

Experiences of midwives in implementing the fifth stage of function in the integrated service posts to prevent anemia in pregnant women during the COVID-19 pandemic in Indonesia

Mien, Siti Hadrayanti Ananda, Diah Indriastuti*, and Tahiruddin

Nursing Study Program, STIKes Karya Kesehatan, Indonesia

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Corresponding author:

Diah Indriastuti

STIKes Karya Kesehatan

Jl. Jend. A. H. Nasution No. 89, Anduonohu, Kambu district, Kendari, Southeast Sulawesi 93561, Indonesia

E-mail: nsdiahindri@gmail.com

Mobile: 081244777470

Abstract

Background: Anemia is an indirect cause of death for pregnant women and women in labor due to bleeding. One of the inabilities of the uterine muscles to contract is caused by anemia. The use of integrated service posts or Posyandu, especially in the fourth and fifth steps as a stage of individual health promotion, should prevent anemia in mothers.

Objective: The purpose of this study was to explore the experiences of midwives in the implementation of the fifth stage of function in integrated service posts in relation to preventing anemia in mothers.

Methods: This was a qualitative study with a phenomenological approach conducted from January to November 2020. The participants consisted of eight midwives, two nutritionists, one laboratory analyst, six cadres, and two pregnant women. The participants were selected using accidental sampling in the Poasia Public Health Center working area, Kendari, Southeast Sulawesi of Indonesia.

Results: The results showed two themes related to the implementation of the fifth stage of the integrated service post activities: pregnancy examination and treatment of anemia.

Conclusion: The implementation of the fifth stage in the integrated service postal service has been carried out maximally utilizing the resources owned by the public health center and the community. However, midwives receive additional burdens for its implementation because cadres are less able to provide health education for pregnant women, especially regarding anemia.

Keywords: integrated service post; pregnant women; anemia; midwives; cadres; Indonesia

Background

One of the efforts to improve the quality of population health is community participation in utilizing Integrated Service Posts or in Indonesian acronym called Posyandu (Hidayat & Jahari, 2012).

Posyandu has the goal of reducing the Maternal Mortality Rate (MMR) and the Infant Mortality Rate (IMR) (Pangestuti, Syamsulhuda, & Kusumawati, 2016). The incidence of maternal mortality in the world occurred 830 cases every day, Indonesia in 2015 had 305 / 100,000 cases, while in Southeast Sulawesi Province, there was a consecutive

increase between 2015 - 2017 as many as 67 cases increased to 74 cases and 75 cases (Achadi, 2019; Southeast Sulawesi Provincial Health Office, 2018; World Health Organization, 2005). One of the causes of death is bleeding due to low hemoglobin (Hb) levels or anemia (Acharya, Kaur, Prasuna, & Rasheed, 2015; Rahman et al., 2017).

Many pregnant women experience iron deficiency anemia due to inadequate compliance in consuming or the wrong diet during pregnancy (Pathirathna, Wimalasiri, Sekijima, & Sadakata, 2020). The incidence of anemia in pregnant or childbirth women can be minimized with the support of individual health promotion and health services (Jombang District Government Public Relations, 2015; Ramadani, Nursal, & Ramli, 2015; Sidoarjo Regency Government Health Office, 2014). Posyandu can be used as a means of monitoring maternal and child

Methods

Study Design and Setting

A qualitative research design with a phenomenological approach was used in this study to reveal certain phenomena, situations, roles, groups, or social interactions in the implementation of the fifth step function in Posyandu to prevent anemia in mothers (J. Creswell, 2012). This research was conducted from January to November 2020 in the Poasia Public Health Center Work Area, Kendari, Southeast Sulawesi of Indonesia.

Participants

This research was carried out together with 19 participants in the working area of Poasia Public Health Center. Participants consisted of midwives, cadres, nutritionists, immunization officers, laboratory officers, and pregnant women. The sampling technique in this study was using an incidental sampling technique.

