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EMPOWERMENT OF POSYANDU CADRES IN THE IMPLEMENTATION OF ATRAUMATIC CARE APPROACH: SWADDLE AND SPONGE BATH TO OPTIMIZE NEONATAL ADAPTATION IN PANGURURAN

Dior Manta Tambunan[1], Harsudianto Silaen[1], Rostime Hermayerni Simanullang[1], Kristina Buaton[2], Dikki Samuel Lumbantobing[2]
[1]Department of Nursing, Universitas Murni Teguh, Jl. Kapten Batu Sihombing, Kenangan, Deli Serdang, Sumatera Utara 20371, Indonesia
[2]Bachelor of Nursing Study Program, Universitas Murni Teguh, Jl. Kapten Batu Sihombing, Kenangan, Deli Serdang, Sumatera Utara 20371, Indonesia
*dior.endlessbay@gmail.com

ABSTRACT

Neonates experience transition from the intrauterine to the extrauterine environment which can cause stress and have long-term consequences on the development of the infant's brain. One of the neglected and traumatic neonatal care is bathing. Objective: The objective of this community service is to increase the knowledge level of posyandu cadres and the communities about the application of the atraumatic care approach: swaddle and sponge bath to optimize neonatal adaptation. Method: The implementation method is with pre- and post-tests, cadre briefings, health education and demonstration of the swaddle bath method at the Sait Nihuta Village Hall, Pangururan District. This activity was attended by 6 posyandu cadres, 25 community members which are mothers with infants aged 0-5 months, pregnant women, and mothers planning to have their first/next child). Results: It was found that the pre-test knowledge level of posyandu cadres was low in 3 people (50%) and the post-test knowledge level of posyandu cadres was good for 4 people (66.7%). While the pretest knowledge level of community was low in 14 people (56%) and the posttest knowledge level of community was good in 15 people (60%). Conclusions: It can be concluded that there is a significant increase in knowledge level on posyandu cadres and the community about the implementation of the atraumatic care approach: swaddle and sponge bath to optimize neonatal adaptation. Reccomendation: It is expected that the program will continue through cadres who have been provided with education through materials and demonstrations that have been given to the community.

Keywords: atraumatic care approach; empowerment; neonatal adaptation; posyandu cadres; swaddle bath sponge bath

INTRODUCTION

United Nations (UN) in The Sustainable Development Goals (SDGs) Report 2023 on the third target to improve child health including the survival of newborns, especially neonates. Neonates are 0-28 days of life and a very vulnerable period and have a fairly high mortality rate. The Neonatal Mortality Rate globally has fallen by around 10%, from 20 deaths/1,000 live births to 18. Almost half of these deaths (2.3 million) occur in the first 28 days of life/neonatal period (United Nations (UN), 2023). The World Bank Data report states that the 2021 Birth Rate/1,000 people in 11 Southeast Asian Countries are Timor Leste (ranked 11th) with 25 births, Indonesia (ranked 6th) with 17 births, and Singapore (ranked 1st) with 9 births/1,000 people. Indonesia experienced a decline of 18 (2016 and 2017), and 17 (2018-2021 (2). The Neonatal Mortality Rate (0-28 days) per 1,000 live births in 11 Southeast Asian countries in 2021 were Timor Leste (ranked 1) with 22 live births, Indonesia (ranked 6) with 11 live births, and the best/ranked 11 (Singapore) with 1 live birth. Indonesia experienced a decline in neonatal mortality of 13 (2017 and 2018), 12 (2019 and 2020), and 11 (2021) (The World Bank Data, 2024).

