



**STIKep PPNI Jawa Barat, Bandung - INDONESIA**  
**National Cheng Kung University Hospital - TAIWAN**  
Bandung, 16<sup>th</sup> – 17<sup>th</sup> July, 2018

**Conference Book**  
**International Conference on Health Care**  
**and Management**

“Evidence to inform action on supporting and implementation of  
SDGs”

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**Conference Book International Conference on Health Care and Management:**

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This book published by:

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**Conference Book – Table of Contents**

**International Conference on Health Care and Management-2018**

Welcome Message.....	4
Conference Committee .....	8
Conference Program .....	10
Presentation Schedule .....	14
Speaker Biographic.....	30
Information .....	43

## Welcome Message



Assalamualaikum Warahmatullahi Wabarakatuh

Dear honorable guests,  
Sustainable Development Goals (SDGs) as an agreement of sustainable development objectives agreed by all countries at the 2015 UN sessions. Each country including Indonesia has an obligation to implement this joint development plan by applying universal, integration and inclusive principles by ensuring that no one missed or “No-one Left Behind” Indonesia has Nawa Cita or 9 priority agenda which should synergize with SDGs and can be used as health program application in Indonesia to also achieve SDGs.

On behalf of the organizing committee and the Nursing Society of Indonesia, I am glad to invite you to join ICHM 2018 (International Conference on Health Care and Management) in Bandung, Indonesia on July 16-17, 2018.

The conference is expected to reveal some solutions for evidence-based health care and scientific facts to be discussed by various viewpoints from diverse speakers from around the world with the title “Evidence to inform action on supporting and implementation of SDGs. Through the International Conference is expected to improve health services, especially in the field of nursing in Indonesia to improve the human development index.

We hope all participant could benefit from the exciting program and will surpass your expectation and that will be an inspiring event.

Warm regards,

A handwritten signature in black ink, appearing to read 'Dhika Dharmansyah'.

**Dhika Dharmansyah**  
Conference chair



Assalamu'alaykum Wr.Wrb  
Good morning and best wishes for all of us.

Ladies and gentlemen, in such a great and happy day, let's praise and thank to Allah Swt who has given us grace and mercy to all of us to gather in this International Conference on Health Care Management event today.

First of all, we would like to gratitude and appreciate highly to national Cheng Kung University Hospital has given the opportunity and confidence to our institution STIKep PPNI Jabar for the second time in collaboration to organize International Conference on Health Care Management with theme: "Evidence to inform action on supporting and implementation of SDGs". This event is one of follow up The memorandum of Understanding between NCKUH with STIKep PPNI Jabar.

STIKep PPNI Jabar is as a nursing education institution carry out the mandate to create professional nurse, we must implement all TRIDHARMA University activities in academic atmosphere that aims to broaden and improve nursing and existence of nurse profession capacity in nation developing continually.

As we know the university academic quality is determined by its researches and graduates result quality. The research work results may be either a right against managing intellectual wealth equity as well as scientific work which is able to be publicized through scientific journals and scientific gathering forums of the same scientist background both in national and international level.

Nevertheless, the publishing of journal researches is published by its university. Nowadays, it is irregular because there are both financial and scientific manuscript availability drawbacks. Scientific regular manuscripts are very limited because manuscript contributor is only from its university as well.

The high education Research and technology ministry data in 2017, it stated that there were an increase of research work publishing done by practitioners, academicians and researchers of Indonesian. The amount of Indonesian research publishing on international journal certifiable indexed Scopus tended to increase. The high education Research and technology ministry data on December 1<sup>st</sup> 2017 noted that Indonesia scientific research publishing reached 14.100 journals. Meanwhile, on October 1<sup>st</sup> 2017 there were as many as 12.098 journals.

However, internally nurse profession scientific research journals are still less of publishing. It is alleged to the low of quantity and quality publishing about nursing. One of the drawbacks is rarely the interaction between nursing scientists and experts in scientific conferences. Some efforts are carried out by STIKep PPNI to encourage and to accelerate sharing knowledge amongst the nursing experts. Accordance to the goals, National Cheng Kung University Hospital Taiwan and STIKep PPNI have made MoU and held as this International conferences organizer. Hopefully, it is able to bridge all stakeholders, practitioners, and academicians in supporting the quality of the human resources especially, nurses and health workers as well.

