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PROCEEDINGS

3rd INTERNATIONAL CONFERENCE

**ON HANDLING NON-COMMUNICABLE DISEASES
(3ndICHNCDs)**

-A Web International Conference-

**“The Role of Health Care Providers on Handling Non-Communicable
Disease Through Innovative Technology in the Research.”**

Tuesday and Wednesday, 23rd - 24th November 2021



**Pusat Unggulan IPTEKS (PUI-P2PTM)
Poltekkes Kemenkes Semarang
2021**

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3rd International Conference Poltekkes Kemenkes Semarang
“The Role of Health Care Providers on Handling Non-Communicable
Disease Through Innovative Technology in the Research
Semarang, 23rd - 24th November 2021

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**3rd INTERNATIONAL CONFERENCE ON
 HANDLING NON-COMMUNICABLE DISEASES (ICHNCDs)
 POLITEKNIK KESEHATAN KEMENKES SEMARANG
 Semarang, 23rd – 24th November 2021**

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PREFACE

World Health Organization (WHO) officially declared the coronavirus (COVID-19) a pandemic in March 2020, significance that COVID-19 has spread widely in the world. Governments in many countries have issued many strategies and policies in dealing with COVID-19 cases. The Indonesian government has issued several policies, namely, releasing health protocols/guidelines, campaigning handwashing-using masks-keeping physical distance, establishing large-scale social restrictions, prohibiting Eid homecoming, preparing laboratories for COVID-19 tests, running COVID-19 tests in various places, establishing a new-normal order, and now implementing COVID-19 Vaccination Program.

However, amid the spike in COVID-19 cases even increasing in Indonesia, many people still ignore health protocols. Governments should engage through participatory efforts in a proactive, regular, transparent, and unambiguous manner with all affected and at-risk populations. Health Polytechnic of Semarang has capacity to build understanding knowledge, behaviors, perceptions, and identify the proper interventions, collaboration and community-based networks and influencers to empower the role of healthcare providers.

In a public health emergency such as the ongoing COVID-19 pandemic, one essential lifesaving action is Society Empowerment. Participatory society engagement interventions should include accurate information on risks, what is still unknown, what is having finished finding answers, what activities are being taken by health authorities, and what actions people can take to protect themselves. The participation of every member of at-risk and affected communities is needed to prevent infection and transmission especially when people have diseases.

Health care providers become the main pioneers in overcoming pandemic era. In this case, Semarang Health Polytechnic also contribute to provide the new generation of professional health care provider in the future. Health Polytechnic of Semarang will be a central determinant of the response effectiveness in managing society to prevent and promote for handling non communicable diseases. Building the capacity of national, regional, and local stakeholders is essential to empower the health providers to contribute well to achieve health status in the community.

Health Polytechnic of Semarang as one of healthcare provider always has a commitment to educate students with medical background. According to this point, Health Polytechnic of Semarang commit to create output of health care professional that will be able to compete to both globalization and digital era by conducting local wisdom of Indonesia.

Semarang, November 2021

Committee Chief,

Dr. Rr. Sri Endang Pujiastuti, SKM.,MNS

SPEAKERS

A. Keynote & Speaker

No	Speaker	Title
1.	PPSDMK	Transforming and Developing Health Professional Education
2.	Assoc. Prof. Kittikorn Nilmanat (Prince of Songkla University (PSU) Thailand)	Empowerment Community on Handling Non-Communicable Diseases
3.	Dr. Anshad Anshari (Nanyang University)	The role of health care provider on the program of promotion and prevention health status on handling non communicable diseases
4.	Prof. Nawi Ng University of Gothenburg	Empowering Public Health Services in Pandemic Era
5.	Kesehatan Lingkungan	Transforming the Workplace Environment to Prevent Non-Communicable Disease in Pandemic Era
6.	Teknik Radiodiagnostik dan Radioterapi	The role of health care provider on the program of promotion and prevention health status on handling non communicable diseases (Innovational Technology in Medical Imaging and Clinical Radiotherapy)
7.	Nutrition	The Role of Health Care provider for preventing and controlling of Non-Communicable Disease through Diet and Nutrition
8.	Diponegoro University	Challenging Innovative Research on Handling Non
9.	Internal Speaker	<ul style="list-style-type: none"> a. Postgraduate Program of Semarang Health Polytechnic b. Diploma III Program of Nursing Semarang c. Diploma III Program in Dental Nursing d. Diploma III Program in Nutrition e. Diploma III Program in Medical Technology Laboratory f. Diploma III Program of Midwifery Semarang g. Diploma III Program of Midwifery Magelang h. Diploma III Program in Medical Record and Health Information

