The Relationship Between Postpartum Mother's Knowledge and Colostrum Provision to Newborns at the Tanah Abang Sub-District Health Center

Devi Yulianti
Sekolah Ilmu Kesehatan RSPAD Gatot Soebroto, Indonesia
Email : deviyulianti794@gmail.com

Christin Jayanti
Sekolah Ilmu Kesehatan RSPAD Gatot Soebroto, Indonesia
Corresponding author email: christin_jayanti@yahoo.co.id

Abstract---*Colostrum is the first breast milk rich in benefits for babies and ideally given before exclusive breastfeeding. WHO and Unicef recommend giving breast milk one hour after birth, as all babies need colostrum to fight infections, which is estimated to save one million baby lives. However, over 90% of mothers discard colostrum, mainly due to lack of information. In Indonesia, the coverage of colostrum provision is still low, requiring further research. This study aims to determine the relationship between postpartum mothers' knowledge and the provision of colostrum to newborns at the Tanah Abang Sub-District Health Center. The study is descriptive-analytic with a cross-sectional approach. The sample consists of 32 postpartum mothers registered at the Tanah Abang Sub-District Health Center, selected using accidental sampling. Data collection is done using a questionnaire, and data analysis uses the chi-square test. The research results show that the p-value is 0.000, thus rejecting the null hypothesis (Ho) and accepting the alternative hypothesis (Ha). These findings indicate a significant relationship between mothers' knowledge and the provision of colostrum to newborns. In conclusion, maternal knowledge significantly influences the behavior of providing colostrum to newborns.*
Keywords---*colostrum feeding, knowledge, newborns, postpartum mothers.*

Introduction

Colostrum is the first milk that comes out after the baby's birth, a thick yellowish fluid that has many benefits. It is essential to give colostrum first, followed by exclusive breastfeeding. The government supports the WHO and United Nations (UNICEF) policy of providing breast milk within one hour after birth as a life-saving measure, as early breastfeeding can save 22% of infants who would otherwise die before one month of age (Harun & Jumriani, 2018). In developing countries, infants who receive artificial milk experience higher morbidity and infant mortality compared to those given breast milk, mainly due to infections and malnutrition (Anggeni, 2018).

The World Health Organization (WHO) recommends that all infants receive colostrum to fight infections, estimated to save one million infant lives. However, over 90% of mothers dispose of colostrum. Some factors inhibiting immediate colostrum provision include fear of the baby getting cold, mothers being too tired to breastfeed immediately, inadequate colostrum production, and the influence of the mother's knowledge (Zurrahmi, 2020).

According to the Basic Health Research of Indonesia (RISKESDAS) in 2018, specific data on colostrum provision was not available. However, the success of colostrum provision can be seen from the proportion of Early Initiation of Breastfeeding (IMD) data for infants aged 0-23 months in all provinces of Indonesia, which is 58.2% (Kemenkes RI, 2018). According to data from the Indonesian Demographic and Health Survey (SDKI) in 2017, the national coverage of colostrum provision is 28.9%, lower than the target coverage of 34.5% in Indonesia. Various obstacles to colostrum provision include maternal knowledge, cultural beliefs, and lack of information from healthcare providers in promoting the importance of colostrum provision (Kemenkes RI, 2018).

The knowledge of postpartum mothers about the definition and benefits of colostrum is crucial. Many postpartum mothers do not give colostrum because of a lack of information from healthcare providers and misconceptions within the community that colostrum is "stale" and unnecessary for newborns. In this regard, having proper knowledge about colostrum would lead mothers to value and provide it to their babies after delivery (Situmorang, 2019; Jaster, 2005; Malmuthuge et al., 2015).

Based on a preliminary survey conducted in the Tanah Abang Sub-District Health Center's Delivery Room, out of 9 postpartum mothers, 4 (44.4%) provided colostrum to their newborns, while 5 (55.5%) did not due to immediate referrals after delivery and some mothers having limited knowledge. Hence, this study aims to investigate the relationship between postpartum mother's knowledge and colostrum provision to newborns (Groer & Morgan, 2007; Weiss & Lokken, 2009; Durham et al., 2011).

Method

The research is an analytical survey with a cross-sectional approach. The population consists of 32 postpartum mothers at the Tanah Abang Sub-District Health Center. The sampling technique used is Accidental sampling, where all available samples can be taken from the entire population. Data analysis employs the chi-square test.