Data Collection

This study employed interviews to find data in depth. The interview used a Samsung smartphone integrated with the Voice recorder application, the brand iPhone7 and Realme c2 with the original recorder from the default phone. Apart from using a recording application, the recording was also carried out using a cellular call recording system on a Samsung smartphone. Field notes were used in data collection to record observations in the field.

health. This monitoring can be done through extension activities in step 4 and health services, one of which is giving Fe tablets in step five (Mardiana, Yusran, & Erawan, 2016; Pangestuti et al., 2016). Previous research in the Lao Manggarai District reported that 60% of Posyandu activities with a 5 table system were still lacking (Nggarang & Senudin, 2016). Pregnant women are also not interested in visiting Posyandu because they feel that they are enough to visit a specialist doctor and do not need the consultation given at Posyandu (D. Indriastuti, Margawati, Rachma, Tahiruddin, & Sahalul, 2021). This phenomenon deserves to be studied further so that the incidence of anemia in pregnant women and postpartum mothers can be prevented. This study aimed to explore the implementation of the functions of the 5th steps of Posyandu to prevent anemia in mothers.

Data Analysis

Data organization, coding, and carrying out data analysis using thematic analysis with an inductive approach. Data compiled into verbatim transcripts were analyzed through coding, categorical, and thematic analysis (Afiyanti & Rachmawati, 2014). The researchers conducted in-depth interviews with midwives and cadres, while triangulation using in-depth interview techniques was carried out on nurses, nutritionists, laboratory technicians, and pregnant women. The data collected was in the form of voice recordings and pictures or photos arranged in stages into transcripts and processed by providing a sign code manually. After all the results were compiled, the categories and themes were arranged in the process of analyzing the research results.

In this study, the researchers used interview guides, observation sheets, field notes, recording devices, and cameras integrated into smartphones. All of these tools were tested and calibrated before being used in the field. The researchers made a list of questions in the interview guide and practiced their ability to conduct interviews. The recording device and camera were checked for function and battery availability to function optimally during data collection. More than one device was provided as a backup. In addition, the researchers also use them simultaneously to get several recordings as needed.

Trustworthiness

Trustworthiness criteria were used to check the validity of data through credibility, dependability, confirmability, and transferability (Afiyanti & Rachmawati, 2014; J. W. Creswell & Poth, 2016; Gunawan, 2015). The strategy for obtaining data validity was by extending time in fostering relationships between informants and researchers, making audit tracks, conducting member checks, making reliable descriptions (tick description), and triangulation.

Researchers carried out research time extension by following various participant activities at the health center and the Posyandu. Participants and researchers had time to build mutual trust and an atmosphere of openness. Researchers often confirmed outside of the member check activity to ensure that participants' statements were constant and did not change over time. After the data were saturated and the transcripts were neatly arranged, the researchers carried out the member check stage to completely confront the research results with participants and provide opportunities to explain, correct, or change statements that they think were not corresponding.

Ethical Consideration

Explanations before consent were given to participants by explaining the research procedure thoroughly, and then informed consent was obtained after the participants understood and agreed to the researchers' explanations. The ethics committee of the Association of Indonesian Public Health Expert Regional Management of Southeast Sulawesi has approved the ethical clearance of this study with a number of 128/KEPK-IAKMI/VII/2020.

Results

Characteristics of Participants

Table 1 shows that most of the respondents were between the ages of 26-35 years, status in the Posyandu were mostly midwives, most of the working years were in the 1–5-year range for health workers who worked at the Puskesmas and for cadres who served at the Posyandu. Two pregnant women were involved in this study in the 2nd gestational status.