MANUAL
3rd INTERNATIONAL CONFERENCE ON
HANDLING NON-COMMUNICABLE DISEASES (ICHNCDs)
POLITEKNIK KESEHATAN KEMENKES SEMARANG
Semarang, 23rd – 24th November 2021

Conference day 1, Tuesday, 23rd November 2021		PIC
08.00 - 09.00 WIB	Registration	IT
09.00-09.30 WIB	Opening Ceremony	MC: Tecky Afifah SA, S.Si.T., M.Tr.Keb.
	Indonesian Anthem and Mars of Poltekkes Kemenkes Semarang	IT
	Pray	Mardiyono, MNS., Ph.D.
	Committee Report from The Chief Committee (Dr. Rr. Sri Endang Pujiastuti, MNS.)	MC: Tecky Afifah SA, S.Si.T., M.Tr.Keb.
	Welcoming Speech (Director Poltekkes Semarang)	
Conference		
09.30-10.00 WIB	Speaker 1 PPSDMK Transforming and Developing Health Professional Education	Moderator: Wadir II Jeffri Ardiyanto, M.App.Sc. 30 menit (20 menit presentasi, 10 menit diskusi)
10.00-10.40 WIB	Speaker 2 Dr. Anuraj Shankar. Nuffield Department of Medicine, The Centre for Tropical Medicine and Global Health, University of Oxford, Oxford, United Kingdom. (CP Bu Kun Aristiati Gizi)	Moderator: Dr. Heni Hendriyani, SKM., MPH. (Jurusan Gizi) @40 menit (30 menit presentasi, 10 menit diskusi)
10.40-11.20 WIB	Speaker 3. Dr. Muhammad Ikram Bin A Wahab University Kebangsaan Malaysia, Malaysia Challenging inovative research on handling non communicable disease in global era (CP Sari Kesling)	Moderator: Hari Rudijanto Indro Wardono, ST, M.Kes. (Jurusan Kesling) @40 menit (30 menit presentasi, 10 menit diskusi)
11.20 - 12.05 WIB	Invited Speakers (Head of Study Program) Dr. drg. Lanny Sunarjo, MDSc. “Mangosteen Rind as Natural Herbs for Handling Non-communicable Diseases” Umaroh, SKM., S.Tr.Keb., M.Kes. “The Role of Health Care Providers on Handling Non-Communicable	Moderator: Dr. Suharsono, MN. (Keperawatan Magelang) @15 menit (10 menit presentasi, 5 menit diskusi)
11.20 – 11.35 WIB		
11.35 – 12.50 WIB		