The number of live births based on 10 provinces in 2020 with the highest ranking as the first rank was West Java with 868,555 infants, North Sumatera (rank 4) with 299,198 infants, and rank 10 is Lampung with 147,322 infants (Kementerian Kesehatan Republik Indonesia (Kemenkes RI), 2021). Meanwhile, the number of Neonatal Mortality Rate based on province in 2020 with the highest ranking (Central Java) with 3,031 infants, North Sumatera (rank 9) with 608 infants and the best was West Sumatera with 559 infants (Badan Pusat Statistik Provinsi Sumatera Utara, 2024).The birth rate based on 10 regencies/cities in North Sumatera Province is ranked 1 (Deli Serdang) with 42,563 infants, ranked 2 (Medan) with 27,899 infants, ranked 10 (Labuan Batu Utara) with 4,282 people and Samosir is ranked 25 (1,249 infants) (Badan Pusat Statistik Provinsi Sumatera Utara, 2024). The 2019 North Sumatera health profile data shows that the 2019's Neonatal Mortality Rate was 2.9/1000 live births. However, this figure is believed to be uncertain because the data source has not been obtained from all private health facilities (Dinas Kesehatan (Dinkes) Provinsi Sumatera Utara, 2019). So, it cannot be concluded whether or not it has approached the 2024 SDG target.

A normal newborn is an infant born with a gestational age of ≥37 - 42 weeks with a birth weight of between 2500 - 4000 gr (Rustina, 2015). Neonates are from birth to 28 days postnatal age and a very vulnerable period of human life (Oktiawati, Khodijah, Setyaningrum, & Dewi, 2017; Tambunan & Simatupang, 2023). The mortality rate during this time is really high. As a result, there is increased focus on lowering additional child mortality. Providing newborns with proper and high-quality care is crucial and can help reduce the number of neonatal fatalities that occur globally. The aforementioned explanation has to pay more attention to lowering child mortality (United Nations (UN), 2017).Infant Mortality Rate (IMR) is the number of infant deaths within the first 28 days of life. The high IMR can be an indication that maternal and neonatal health services are still lacking, therefore a way is needed to reduce the incidence of infant mortality. The ability of infants to adapt due to changes in the environment from inside the womb to outside the womb can be influenced by various factors (for example: chemical factors, mechanical factors, and temperature factors) that cause metabolic changes, respiration and rotation in normal newborns and gestational age at birth (Tambunan, Mediani, & Nurjanah, 2019). Infants experience various difficulties in adapting during this transition phase (Rustina, 2015).

The shift from intrauterine to extrauterine life can cause more stress for newborns. The infant's brain development will suffer long-term effects from repeated stress (Vinall & Grunau, 2014). One of the impacts of environmental changes on newborn is hypothermia which will cause cold stress (Tambunan, Mediani, Nurjanah, Sansuwito, & Hassan, 2022) and then cause hypoxemia and hypoglycemia which will have a major impact as a cause of brain damage. The next impact can cause bleeding in the brain, shock, various parts of the body will harden, and delayed growth and development of children (Datta, 2018). It needs good nursing care to minimize each impact.
The implementation of good nursing care since the newborn is an important capital in the success of the development of both Psychological, Social, and Spiritual, as well as the motor development of the infants. Nursing care for newborns is care that is carried out immediately after an infant is born which focuses on optimizing the infant's condition by providing immediate, safe and aseptic care as the main care for newborns. Poor handling during the neonatal period is 50% of one of the causes of infant mortality and causes abnormalities that will result in lifelong disabilities (Elsharkawy, Al-latif, Mohamed, & Mohamed, 2022; Mohamed & Elashry, 2022).

One of the neglected and traumatic neonatal care is bathing (Tambunan & Mediani, 2019; Tambunan & Simatupang, 2024). Hypothermia, pain measured on a scale (de Freitas, Bueno, Holditch-Davis, Santos, & Kimura, 2018; Sinaga & Tambunan, 2024), and oxygen desaturation from prolonged sobbing (de Freitas, Marques, Alves, Takahashi, & Kimura, 2014) are all signs of this trauma responding (Ceylan & Bolışık, 2018). In Indonesia, sponge bathing and a combination of sponge and traditional tub bathing are common bathing practices that might cause stress and harm to newborns (Lee & Lee, 2021). The goal of the atraumatic care method is to provide therapeutic nursing care by minimizing or eliminating the psychological and physical discomfort that children endure (Tambunan et al., 2022). The Swaddle bath is one kind of atraumatic care (Fernández & Antolín-Rodríguez, 2018).Vital signs, oxygen saturation levels, and crying time have all been found to differ statistically significantly between the swaddle and sponge wash approaches in earlier research. The sponge bath group experienced significantly higher levels of stress and pain compared to the other bath types (Kurniandri & Tambunan, 2024). Swaddle bathing was more successful in reducing neonates' discomfort response issues, but there was no discernible difference in physiological responses between it and traditional tub bathing (Edraki, Paran, Montaseri, Nejad, & Montaseri, 2014; Paran, Edraki, Montaseri, & Nejad, 2016; Swapna, Nandhini, Princely, Kanchana, & Celina, 2017).