Results and Discussion

Frequency distribution of respondents

Table 1

Frequency of respondents based on age at the Tanah Abang Sub-District Health Center

No.	Age	Frequency	Percentage
1.	At risk (< 20 ->35 years old)	4	12,5 %
2.	Not at Risk (20-35 years old)	28	87,5 %
Total		32	100 %

Based on Table 1 above, the frequency distribution of respondents based on their highest age is as follows: 28 respondents (87.5%) are in the non-risk age group (20 years - 35 years), and 4 respondents (12.5%) are in the risk age group (<20 years - >35 years).

Table 2

Frequency of respondents based on their last education at the Tanah Abang Sub-District Health Center

No.	Education	Frequency	Percentage
1.	Low (Elementary School)	2	6,3 %
2.	Medium (Junior High School - High School)	27	84,4 %
3.	High (College/University)	3	9,4 %
Total		32	100 %

Based on Table 2 above, the frequency distribution of respondents based on their highest education is as follows: 27 respondents (84.4%) have a medium level of education (Junior High School - High School), 3 respondents (9.4%) have a high level of education (College/University), and the lowest is 2 respondents (6.3%) with a low level of education (Elementary School).

Table 3

Frequency of postpartum mothers providing and not providing colostrum at the Tanah Abang Sub-District Health Center

No.	Colostrum Provision	Frequency	Percentage
1.	No	5	15,6 %
2.	Yes	27	84,4 %
Total		32	100 %

Based on Table 3 above, the frequency distribution of mothers who provide colostrum is 27 respondents (84.4%), while the frequency distribution of mothers who do not provide colostrum is 5 respondents (15.6%).
Bivariate analysis

Table 4
The relationship between postpartum mothers' knowledge and colostrum provision in newborn babies at the Tanah Abang Sub-District Health Center

Postpartum Mothers' Knowledge	Colostrum Provision				Total		P-value
	Given		Not Given				
	N	%	N	%	N	%	
Good	16	50%	0	0%	16	50%	0,000
Sufficient	11	34, 4%	0	0%	11	34, 4%	
Poor	0	0%	5	15, 6%	5	15, 6%	
Total	27	84, 4%	5	15, 6%	32	100%	

Based on Table 4, it is known that the result of the statistical test on the relationship between Postpartum Mothers' Knowledge and Colostrum Provision in Newborn Babies using the chi-square test yielded a p-value of 0.000. Therefore, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. These findings indicate a significant relationship between knowledge and the provision of colostrum to newborn babies (Levine et al., 2001; Tulandi et al., 2006).

The results of the study indicate that the frequency distribution of the relationship between postpartum mothers and the provision of colostrum to newborns is as follows: 16 respondents (50%) showed good distribution, 11 respondents (34.4%) had sufficient knowledge, and 5 respondents (15.6%) had inadequate knowledge. The statistical test results on the variable of maternal knowledge using the chi-square test yielded a p-value of 0.000, leading to the rejection of the null hypothesis (Ho) and acceptance of the alternative hypothesis (Ha). These findings demonstrate a correlation between knowledge and the provision of colostrum to newborns (Goshin et al., 2019; Branquinho et al., 2019; Poreddi et al., 2020).

This finding is supported by the theory proposed by Hadi (2021), which suggests that several factors hinder mothers from providing colostrum, including knowledge. Challenges in colostrum provision arise due to either lack of awareness or misconceptions, leading to non-provision of colostrum to their babies. Many mothers do not provide colostrum to their infants after delivery because they are unaware of the content of colostrum. This aligns with the research conducted by Murdiana (2017), stating that the better the postpartum mothers' knowledge, the more likely they are to provide colostrum to their newborns.

Knowledge itself is the measure of understanding an object, which is the result of a person's sensory perception, including the five senses (hearing, sight, smell, etc.), as mentioned by Reihana (2021). The analysis of respondent characteristics revealed that education is one of the essential factors influencing knowledge. It is expected that individuals with higher education have broader knowledge (Mediastari, 2020). However, it should be emphasized that individuals with lower education levels do not necessarily have lower knowledge. Knowledge can be obtained not only from formal education but also from non-formal education (Reihana, 2021). Additionally, age also influences an individual's cognitive ability and mindset, resulting in increased knowledge acquisition (Suwaryo & Yuwono, 2017). According to Ita Budianti (2017), a person's knowledge can be interpreted on a qualitative scale as follows:
1) Good Knowledge: 76% - 100%
2) Sufficient Knowledge: 56% - 75%
3) Insufficient Knowledge: <56%.