12.50 – 12.05 WIB	Disease Through Innovative Technology in the Research” Sri Widatiningsih, M.Mid. “The Role of Health Care Providers on Handling Non-Communicable Disease Through Innovative Technology in the Research”	
12.05 - 13.00 WIB	Break for Lunch and Praying	
13.00 - 15.00 WIB	Oral presentation	MC: Tecky Afifah SA, S.Si.T., M.Tr.Keb.
Room 1	Reviewer: Dr. Sudiyono, SE., M.Kes. (JTRR)	Estimasi ada 10 Presenter/room, dg waktu presentasi masing2 15 menit (10 menit presentasi, 5 mnit diskusi) Moderator: Fatimah, S.ST., M.Kes. IT: Intanwati Notulen: Nur Azizah Lubis
Room 2	Reviewer: Susi Tursilowati, SKM., M.Sc.PH. (Jurusan Gizi)	Estimasi ada 10 Presenter/room, dg waktu presentasi masing2 15 menit (10 menit presentasi, 5 mnit diskusi) Moderator: Mardiyono, MNS., Ph.D. IT: Ramli Herikzah Notulen: Ainun Mutmainah
Conference day 2, Wednesday, 24th November 2021		
07.30 – 08.00	Registration	
08.00 – 08.30	Opening Day II	MC: Hermien Nugraheni, SKM., M.Kes.
08.30-09.00 WIB	Speaker 1 Prof. Dr. Joan E. Edward, Ph.D., RNC., CNS., FAAN. Texas Woman University, USA “Evidance Based Practice Regarding the Role of Health Care Providers during Pandemic in Clinical Practice” (CP Dr. Rr. Sri Endang Puji Astuti, SKM., MNS)	Moderator: Dr. Sudirman, MN. @speaker 30 menit presentasi+diskusi
09.00 – 09.30 WIB	Speaker 2 Dr. Anshad Anshari Nanyang University “Empowering Public Health Services in Pandemic Era” (CP Dr. drg. Lanny))	
09.30 – 10.00 WIB	Speaker 3 Robert Shen , TWSRT (Taiwan Society Radiological Technologist)	Moderator: Dr. Sudiyono, SE., M.Kes. @speaker 30 menit presentasi+diskusi

	(Technique of Radio diagnostic and Radio therapy Department) “The role of health care provider on the program of promotion and prevention health status on handling non-communicable diseases (Innovational Technology in Medical Imaging and Clinical Radiotherapy)” (CP Bu Fatimah, S.ST., M.Kes.)	
10.00 – 10.30 WIB	Speaker 4 Assoc. Prof. Piyanut Xuto Chiang Mai University (Midwifery Department) “Comprehensive Maternal Health Services in Addressing non-Communicable Disease among Reproductive Women.” (CP Bu Sri Rahayu, S.Kp., Ns., S.Tr.Keb., M.Kes.)	Moderator: Rizky Amelia, S.Si.T., M.Kes. @speaker 30 menit presentasi+diskusi
10.30-11.00 WIB	Speaker 5 Prof. Dr. dr. Anies, M.Kes., PKK. “Challenging innovative research on Handling Non-Communicable Disease in Global Era”	
11.00 – 11.30 WIB	Speaker 6 Dr. Rr. Sri Endang Pujiastuti, SKM, MNS Poltekkes Kemenkes Semarang “Evidence Based Practice on Handling Non-Communicable Diseases in Community”	Moderator: Dr. Arwani, SKM., MN. @speaker 30 menit presentasi+diskusi
11.30 – 12.00 WIB	Certificate appreciation and photos session	
12.00 – 13.00 WIB	Break for Lunch and Praying	
13.00 – 15.00 WIB	Oral Presentation	MC: Hermien Nugraheni, SKM., M.Kes.
Room 1	Reviewer: Dr. Kun Aristiati Susiloretni, SKM., M.Kes. (Jurusan Gizi)	Estimasi ada 10 Presenter/room, dg waktu presentasi masing2 15 menit (10 menit presentasi, 5 mnit diskusi) Moderator: Irmawati, S.Kp, Ners, M.Kes. IT: Intanwati Notulen: Nur Azizah Lubis
Room 2	Reviewer: Siti Masrochah, S.Si, M.Kes. (JTRR)	Estimasi ada 10 Presenter/room, dg waktu presentasi masing2 15 menit (10 menit presentasi, 5 mnit diskusi) Moderator: Jessica Juan Pramudita, M.Si.Med., S.Ked. IT: Ramli Herikzah Notulen: Ainun Mutmainah
15.00 – 15.30 WIB	Closing Ceremony	MC: Hermien Nugraheni, SKM., M.Kes.