Table 1 Characteristics of Participants (N=19)

Characteristics of Participants		n
Age (years)	17 - 25	3
	26-35	8
	36-45	5
	46-55	3
Status in Posyandu	Midwife	9
	Immunization Officer	1
	Cadre	7
	Laboratory analyst	1
	Nutritionists	1
	Pregnant mother	2
Period of service	1-5	7
	6-10	4
	11-15	1
	16-20	2
	25 - 30	3
Gestation	0-5	2

Analytical Findings

Theme 1: Pregnancy examinations

The theme of pregnancy examinations in the fifth stage carried out by midwives was identified in the results of this study by the category of Antenatal Care and the implementation of blood tests. The Antenatal Care category refers to complete examination for mothers by midwives carried out at the Posyandu as stated in the following participant statements :

- "... for the medical examination, we will pass it to the midwife ..." (P2)
- "... give me an examination at the midwife's place ..." (P5)
- "... it was all midwives who checked ..." (P7)
- "... I did an examination of pregnant women, first ... anamnesis, the examination of height, weight, blood pressure, upper arm circumference, Leopold, fetal heart rate, immunization..." (P8)
- "... anamnesis, then physical examination, thoroughly examining pregnant women ..." (P9)
- "... we have the first anamnesis; we do a complete examination ... the Leopold examination is according to the procedure ..." (P10)
- "... for the examination of pregnant women, it was not me who checked, it was the midwife, there was a midwife herself as the examiner ... previously checked before I immunized ..." (P11)
- "... examination of pregnant women from the initial examination to the Leopold examination to the complete examination ..." (P12)
- "... so, during the patient's anamnesis ... then do the examination ... but at the time of the examination there were also blood lab results ... measure the circumference of the upper arm, the weight ..." (P13)

- "... on table 5 there is an examination after the history taking, there is an examination of vital signs, then an examination of pregnant women according to complete steps, a complete physical examination ... the results of the examination are always notified to pregnant women ." (P14)
- "... I started to weigh his weight, upper arm circumference, head to toe checks ... everything was done, so a complete examination was carried out at the Posyandu, an integrated examination ..." (P15)
- "... the fetal heart rate is checked, blood pressure, upper arm circumference is measured, examine the uterus to feel the position of the fetus, height, weight, all checked ..." (P16)
- "... for examinations including blood pressure, fetal heart rate, fetal position, measuring upper arms, height and weight ..." (P17)
- "... weighing, measuring height, measuring the circumference of a pregnant woman's upper arm ... that is the duty of a midwife for the examination ..." (P19)
- "... if the examination is carried out by a midwife ..." (P20)



Figure 1 Midwives Providing Service in the Fifth Stage Wearing Hazmat Suits during the Pandemic

The results of the observations obtained in the photo identified that the midwife was examining pregnant women wearing hazmat suits.

The category of implementing blood tests refers to the procedures implemented in the Posyandu program for pregnant women as a series of antenatal care, especially to detect anemia incidents stated by participants:

- "... a blood laboratory test will be carried out, later there will be a laboratory analyst to carry out the Hb test, complete including hepatitis and HIV / AIDS ... if there is a complaint that leads to anemia, immediately perform a blood laboratory test ..." (P8)

- "... laboratory analyst ..." (P9)
- "... we have special laboratory analysts ... laboratory analysts who will check, for example when they check their blood and the results have low hemoglobin levels, they will report to us ..." (P10)
- "... now laboratory analysts are also participating in Posyandu, so pregnant women can have their blood samples taken immediately ..." (P11)
- "... there were also laboratory analysts coming ..." (P12)
- "... there were also laboratory analysts at the Posyandu ..." (P13)
- "... carried out at the Posyandu ... detection of anemia through laboratory examinations, now, every newly pregnant woman has her laboratory examination, including her HIV / AIDS at the Posyandu. We are integrated now; the laboratory analyst officers are also on duty at the Posyandu ..." (P14)
- "... the blood laboratory examination has a laboratory analyst ..." (P15)
- "... every month ... check at the Posyandu ... if in this second pregnancy the laboratory analyst had never had blood drawn, during the first previous pregnancy, the results of the first blood test were good ..." (P16)
- "... the tests carried out were HB or hemoglobin, HIV, syphilis, and hepatitis. Her Hb was checked using a Sismec hematology analyzer; then the blood was taken at the Posyandu and then checked at the Puskesmas laboratory ..." (P18)
- "... the laboratory analyst, he took the blood ..." (P19)