The honourable ladies and gentlemen,  
Nowadays, in the global era, the transformation runs rapidly and consequently it makes the knowledge based society. Information and communication technology development are very important in on its role in manifesting society development based on the knowledge. The higher education of society will be higher of health service quality demands specially nurse.

Accordance to the effort, this International conference aims to,

1. Facilitate the knowledge sharing between health experts and nurses to encourage the goal of health human resource quality.
2. Produce health scientific and nursing articles deserve to be published on international scopus indexed journal.
3. Make communication networking amongst Universities, research institution, nurse practitioners, and other stakeholders.

I truly believe that all participants through the 2 days in international conference, our goals above are able to be manifested well.

Finally, I would like to thank to all of participants diligently and with spirit of attending this international conference on health care management.

Wish the conference is able to be knowledge sharing event and delightful and successful as well, the conference will be enlightened and interchange will do great help for us after attending this conference, especially STIKep PPNI Jabar and generally for all profession nurses to provide health services to communities, aamiin ya robbal alamin.

Wassalamu'alaykum Wr.wb.

Kindest regards,



The Dean of STIKep PPNI Jabar



Excellencies, Distinguished Delegates, Ladies and Gentlemen,  
Selamat Siang,

I'm ChyunYu Yang, the superintendent of National Cheng Kung University Hospital in Tainan, Taiwan.

On behalf of our hospital, it is my pleasure and privilege to welcome all of you to participate in the international conference on health care and management 2018.

To our eminent speakers and delegates who have come from UK, Netherland, Korea, Japan, Thailand, Singapore, Taiwan, and Indonesia, I bid you a very warm welcome to Bandung. We are indeed honoured to have you here with us. We have about 1.000 participants from different place in Indonesia and countries gathered here today, making our conference a truly meaningful one.

This is our second time collaborate with STIKEP PPNI Jawa Barat to hold an international conference. Last year, we have very successful conference with the theme focus on infection control and disaster management. And this year, our conference theme is "evidence to inform action on supporting and implementation of SDGs".

The Sustainable Development Goals (SDGs) known as the global goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. Goal 3 addresses all major health priorities and calls for improving reproductive, maternal and child health; ending communicable diseases; reducing non-communicable diseases and other health hazards; and ensuring universal access to safe, effective, quality and affordable medicines and vaccines as well as health coverage.

However, the world seems still far from ending maternal mortality, with more than 303,000 deaths in pregnancy or childbirth occurring annually. NCDs are also a growing problem, causing 40 million deaths in 2015.

But, All in all, we can take comfort in the fact that SGDs indicators are moving in the right direction .Yet we still have plenty of work to do.

I wish in the next two day and a half, we have the opportunity - and indeed the responsibility - to prepare and add knowledge related the current situation and progress reflection of SDGs.

In closing, I encourage delegates to participate actively in the interesting discussions over the next two days. I wish everyone a successful and fruitful conference.

Thank you.

## Conference Committee

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## RELATIONSHIP OF PAIN LEVEL TO ENDORPHIN SECRETION ON BABY IN THE IMMUNIZATION OF PENTABIO

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### ABSTRACT

**Background:** Pain is a subjective, emotionally unpleasant and individualized sensation, which affects both actual and potential tissue damage. This individual pain is expressed through various levels: mild, moderate and severe pain. Pain that is often experienced by infants such as pain caused by Pentabio invasive immunization action. One of the nursing interventions in reducing pain in infants before pentabio immunization is with a 24% sucrose or sucrose solution 75% two minutes before the action. Sucrose is a medium that will stimulate the secretion of endorphins to reduce pain. **Objectives:** The purpose of this study was to determine the relationship of pain level to endorphin secretion in infants who received Pentabio immunization. **Methods:** The research method used was quasi experiment with correlation approach, to measure pain scale using NIPS Scale, descriptive data analysis for sub variable using univariate analysis and bivariate analysis with T test, to know endorphin level after sucrose administration was done ELISA examination, from baby saliva. The number of samples in this study were 30 samples with purposive samples. **Results:** The results, based on Mann Whitney test obtained the average value for mild pain scale 13.2569 and average value of moderate pain scale 14.1079 with p- value 0.545. This suggests that there is no significant relationship between the pain scales experienced for endorphin secretion but there is a difference in the amount of secretion on the larger pain scale compared with the mild pain scale. **Conclusions:** so it can be concluded that the secretion of endorphins will always be secreted when the baby gets a good response with mild or moderate scale pain. It is recommended to continue to give a sucrose solution because there is an increase in the secretion of endorphin even in small amounts.