**SPEECH BY CHIEF ORGANIZING COMMITTEE OF 3rd
INTERNATIONAL CONFERENCE ON
HANDLING NON-COMMUNICABLE DISEASES (ICHNCDs)
POLITEKNIK KESEHATAN KEMENKES SEMARANG
Semarang, 23rd – 24th November 2021**

Assalamu'alaikum wr wb



Greeting

First of all, I express my deepest gratitude to God almighty for His blessings as the International conference conducted cooperatively by health polytechnic of Semarang can be done successfully. On this very special occasion, I wish particularly to give my best thanks to Mr. Marsum, BE, S.Pd, MHP and her colleagues as representation of POLTEKKES Semarang, for giving me a huge opportunity as a chief committee. I am most grateful for efforts put forth by all of the International conference committee, who diligently worked throughout the process of inviting both participants and speakers so that the event goes on the right track. Finally, I do hope that the event will contribute positively to health professionalism itself as well as to establish a wonderful networking between health organization and significant others. May God bless our good relationship and good will so that He will only bring goodness for all.

Wassalamu'alaikum wr wb

Semarang, November 2021

Chief Committee

Rr. Sri Endang Pujiastuti, SKM, MNS

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THE EFFECT OF RINSING TURMERIC WATER DECOCTION ON THE HEALING TIME OF PERINEAL WOUNDS IN POST PARTUM WOMEN

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Abstract

Infection is one of the causes of maternal mortality (MMR) so it is very appropriate if health workers give high attention. One of the factors that cause puerperal infection is from injury to the birth canal which is a good medium for the growth of germs. One of the non-pharmacological treatments that can be used to help heal perineal wounds is turmeric. The purpose of this study was to determine the effect of rinsing with turmeric water on the duration of perineal wound healing in postpartum mothers. This study uses a quasi-experimental research design, with the research design using a two group post test only design. The treatment group was given a decoction of turmeric water which was used for perineal wound healing while the control group only treated perineal wounds using warm water. The research sample in this study was pregnant women who had perineal injuries taken by purposive sampling technique. The samples was 22 respondents in each group. The instrument used to assess perineal wound healing was the REEDA scale. the results of the analysis of the different test with the mann-whitney p value of 0.000, meaning that there is an effect of rinsing the turmeric water decoction on the healing time of perineal wounds in post partum women. Giving rinse of turmeric water decoction affects the healing time of perineal wounds in post partum mothers. Post partum mothers who use boiled turmeric water as a perineal wound treatment faster in perineal wound healing.

Keywords: Perineal; Turmeric; Wound Healing

1. Introduction

Infection is one of the causes of maternal mortality (MMR) so it is very appropriate if health workers give high attention. According to the World Health Organization (WHO), in 2017 it was recorded that 25-55% of cases of this infection were caused by infection with wounds in the birth canal. A study conducted by Thakar et al in the UK in 2017 stated that out of 409 women suffering from sutured perineal tears, 39 (11%) had perineal wound infections (Rahmawati, Martin, & Wahyuni, 2014).

One of the factors that cause puerperal infection is from injury to the birth canal which is a good medium for the growth of germs (Manuntungi, Irmayanti, & Ratna, 2019). Improper perineal wound care can result in perineal conditions that are exposed to lochia and moist will greatly support the growth of bacteria that can cause infection in the perineum. The emergence of infection in the perineum can spread to the urinary tract or in the birth canal which can result in the emergence of complications of bladder infection or infection in the birth canal. Infection not only inhibits the wound healing process but can also

cause damage to the supporting cell tissue, so that it will increase the size of the wound itself, both length and depth of the wound (Walyani & Purwoastuti, 2015).

Midwives as health workers have the authority to overcome birth canal injuries. Midwives have the authority to treat perineal wounds of degree I and degree II by means of degree I perineal wounds are not sutured and degree II is sutured. Midwives also have an important role in treating perineal wounds with the aim of preventing infection (Nugroho, Nurrezki, Warnaliza, & Wilis, 2017).

Perineal wound care consists of pharmacological and non-pharmacological treatments. One of the non-pharmacological treatments that can be used to help heal perineal wounds is turmeric. Turmeric has the benefit of being able to heal abrasions or lacerations (Wathoni, 2016). Research by Vardanjani et al (2012) found that there was a greater decrease in the total REEDA score in the curcumin group compared to Povidone-iodine ($P < 0.001$) (Vardanjani et al., 2012).