The researchers' observations found the equipment used by laboratory analysts to carry out pregnant tests by blood specimens. Blood was taken at the Posyandu using the equipment shown in Figure 2. The yellow box is an alcohol swab, and in the red box, it is a vacutainer kit. In Figure 3, in the green box, it is a syringe and a tourniquet. A test kit to detect syphilis infection is in the yellow box, and an HIV-AIDS test kit in the red box, while the test kit for hepatitis at the time of data collection was not available. In Figure 4, it is a hematological analyzer used to check the blood components of pregnant women in the laboratory, mainly to check the hemoglobin level in the blood with the brand name of Sismec.



Figure 2 Blood Draw Equipment



Figure 3 HIV-AIDS and Syphilis Test Kits



Figure 4 Hematological Analyzer Machine

Theme 2: Treatment of Anemia

The theme of anemia management was obtained from interviews that showed the active role of midwives in controlling anemia in mothers. This theme is categorized into the implementation of counseling, monitoring, and therapy. The category of counseling implementation refers to the efforts made by midwives to provide cognitive information to pregnant women through counseling or outreach, which is reflected in the following statements of participants:

- "... for the pregnant mother, yes, we will tell her too but usually (the counseling) is done by the midwife ..." (P2)
- "... counseling from community health centers ..." (P5)
- "... midwives and health workers who provide counseling ..." (P6)
- "... direct counseling with midwives ..." (P7)
- "... during the class for pregnant women, there is information about all pregnant women, there is also material about anemia ... counseling is provided by midwives. There is a special class for pregnant women, and counseling is also carried out at Posyandu ..." (P8)
- "... it depends ... there is a class of pregnant women we provide general counseling or do it face to face according to each mother's complaints ..." (P9)
- "... all pregnant women are given counseling ... we do counseling one by one, we also have classes for pregnant women in their area ..." (P10)
- "... There are also those who are private counseling ... there are also general issues regarding pregnancy, she (midwife) stands in the middle giving counseling, she gathers pregnant women like a class but conducted at Posyandu ..." (P11)
- "... some are individuals, some are grouped into a class of pregnant women ..." (P12)

- "... every time we have activities at the Posyandu we do counseling ... there is a Posyandu that has a class for pregnant women ... if counseling individually according to the results of the examination ..." (P13)
- "... after the examination, the officers usually do it (counseling)... we immediately do it (counseling)... but there is also a class for pregnant women ..." (P14)
- "... if in a large group we hold counseling in the class for pregnant women, if for personal, given counseling when we complete the examination service..." (P15)
- "... counseling together ..." (P16)
- "... counseling with midwives was carried out together at the Posyandu as yesterday..." (P17)



Figure 5 Midwives Provide Group Counseling

The observation data in Figure 5 shows the activities of the midwife in the red box providing health education or counseling at the Posyandu for pregnant women using hazmat clothes as personal protective equipment (PPE) during the pandemic.

The monitoring category refers to providing supervision to pregnant women through continuous communication between midwives and pregnant women with anemia by telephone and home visits. These categories are reflected in the following participant statements:

- "... we have a visit with pregnant women who have problems with their pregnancy ... we will give us the cellphone number in the Maternal and Child Health book, if there is a problem, she can contact her midwife, or we will go there ..."
- "... we usually put the midwife's cellphone number in the pink book (MCH book), the Posyandu book, some are calling, some are consulted through the chat application ..." (P10)
- "... precisely because pregnant women are visited, the coverage of midwives is high ..." (P11)
- "... we are going to have a home visit for pregnant women with high risks ... we will provide a cellphone number so consultations by telephone ..." (P14)
- "... home visits ... when we find out that there are pregnant women with high risk, we do monitoring ... monitoring of home visits for high-risk mothers ..." (P15)