Conclusion

There is a relationship between postpartum mothers' knowledge and colostrum provision in newborn babies with a p-value of 0.000 < α: 0.05. Therefore, it can be concluded that there is a significant relationship between knowledge and colostrum provision in newborn babies at the Tanah Abang Sub-District Health Center. Further research is recommended to expand the sample size and conduct a qualitative exploration of barriers and misconceptions with better outcomes.

References

Anggeni, U. (2018). Hubungan Pengetahuan Ibu Post Partum Dengan Pemberian Kolostrum Pada Bayi Baru Lahir Di BPM Choirul Mala, SKM, SST, M. Kes Palembang Tahun 2017. *Jurnal Kesehatan dan Pembangunan*, *8*(16), 72-78.

Arbyn, M., Gultekin, M., Morice, P., Nieminen, P., Cruickshank, M., Poortmans, P., ... & Weiderpass, E. (2021). The European response to the WHO call to eliminate cervical cancer as a public health problem. *International journal of cancer*, *148*(2), 277-284.

Branquinho, M., Canavarro, M. C., & Fonseca, A. (2019). Knowledge and attitudes about postpartum depression in the Portuguese general population. *Midwifery*, *77*, 86-94. https://doi.org/10.1016/j.midw.2019.06.016

Durham, H. A., Lovelady, C. A., Brouwer, R. J., Krause, K. M., & Østbye, T. (2011). Comparison of dietary intake of overweight postpartum mothers practicing breastfeeding or formula feeding. *Journal of the American Dietetic Association*, *111*(1), 67-74. https://doi.org/10.1016/j.jada.2010.10.001

Dwi, M., & Tjarono, S. (2019). *Pengaruh Pemberian Sertifikat Lulus Asi Eksklusif Terhadap Pencapaian Asi Esklusif Di Wilayah Puskesmas Godean I Kabupaten Sleman, Yogyakarta* (Doctoral dissertation, Poltekkes Kemenkes Yogyakarta).

Fatmawati, A. P., Kep, I. S., & Ns, M. (2013). *Hubungan status ekonomi orangtua dengan pemberian ASI eksklusif pada bayi usia 0-6 bulan di Baki Sukoharjo* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).

Goshin, L. S., Sissoko, D. G., Neumann, G., Sufrin, C., & Byrnes, L. (2019). Perinatal nurses' experiences with and knowledge of the care of incarcerated women during pregnancy and the postpartum period. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *48*(1), 27-36. https://doi.org/10.1016/j.jogn.2018.11.002

Groer, M. W., & Morgan, K. (2007). Immune, health and endocrine characteristics of depressed postpartum mothers. *Psychoneuroendocrinology*, *32*(2), 133-139. https://doi.org/10.1016/j.psyneuen.2006.11.007

Hadi, S. P. I. (2021). Kandungan dan Manfaat ASI. *Manajemen Laktasi Berbasis Evidence Based Terkini*, 21-39.

Harun, A., & Jumriani, J. (2018). Faktor Yang Berhubungan Dengan Pemberian Kolostrum Pada Bayi Baru Lahir Di Rskdia Pertiwi Makassar. *Jurnal Kesehatan Manarang*, *3*(1).

Harun, A., & Jumriani, J. (2018). Faktor Yang Berhubungan Dengan Pemberian Kolostrum Pada Bayi Baru Lahir Di Rskdia Pertiwi Makassar. *Jurnal Kesehatan Manarang*, *3*(1).

Herman, H. (2020). the Relationship of Family Roles and Attitudes in Child Care With Cases of Caput Succedeneum in Rsud Labuang Baji, Makassar City in 2018. *Jurnal Inovasi Penelitian*, *1*(2), 49-52.

Ita Budianti, P. (2017). *Hubungan Tingkat Pendidikan Dan Pengetahuan Ibu Nifas Tentang Kolostrum Dengan Pemberian Kolostrum Pada Bayi Usia 0-3 Hari Di Ruang Nifas Rsud Kota Kendari* (Doctoral dissertation, Poltekkes Kemenkes Kendari).