Nasser's (2020) research shows curcumin (turmeric) is a highly pleiotropic molecule capable of interacting with many molecular targets involved in inflammation. Curcumin modulates the inflammatory

response by regulating the activity of cyclooxygenase-2 (COX-2), lipoxygenase, and inducible nitric oxide synthase (iNOS) enzymes, inhibiting the production of the inflammatory cytokine tumor necrosis factor-alpha (TNF-a), interleukin (IL)- 1, -2, -6, -8, and -12, migration-inhibiting proteins, mitogen-activated downregulators, and monocyte chemoattractant proteins (MCPs) (Nasser, 2020).

The purpose of this study was to determine the effect of rinsing with turmeric water on the duration of perineal wound healing in postpartum mothers.

2. Method

This study uses a quasi-experimental research design, with the research design using a two group post test only design. The treatment group was given a decoction of turmeric water which was used for perineal wound healing while the control group only treated perineal wounds using warm water. The population in this study were all postpartum mothers in the Sambirejo Community Health Center, Rejang Lebong Regency, Bengkulu Province. The research sample in this study was pregnant women who had perineal injuries taken by purposive sampling technique. The sample size in this study was calculated using the Frederer formula with an estimated drop out of 30% so that the number of samples was 22 respondents in each group. The instrument used to assess perineal wound healing was the REEDA scale (Redness, Odema, Ecchymosis, Discharge, Approximation). In this study, how to make turmeric boiled water using 1 handful of fresh turmeric / 80 grams, peeled the outer skin using a sharp knife, washed thoroughly in running water, finely ground using a stone mortar / wooden mash tool, boiled until boiling. (90-98°C) for 10-15 minutes over low heat with 3 cups of water, then filtered and allowed to stand until the temperature returns to normal, and rinse the perineal wound 2 times a day. Data analysis using Mann Whitney Test.

3. Result and Discussion

Univariate analysis was used to describe the frequency distribution of postpartum maternal characteristics (parity, occupation, education) and the average length of perineal wound healing in the intervention group and the control group. The results of the analysis can be seen in table 1

Table 1. Frequency Distribution

variable	groups		p-value
	Intervention	control	

	n = 22		n = 22		
	N	%	N	%	
Parity					
Primi	9	40.9	6	27.3	0.282*
Multipara, grande	13	59.1	16	72.7	
Profession					
Work	7	31.8	5	22.7	0.200*
Housewife	15	68.2	17	77.3	
Education					
Low	9	40.9	12	54.5	0.060*
High	13	59.1	10	45.5	

* Chi-Square

Based on table 1 above, it shows that the parity characteristics of the intervention group are partially 13 people (59.1%) were multi/grandeparous, while in the control group, most of the 16 people (72.7%) were multi/grandeparous. Based on the characteristics of the work in the intervention group, most of them did not work as many as 15 people (68.2%) and in the control group almost. All or 17 people (77.3%) who did not work. Based on the educational characteristics of the intervention group, most of them had a high education of 13 people (59.1%) while the control group had a low education of 12 people (54.5%). Based on the analysis of the chi square test obtained p value > 0.05 which means that there is no difference between the two groups so that it is worth comparing.

Table 2 Average perineal wound healing time

Groups	Mean	Mean	SD	p-value
Intervention	5,5		0,6	
Control	7,2	1,7	0,7	0,000*

Based on table 2, the intervention group found the duration of perineal wound healing with a mean value of 5.5, a minimum value of 5 days and a maximum of 7 days with a standard deviation of 0.6. Meanwhile, in the control group, the duration of perineal wound healing in postpartum mothers was 7.2 with a minimum value of 6 days and a maximum of 8 days with a standard deviation of 0.7. So it can be concluded that the difference in the mean in the intervention and control groups is 1.7.