The therapy category refers to the provision of pharmacological therapy and supplementary feeding for pregnant women. This category can be identified from the following participant statements:

- "... given a tablet with blood-booster tablets (Fe), see also the level of anemia, severe or mild ..." (P8)
- "... if the anemia is mild, we give the counseling by giving tablets (Fe) as well, if it is severe, twice one tablet (Fe) ..." (P9)
- "... so, we mark the anemia patient ... we suggest consuming vegetables such as moringa, boiled eggs, not fried eggs ... cooked fish in soup, nutritious food ... along with the blood booster tablets (Fe) ..." (P10)
- "... we give a tablet with blood added (Fe) ..." (P12)
- "... we recommend the food to use the vitamins with the blood-boosting vitamins ..." (P13)
- "... yes, pregnant women, there is additional food given at the Posyandu, complimentary food ..." (P14)
- "... giving blood-booster tablets (Fe) ... the blood-booster tablets are routinely taken ..." (P15)
- "... have received supplementary food, that was two boxes, two packages of which were like biscuits that contained jam ... blood-booster tablets every month get from Posyandu ..." (P16)
- "... blood-booster tablets are not only for those detected with anemia ... there are women who

are chronic energy deficiency usually getting biscuits (Supplementary Food) ..." (P19)

- "... giving blood-booster tablets ... we give it for three months ... so for 12 weeks she gets 12 boxes ... we will monitor it until she finishes it ..." (P20)



Figure 6 Nutritionists Hold Food Supplement and Blood Booster Tablets for Pregnant Women

Figure 6 shows the types of supplementary food given to pregnant women as an additional food to help overcome chronic energy deficiency conditions and blood added tablets (Fe) to help overcome anemia conditions.

Discussion

Participants stated that the implementation of the fifth phase of the Posyandu was a pregnancy check-up carried out by a midwife. Midwives have done their job well, including checking body weight, height, blood pressure, measuring upper arm circumference, monitoring fetal development through Leopold's examination and detection of fetal heart rate, giving orders for immunization and laboratory blood tests. Participants of pregnant women with the initials P16 and P17 felt comfortable in the Posyandu getting a complete examination, in contrast to examinations carried out at private health services for pregnant women.

The findings of this study indicate that midwives have carried out the task of giving directly as executors by providing Antenatal Care examinations to pregnant women is following the guidelines for integrated antenatal care (Ministry of Health Republic of Indonesia, 2010; Ministry of Health Republic of Indonesia, 2010). Previous research conducted by D. Indriastuti et al. (2021) showed the same thing that midwives have tried to carry out their role in

assisting pregnant women. However, research by [Mikrajab and Syahranti \(2013\)](#) showed the opposite that services for pregnant women at Posyandu for pregnant women are not optimal

Blood tests are included in an integrated service in the Posyandu, and laboratory analysts will come with the midwife at the Posyandu to take blood samples. Blood samples of pregnant women will be examined primarily to detect anemia by looking at hemoglobin levels. In addition, this examination aims to detect HIV / AIDS, hepatitis, and syphilis. The blood drawn is then taken to the health center for examination using the Sismec hematology analyzer. Hemoglobin analysis is not carried out on the spot using the HB Sahli technique because, according to laboratory analysts, the results are inaccurate. According to the observations of researchers, the place used for the Posyandu does not support the performance of laboratory analysts where most Posyandu use residents' houses. However, some Posyandu have special places for maternal examinations. Blood laboratory checks in pregnant women are very important to determine the mother's hemoglobin level and the possible risk of transmission of disease transmission from mother to babies, such as HIV / AIDS, hepatitis, and syphilis ([World Health Organization, 2003](#)). Blood tests also aim to determine the mother's blood type to prepare donors for delivery, provide Iron IV therapy because transfusions cannot be given frequently and get hemoglobin levels so that anemia can be detected, which can harm pregnant women such as anemia and bleeding ([Munoz et al., 2018](#)).