METHOD

The implementation of Community Service in the form of Posyandu Cadres briefing, health education and Swaddle Bath's Demonstration to the community was held on October 2 and 3, 2024, which took place at the Sait Nihuta Village Hall, Pangururan District, Samosir Regency, which was attended by 6 posyandu cadres and 25 mothers which are mothers who have infants aged 0-5 months, prospective mothers who are planning to have their first/next child, and pregnant women. This Community Service's briefing and health education activity was carried out with the following stages:

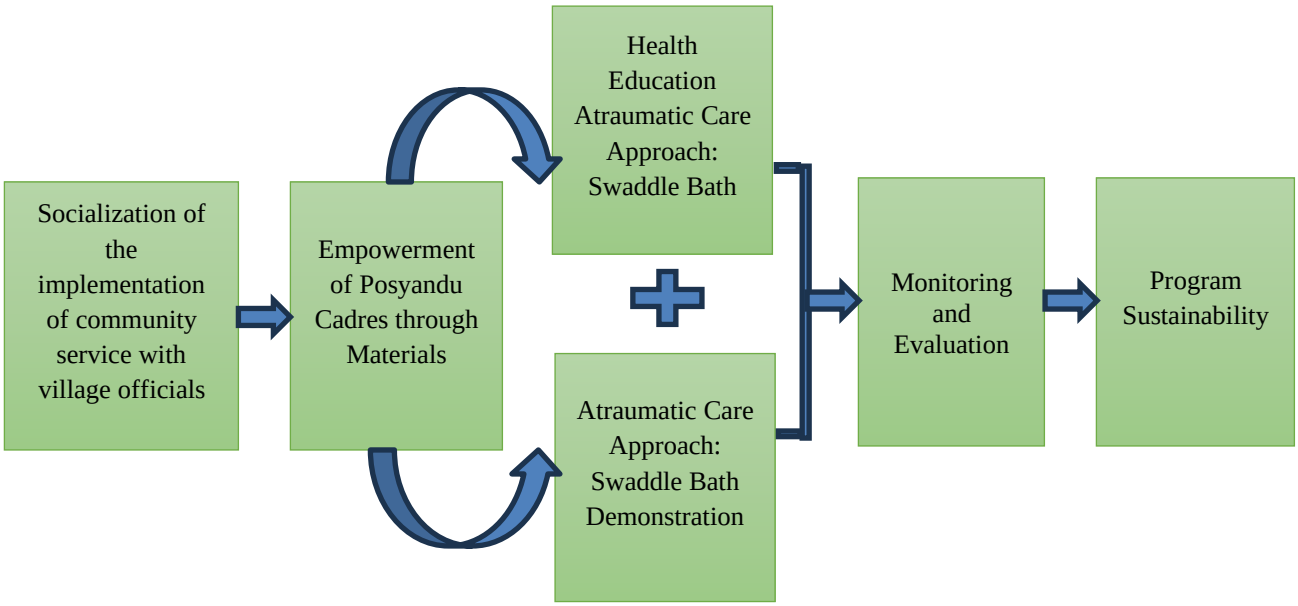

Figure 1. Flowchart of Community Service Activities

Stages of activity implementation:

1. Preparation stage
   a. Identify partner problems and neonatal health problems.
   b. Coordinate with village officials
   c. Conduct socialization of community service implementation with village officials
2. Implementation stage
   a. Provide a briefing on atraumatic care approaches to posyandu cadres
   b. Provide health education to targeted mothers
   c. Implement technology by demonstrating swaddle bath method
3. Final stage and evaluation
   a. Conduct monitoring and evaluation
   b. Preparation of final report
4. Output preparation stage
   a. Video of community service implementation uploaded on the institution's YouTube page.
   b. Implementation of community service activities published in the Sumut Pos printing media
   c. Publication in the form of posters at international conference on Nursing and Health Sciences
   d. Publication of manuscripts in the Sinta 1 - 6 indexed journal (Journal of Community Service Creativity)
5. Program Sustainability Stage
   A follow-up will be carried out again between 6 months - 1 year to ensure that the targeted community applies the education or technology provided.

RESULT AND DISCUSSION

Samosir Regency is one of the areas in North Sumatera Province located in the highlands. Pangururan is a sub-district of Sait Nihuta Village which is the place where the community service was carried out with an area of Pangururan District of 121.43 km2 (8.41%), and a population of 35,692 people (25.25%). Sait Nihuta Village has a rocky land, an area of 250 hectares with regional boundaries, a population of 987 people and a description of the population of Sait Nihuta Village. The number of pregnant women is 5 people, neonates are 4 people and children under 6 months are 11 people in Sait Nihuta Village, and mothers who are planning to have their first/next child are 5 people. Interviews with the Village Head found that the community in Sait Nihuta Village still lacks knowledge about the atraumatic care approach in optimizing neonatal adaptation, one of which is bathing. The community also does not understand how neonatal adaptation can reduce neonatal mortality and morbidity. This information was obtained from the Head of Posyandu as a Posyandu Group (Target Partner) consisting of 6 people during the preliminary survey. The implementation of Community Service in Sait Nihuta Village was carried out in October 2024 with the topic of Empowerment of Posyandu Cadres in the implementation of the Atraumatic Care Approach: Swaddle and Sponge Bath to Optimize Neonatal Adaptation in Pangururan. It began with socialization with the Village Head and Sait Nihuta Village officials regarding the implementation of community service. The following day, a meeting was held with Posyandu Cadres regarding the implementation and monitoring and evaluation of the implementation of the Community Service. The Community Service Activities are as follows:

A. The Community Service Team Departed from the institution to Community Service location and arrived at Sait Nihuta Village on October 1, 2024

Figure 2. The team leaved to Sait Nihuta Village

Figure 3. The team arrived at Sait Nihuta Village

B. The Community Service Team met with Village Officials and Posyandu Cadres on October 2, 2024

Figure 4. Socialization of Community Service Implementation with the Head of Sait Nihuta Village

Figure 5. Briefing of Posyandu Cadres

C. Health Education for targeted mothers at Sait Nihuta Village Hall on October 3, 2024.

Figure 6. During Health Education

Figure 6. After Health Education with the Community

Table 1.
Characteristics of Posyandu Cadre Respondents

Characteristics of Respondents	f	%
Age:		
21 – 30 Years	1	16.7
31 – 40 Years	2	33.3
41 – 50 Years	1	16.7
51 – 60 Years	2	33.3
Gender:		
Male	0	0.0
Female	6	100
Education Level:		
Senior High School	4	66.7
Diploma III	2	33.3
Occupation:		
Civil Government Employees	1	16.7
Farmer	2	33.3
Self-employed	3	50

Table 2.
Characteristics of Community Respondents

Characteristics of Respondents	f	%
Age:		
20 – 25 Years	4	16
26 – 30 Years	7	28
31 – 35 Years	8	32
36 – 40 Years	6	24
Gender:		
Male	0	0.0
Female	25	100
Education Level:		
Not Going to School	0	0.0
Elementary School	2	8.0
Junior High School	5	20
Senior High School	12	48
Diploma III	4	16
Bachelor Degree	2	8.0
Occupation:		
House	9	36
Civil Goverment Employees	3	12
Private Sector Employees	4	16
Farmer	6	24
Self-employed	3	12
Number of Children:		
0	3	12
1	5	20
2	7	28
3	7	28
4	2	8,0
5	1	4.0

