeding the customary threshold of 0.05. The study categorized family income into two groups, namely, < 3,000,000 and > 3,000,000, with 34 respondents (61.8%) falling into the latter category. This finding is consistent with the research conducted by Berutu (2021), which similarly found no discernible relationship between income and exclusive breastfeeding, supported by a p-value of 0.224, surpassing the 0.05 threshold. It is imperative to acknowledge that income plays a pivotal role in shaping families' socioeconomic status and their approach to childcare.[18]

d. Odds Ratio

The findings indicate that the logistic regression analysis produced bivariate analysis and odds ratio values. The Nagelkerke R Square value of 0.521 and Cox & Snell R Square value of 0.383 suggest that the independent variables, such as maternal age, education, parity, employment status, and family income, collectively account for 52.1% of the variation in the dependent variable, exclusive breastfeeding. This implies that approximately 48.9% of the variance in exclusive breastfeeding is attributable to factors beyond those included in the study. Exclusive breastfeeding is influenced by various factors, including maternal education, occupation, age, social support, health worker support, pacifier use, insurance ownership, and health services received during antenatal, intrapartum, and postpartum periods.[19]

Various studies on exclusive breastfeeding have reported diverse findings for each variable. Some studies have identified the influence of breastfeeding mothers' psychology, family support, and breastfeeding knowledge and counseling on exclusive breastfeeding practices.[20]

4. Conclusion

The sociodemographic variables significantly influence the success of exclusive breastfeeding, accounting for 52.1% of the variance. This suggests that approximately 48.9% of the variance is attributable to other factors, including

p-ISSN: 2089-6778
e-ISSN: 2549-5054

maternal interpersonal relationships, infant characteristics, support systems, environmental conditions, and socioeconomic and cultural factors.

5. Acknowledgment

We express our gratitude to the Institute for Research and Community Service of STIKes Mitra Husada Karanganyar for their invaluable support in implementing research activities and providing resources for our research teams and students. Additionally, we extend our appreciation to the head of the Karanganyar District Health Office and the midwives from the Public Health Centers for their generous assistance and cooperation, which significantly contributed to the successful execution of this research.

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