The results of previous studies revealed the importance of blood laboratory examinations as an effort to reduce the adverse effects of anemia and chronic energy deficiency in pregnant women, including postpartum hemorrhage, prolonged labor, the incidence of LBW births, and premature births ([Api, Breyman, Çetiner, Demir, & Ecdar, 2015](#)). [Irshad \(2020\)](#) confirmed that examining and counseling pregnant women regarding HIV / AIDS outcomes is needed to reduce transmission by Mother to Child HIV Transmission (MCTC), which can affect infant growth. While [Oktavia and Lolli \(2018\)](#) explained, hepatitis is often associated as co-infection with HIV / AIDS. [De Santis et al. \(2012\)](#) reaffirmed the dangers of syphilis for infants, which can cause early fetal loss, stillbirth, prematurity, low

birth weight, neonatal and infant death, and congenital disease among newborns.

There are two types of counseling in Posyandu. The counseling was carried out in the fourth stage at the Posyandu, carried out by cadres. The second counseling was carried out immediately after the examination by the midwife in the form of individual counseling by adjusting the conditions of each pregnant woman. However, the implementation of these two outreaches is fully carried out by midwives, both counseling at the fourth stage and personal counseling according to the mother's problem at the fifth stage. This results in additional workloads on midwives at Posyandu, especially to deal with anemia in pregnant women.

It is hoped that counseling can change the attitudes and behavior of pregnant women about health services for pregnant women in making decisions about pregnancy and childbirth ([Andaroon, Kordi, Kimiaee, & Esmaeili, 2020](#)). Counseling at the Posyandu should be the task of cadres at the fourth stage ([Ministry of Health Republic of Indonesia, 2011](#)). Midwives at the Puskesmas Poasia who provide counseling are a manifestation of the midwife's role as a counselor ([Nuraisyah & Yuliawati, 2020](#)). This study has the same results as the research of [Fani, Nirmala, and Judistiani \(2017\)](#), which explained about the counseling at Posyandu that does not run according to the guidelines for implementing Posyandu where cadres do not play a role, especially in the implementation of counseling. Meanwhile, [Mardiana et al. \(2016\)](#) explained that in her research, health workers carried out counseling in the fourth step of Posyandu.

After being given counseling, pregnant women are also given monitoring, especially for pregnant women with high risk. This monitoring is carried out by conducting home visits. Home visits are not only for pregnant women with high risk but also for pregnant women who have never visited Posyandu and pregnant women who experience sudden pregnancy problems. In addition to home visits, every pregnant woman has a telephone number for the midwife in charge of the Posyandu so that at any time, pregnant women can consult with the midwife as well as midwives can monitor pregnant women at any time.

Home visits are one of the duties and functions of a midwife that can provide comfort for mothers to discuss their conditions more freely, especially after childbirth (Dahlberg, Haugan, & Aune, 2016). This intervention aims to overcome the failure of antenatal care in which pregnant women are required to have at least four examinations during pregnancy and at least one time before delivery (Ministry of Health Republic of Indonesia, 2013). Previous studies have supported that assistance to pregnant women can reduce the incidence of pregnancy complications up to delivery (D. Indriastuti, & Namuwali, D, 2015; D. Indriastuti & Tahiruddin, 2019). The research conducted by Widiastuti, Kartasurya, and Dharminto (2014) was in line with the results of this study that home visits are needed for pregnant women, especially mothers at high risk.