Tabel 3 The Effect Of Rinsing Turmeric Water Decoction On The Healing Time Of Perineal Wounds

Groups	N	Mean	Δ Mean	Min	Max	SD
Intervention	22	5,5	1,7	5	7	0,6
Control	22	7,2		6	8	0,7

* *Mann-Whitney*

Based on table 3, the results of the analysis of the different test with the mann-whitney p value of 0.000, meaning that there is an effect of rinsing the turmeric water decoction on the healing time of perineal wounds in post partum mothers in the Sambirejo Health Center Work Area in 2020.

Based on the results of this study, it was found that the distribution of the characteristics of postpartum mothers based on parity, occupation and education. In the intervention and control groups, most of the respondents were multi/grandeparous. Respondents with multi/grande parity tend to perform perineal wound care better than respondents with primiparity. This is because mothers with multi/grande parity already have previous experience of perineal wound care so that mothers do good care, while mothers with primiparity do not have experience about perineal wound care so that mothers do not understand how to do good perineal wound care. Research conducted by Devita and Aspera (2019) and the results of bivariate analysis showed that 15 respondents (100%) with high parity did not perform perineal wound care well and none of the respondents with high parity did poor perineal wound care (0%), while of the 17 low parity respondents who did the perineal wound care well, 9 respondents (52.9%) and the low parity respondents who did the perineal wound care poorly were 8 respondents (47.1%). The results of the chi-square statistical test did not meet the requirements for the chi-square test as the fisher's exact value obtained a value (0.003) < 3 (low parity) which could be categorized as a pregnancy examiner with a good category (Devita & Aspera, 2019).

In accordance with Afandi's research, there is a relationship between parity and the duration of perineal wound healing, so mothers with low parity will pay more attention to nutrition during pregnancy and the puerperium

so that their nutritional needs are well met to help the postpartum recovery process (Afandi, Suhartatik, & Ferial, 2014). Utami (2017) states that postpartum mothers with good perineal care are mostly found in mothers who have given birth more than twice and will understand more about how to properly care for the perineum (Utami, 2017). Based on employment status, most of the respondents did not work in the intervention group and in the control group almost all of the respondents did not work. Work is a work activity with the intention of obtaining or helping to earn income or profits to meet the needs of life. The work environment can make a person gain experience and knowledge both directly and indirectly. So that researchers assume that mothers who do not work can focus more on their recovery than mothers who work because other people's information and perceptions about different stitches will make the mother more anxious and affect the duration of perineal wound healing (Mubarak, 2012).

Based on the level of education, the educational characteristics of the intervention group are mostly senior high school, while the control group is mostly junior high school education level. Education is the guidance given by someone to the development of others towards certain ideals that determine human beings to achieve safety and happiness (Wawan & M, 2014).

This study is in accordance with Walyani's theory (2015) where knowledge about perineal wounds is the mother's understanding of caring for perineal wounds properly so that infection does not occur, perineal wound care is carried out when bathing, urinating and defecating. With good knowledge, mothers can perform perineal wound care. Knowledge is an important factor in perineal wound care, if a mother has a perineal wound with less knowledge, then the mother is at risk for infection that can endanger herself (Walyani & Purwoastuti, 2015). The findings of this study indicate that the educational effect of perineal healing is that many mothers are uneducated and do not know about postpartum care (Praveen, P, & Mahalingam, 2018).

In the previous study, a statistically significant relationship was found with the educational status of prim mothers. Thus, it can be concluded that only educational status has an effect on the average practice knowledge score in both groups, it also shows that women who have higher educational status also score higher in the knowledge questionnaire (Praveen et al., 2018). It is consistent in the literature that education has a significant effect on perineal care in postpartum women.

The results of this study showed that the average length of perineal wound healing in the intervention group was 5.5 days and the comparison group was 7.2 days with a mean difference of 1.7. Post partum mothers whose perineal wound healing is lacking, the wound is still wet and the stitches have not closed on the 7th day. This was more commonly found in postpartum mothers in the control group. Postpartum mothers who were given a rinse with turmeric boiled water healed their perineal wounds more quickly with 5 days of drying the wound and the stitches had closed. The results showed that there was an effect of rinsing turmeric decoction on the healing time of perineal wounds in post partum mothers.