Jaster, E. H. (2005). Evaluation of quality, quantity, and timing of colostrum feeding on immunoglobulin G1 absorption in Jersey calves. *Journal of dairy science*, *88*(1), 296-302. https://doi.org/10.3168/jds.S0022-0302(05)72687-4

Kemenkes RI. (2018). (n.d.). RISKESDAS, 2018. 2018.

Kemenkes RI. (2018). Hasil Riset Kesehatan Dasar Tahun 2018. Kementrian Kesehatan RI, 53(9), 1689–1699.

Levine, E. M., Ghai, V., Barton, J. J., & Strom, C. M. (2001). Mode of delivery and risk of respiratory diseases in newborns. *Obstetrics & Gynecology*, *97*(3), 439-442. https://doi.org/10.1016/S0029-7844(00)01150-9

Malmuthuge, N., Chen, Y., Liang, G., & Goonewardene, L. A. (2015). Heat-treated colostrum feeding promotes beneficial bacteria colonization in the small intestine of neonatal calves. *Journal of dairy science*, *98*(11), 8044-8053. https://doi.org/10.3168/jds.2015-9607

Mediastari, A. A. P. A. (2020). Local wisdom traditional medicine for the health and beauty of postpartum mother in Denpasar City, Bali Province, Indonesia. *International Journal of Health & Medical Sciences*, *3*(1), 65-71. https://doi.org/10.31295/ijhms.v3n1.149

Monika, F. B. (2014). Buku pintar ASI dan menyusui. *Jakarta: Noura Books*.

Murdiana, E. (2017). Manajemen Asuhan Kebidanan Bayi Baru Lahir pada Bayi Ny" S" dengan Hipotermia Sedang di Rumah Sakit Umum Daerah Syekh Yusuf Gowa Tahun 2017. *Universitas Islam Negeri Alauddin Makassar*.

Poreddi, V., Thomas, B., Paulose, B., Jose, B., Daniel, B. M., Somagattu, S. N. R., & Kathyayani, B. V. (2020). Knowledge and attitudes of family members towards postpartum depression. *Archives of Psychiatric Nursing*, *34*(6), 492-496. https://doi.org/10.1016/j.apnu.2020.09.003

200

Reihana. (2021). *Hubungan Pengetahuan Ibu postpartum dengan Pemberian kolostrum pada Bayi Baru Lahir di Rumah Bersalin Sehati*. (Skripsi Sarjana).

Rodin, R. (2021). *Informasi dalam Konteks Sosial Budaya-Rajawali Pers*. PT. RajaGrafindo Persada.

Septiani, M., & Ummami, L. (2020). Faktor-Faktor Yang Memengaruhi Pemberian Kolostrum Pada Bayi Di Bpm Nurhayati, S. Sit Kecamatan Peusangan Kabupaten Bireuen. *Journal of Healthcare Technology and Medicine*, *6*(1), 430-440.

Situmorang A. D. (2019). *Gambaran Pengetahuan Ibu Nifas Yang Menyusui Tentang Kolostrum Di Klinik Heny Kasih Medan*.

Suwaryo, P. A. W., & Yuwono, P. (2017). Faktor-faktor yang mempengaruhi tingkat pengetahuan masyarakat dalam mitigasi bencana alam tanah longsor. *URECOL*, 305-314.

Tulandi, T., Martin, J., Al-Fadhli, R., Kabli, N., Forman, R., Hitkari, J., ... & Casper, R. F. (2006). Congenital malformations among 911 newborns conceived after infertility treatment with letrozole or clomiphene citrate. *Fertility and sterility*, *85*(6), 1761-1765. https://doi.org/10.1016/j.fertnstert.2006.03.014

Weiss, M. E., & Lokken, L. (2009). Predictors and outcomes of postpartum mothers' perceptions of readiness for discharge after birth. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *38*(4), 406-417. https://doi.org/10.1111/j.1552-6909.2009.01040.x

Zurrahmi, Z. R. (2020). Hubungan pengetahuan dan sikap ibu tentang kolostrum dengan pemberian kolostrum di Desa Kuok wilayah kerja Puskesmas Kuok tahun 2019. *Jurnal Doppler*, *4*(1), 49-58.