Therapy for mothers with anemia is carried out by giving blood-booster drugs or Fe tablets and a program of supplementary feeding or commonly known as supplementary foods. Fe tablets are provided to all pregnant women; the dose is increased to 2 times by two tablets every day if the mother has severe anemia. Mothers with mild anemia will be given a dose of 1 day 1 Fe tablet with increased consumption of nutritious foods, especially foods sources of iron. Supplementary food is given only to pregnant women who experience chronic energy deficiency. Pregnant women who experience an iron deficiency in the body, disrupting the formation of red blood cells (Morrison & Marc, 2011). Meanwhile, chronic energy deficiency in pregnant women is caused by a lack of nutrients such as calories and protein (Wubie et al., 2020). Midwives, in carrying out their duties, have a scope of services in providing the supply of Fe tablets for pregnant women and providing additional food at Posyandu (Ministry of Health Republic of Indonesia, 2010).

Previous research supports the results of this study, such as ANC visits influence the incidence of anemia because, at the time of ANC visits, the mother will be given Fe tablets and given the motivation to comply with consumption and consumption of good nutrition (Dolang, 2020; Effendy, Prangthip, Soonthornworasiri, Winichagoon, & Kwanbunjan, 2020). The results of this study are the same as the research conducted by Nurina (2016) that to overcome the incidence of mothers with chronic

energy deficiency is to provide additional food. While Mangalik et al. (2019) reinforced with the results of their research that pregnant women who do not visit ANC do not get additional food distribution and do not spend additional food still experiencing chronic energy deficiency. In general, it shows the variety of difficulties faced by midwives and cadres in the field (Posyandu).

The role of community nurses can help midwives and cadres in terms of refreshing cadre knowledge so that midwives can be helped by the activeness of cadres at the Posyandu. Health education is one of the roles of community nurses as community educators that can be collaborated with good planning (Allender, Rector, Rector, & Warner, 2013; Tasnim, Mwanri, & Dasvarma, 2018). The existence of community nurses in the community, especially village nurses, can be one of the best opportunities for collaboration between midwives, cadres, and nurses to overcome problems of pregnant women, especially anemia.

Conclusion

The results of this study indicate that the implementation of the Posyandu at the fifth stage has run well shown by the themes of antenatal care and anemia management. Midwives have demonstrated the minimum standard of antenatal care services at Posyandu and in trying to treat anemia in pregnant women. However, the implementation of the midwifery duties was exacerbated by the failure to carry out the fourth phase of service by cadres at the Posyandu. The midwives must take over with various efforts so that all stages at the Posyandu can run smoothly.

Declaration of Conflicting Interest

None declared.

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Author Contribution

Mien and Siti hadrayanti ananda collected data. Diah Indriastuti conducted data analysis. Tahiruddin formulating the methods and research problem. All authors drafted and critically reviewed the manuscript. All authors agreed with the final version of the article.

Author Biography

Mien is a Head of Nursing Laboratory, a Lecturer at the Nursing Science Study Program of STIKes Karya Kesehatan, and an Editorial Board at Jurnal Keperawatan.

Siti Hadrayanti Ananda is a Lecturer at the Nutrition Science Study Program of STIKes Karya Kesehatan, and an Editorial Board at Jurnal Ilmiah Gizi.

Diah Indriastuti is a Head of the Research and Community Service Section at STIKes Karya Kesehatan. She is also a Journal Manager at OJS STIKes Karya Kesehatan, and an Editor-In-Chief at *Klasik: Journal of Holistic and Maritime Nursing Kendari* as well as an Editorial Board of several journals (*Nursing Journal* and *Karya Kesehatan Journal of Community Engagement of STIKes Karya Kesehatan*, *Window of Health: Journal of Health of Faculty of Public Health UMI Makassar*, *Journal of Masyarakat Health Celebes of IAKMI South East Sulawesi*). She is also an Active Researcher at STIKes Karya Kesehatan.

Tahiruddin is the Deputy Chair of STIKes Karya Kesehatan in Kendari. He is also a Reviewer of *Journal of Health*

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