Curcumin (diferuloylmethane) is the main curcuminoid in turmeric and ginger which is responsible for the yellow color. Curcumin has been shown to have anti-inflammatory, antioxidant, anti-carcinogenic, anti-mutagenic, anti-coagulant and anti-infective effects. In addition, curcumin has also been shown to significantly increase wound healing ability (Nasser, 2020). In line with the research of Mahmudi, et al (2015), entitled the impact of turmeric cream on Caesarean wound healing. Turmeric is effective in accelerating the healing of caesarean section wounds. The use of turmeric is recommended to reduce wound complications due to Caesarean section.

Treatment with curcumin could enhance the synthesis of collagen, DNA, fibroblast, vascular densities and other important factors in wound healing. In line with the research of Vardanjani et al (2012) with the title of the benefits of curcumin wound healing for perineal repair after episiotomy. The main

objective of this study was to evaluate the role of curcumin with povidone-iodine. The results showed that curcumin solution for episiotomy was more effective for perineal wound healing than povidone-iodine. Treatment with curcumin can increase the synthesis of collagen, DNA, fibroblasts, vascular density and other factors in perineal wound healing (Vardanjani et al., 2012).

Research Wathoni et al (2016), curcumin which is the main compound of turmeric and ginger, many studies related to its potential that can accelerate the process of wound healing in the skin both acute and chronic wounds. Naturally the stages are hemostasis, implantation/ inflammation, proliferation and remodeling. Many preclinical studies have shown that curcumin is able to work in the implantation, proliferation and remodeling phases of the wound healing process so as to reduce the time required for wound healing (Wathoni, 2016).

The stage of hemostasis begins immediately after injury, through platelet aggregation and fibrin clot formation. Then, the inflammatory stage can be identified by the presence of neutrophils for removal of wound debris and macrophages that release cytokines at the wound site. In the proliferative stage, fibroblasts penetrate the wound and deposit new extracellular matrix to initiate the re-epithelialization process. Finally, the synthesis of collagen and myofibroblasts facilitates the process of further tissue remodeling. All stages must occur in the right sequence and in the right timeframe to ensure complete recovery (Wathoni, 2016).

The effect of curcumin on wounds at each phase of wound healing is to inhibit transcription of NF (k) B factor activity, reduce the production of TNF- and IL-1 cytokines so as to reduce inflammation, reduce ROS free radicals (at low doses of curcumin) and increase the formation of ROS (at higher doses than curcumin) and reduce the production of antioxidant enzymes, thereby increasing fibroblast migration, granulation tissue formation, collagen deposition and in general re-epithelialization. It becomes apoptotic in the

early phase of wound healing thereby eliminating unwanted implantation cells at the wound site and increasing wound contraction by increasing the production of TGF- β and therefore increasing fibroblast proliferation (Wathoni, 2016).

Nasser's (2020) research shows curcumin (turmeric) is a highly pleiotropic molecule capable of interacting with many molecular targets involved in inflammation. Curcumin modulates the inflammatory response by regulating the activity of cyclooxygenase-2 (COX-2), lipoxygenase, and inducible nitric oxide synthase (iNOS) enzymes, inhibiting the production of the inflammatory cytokine tumor necrosis factor-alpha (TNF- α), interleukin (IL)- 1, -2, -6, -8, and -12, migration-inhibiting proteins, mitogen-activated downregulators, and monocyte chemoattractant proteins (MCPs) (Nasser, 2020).

This study is in line with Mutia's research (2020) which states that giving turmeric infusion as a complementary therapy to perineal wounds has been shown to eliminate redness, swelling, accelerate closure and healing time of perineal wounds (Mutia, 2020).

4. Conclusion and Suggestion

Giving rinse of turmeric water decoction affects the healing time of perineal wounds in post partum mothers. Post partum mothers who use boiled turmeric water as a perineal wound treatment faster in perineal wound healing.

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