Based on the data in table 1, it shows that the majority of posyandu cadres are aged 31- 40 years and 51- 60 years, 2 people each (33.3%) and all are female (100%), the majority of posyandu cadres

have a senior high school education, 4 people (66.7%). The majority of posyandu cadres are self-employed, 3 people (50%). Based on the data in table 2 shows that the majority of people aged 31-35 years at 8 people (32%) and all are female (100%). The majority of people have senior high school education as many as 12 people (48%). The majority of people's occupation are as many as 9 people (36%). The majority of people have 2 and 3 children with 2 people each (28%).

Table 3.
Frequency of Knowledge Level of Posyandu Cadres

Knowledge Level	Pretest		Posttest	
	f	%	f	%
Good	2	33.3	4	66.7
Enough	1	16.7	2	33.3
Low	3	50	0	0.0
Total	6	100	6	100

Based on table 3, it shows that the pretest knowledge level of posyandu cadres was low in 3 people (50%). While the posttest knowledge level of posyandu cadres was good in 4 people (66.7%).

Table 4.
Frequency of Community Knowledge Levels

Knowledge Level	Pretest		Posttest	
	f	%	f	%
Good	0	0.0	15	60
Enough	11	44	10	40
Low	14	56	0	0.0
Total	25	100	25	100

Based on table 4, it shows that the pretest knowledge level of community was low in 14 people (56%). While the posttest knowledge level of community was good in 15 people (60%).

Prior research has demonstrated using the Wilcoxon test, the impact of sponge baths on neonatal vital signs and body temperature variables after five minutes of bathing. The results indicate a significant impact of sponge baths on neonatal vital signs and body temperature after five minutes of bathing ($p = 0.000$). The heart rate measured after five minutes of bathing demonstrated a significant effect following the intervention, as indicated by a paired t-test with a p-value of 0.036. In contrast, the respiration pattern assessed after the same duration using a paired t-test revealed no significant impact from the sponge bath, with a p-value of 0.394. Furthermore, the evaluation of oxygen saturation and pain scale after five minutes of bathing, conducted using the Wilcoxon test, yielded a p-value of 0.000. This result signifies a substantial effect of the Atraumatic Care Approach in Neonates on both oxygen saturation and pain scale following sponge bathing (Tambunan & Simatupang, 2024). Swaddle bathing has proven to be more effective in mitigating comfort-related issues in premature neonates (Tambunan et al., 2022). Adverse environmental stressors can influence the behavior of newborns; therefore, it is crucial to conduct bathing in a serene and stress-free setting. It is essential to meticulously regulate all stimuli within the newborn care environment by establishing a designated room specifically for infant bathing procedures. Each newborn is unique, and the social responses to stress vary from one infant to another.

Ensuring high-quality and suitable care for newborns is crucial in reducing the incidence of neonatal mortality globally. The shift of newborns from the intrauterine to the extrauterine environment can induce stress in these infants. Prolonged exposure to stress may lead to lasting

effects on the development of the infant's brain. The Atraumatic Care Approach, specifically the Swaddle Bath technique, proves to be beneficial, safe, and secure. It effectively influences vital signs and pain levels in neonates, helps maintain optimal body temperature, stabilizes oxygen saturation, and alleviates pain during and after the bathing process.

CONCLUSION

The Swaddle bath is stress-free. The atraumatic care approach utilizing swaddle bathing represents a safer and more dependable method for assessing the physiological responses and comfort levels of newborns. This technique offers a soothing, secure, and comfortable bathing experience that closely resembles the conditions of the womb. For newborns, swaddle bathing not only enhances comfort during the bathing process but also contributes to an overall enjoyable experience.The swaddle bath method can optimize neonatal adaptation during home care by mothers and families who care for neonates. The Atraumatic Care Approach can minimize traumatic experiences during bathing in neonates. It is hoped that the program will continue through cadres who have been provided with education through materials and demonstrations that have been provided to the community.

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