**Keywords:** endorphins, immunization.pentabio

### INTRODUCTION

The reaction to painful stimuli is a physiological and behavioral response that occurs after perceiving pain. The reaction of the pain is felt by different individuals ranging from mild to moderate to severe pain. The perceived pain causes a "flight or fight" reaction, which is a common adaptation syndrome. (Kozier 2009, International for the study of Pain in Prasetyo 2010).

Pain has an adverse short-term and long-term effect on the baby. The invasive action with immunization injections resulted in a brief pain; the study found that it may cause distress in infants, elderly and vaccinators (Lewindon, 1998 and Reis, 2003 in Hasan et al., 2010).

The inner threshold of pain in pentabio immune infants may be the same in every baby, but the infant's reaction to pain is very different, as well as the intensity of pain signals delivered to the spinal cord to various areas of pain receptors in the brain can change significantly in different circumstances. This is mainly due to various system activities that inhibit pain within the spinal cord and inside the brain. (Guyton, 1990 in <http://www.ilmukesehatan.online/2017/08>).

Nurses have an important role in providing nursing care to children, in this case, to handle the pain due to pentabio immunization invasive action. One of the actions of nursing to reduce pain during pentabio immunization is to give oral sucrose solution. In this study, the given sucrose solution was 24% and 75%. Provision of a 24% sucrose solution is considered the lowest and safe percentage of the percentage, as does the 75% sucrose solution as the highest percentage safe for infants. The provision of sucrose (sucrose solution) is a cheap, fast-working, non-sedative, easy-to-administer, non-invasive and available natural resource (Linda, 2008).

Sucrose is one of the media that can stimulate endorphin secretion. Endorphins can block and suppress the pain with the aim that when the body feels pain, the individual can still focus and not let the perception of pain causes panic and stress on the body. This analgesic effect of sucrose is thought to result from the release of beta-endorphin (an endogenous opiate produced by the body) from the preabsorption mechanism of sweetness. Oral administration of sucrose reduced the intensity of pain to a mean of 5.30 (moderate pain) from a mean of 8.25 (severe pain), with a decrease in mean pain of 2.95 (Minarti Aries, Damayanthi Pande Dewi, 2013).

Beta-endorphin is produced by the fetus at birth by the pituitary gland, the hypothalamus and through the bloodstream work by binding to receptors in the brain regulating the pain regularly that begins from the tasting process of the sweet taste sensation of the orogustatory system. The orogustatory system is a system that transmits the taste system to the central nervous system. Stages of this orogustatory system begin with taste stimulation on the tongue, and then stimulation is continued through pharynx, larynx, glossopharyngeal nerve, vagus nerve ends in the nucleus of the solitary tract and conveys to the central nervous system. It is in this central sibling system that this endogenous flow so that the pain of immunization action is minimized is activated (Blass, E, M., 1999; Bradley, 2005 in Zulva 2017).

Endorphins are produced in the pituitary gland and hypothalamus in the brain. Endorphins can be released primarily because of the excitement of pain and stress in the body. Endorphins have the same ability with opiates in suppressing pain and giving pleasure to one's body. In addition to sucrose, endorphins can also be released during exercise, laughing, listening to music, eating spicy foods, chocolate, and orgasm during intercourse. Endorphins are substances in the body that function in the regulation of stress, suppress pain, increase body immunity, inhibit the aging process, control appetite, lower blood pressure, give reward system (give pleasure) in brain and mood. (Carole Wade, Carol Tavis, 2013).

Based on the above background researchers conducted a study of the relation of pain level to endorphin secretion in infant immunized pentabio in order to identify the scale of pain expressed during immunization pentabio, second can be identified amount of endorphin secreted during pentabio immunization, and also know relation between pain scale to secretion of endorphins at the time of pentabio immunization. This is a basic data for the development of the nursing science of children and is expected as a consideration of nursing interventions in overcoming pain at the time of pentabio immunization.

## **METHODS**

### **Research design**

The research method used was experimental quasi with the design after only design intervention giving 24% sucrose solution and 75% sucrose solution in treatment group and control group.

Measurement of pain using NIPS pain scale.

### **Population and sample**

The population in this study were all infants aged 2-12 months who visited Puskesmas Garuda Kodya Bandung who underwent Pentabio immunization procedures during the data collection period. The number of samples taken as many as 30 samples according to inclusion and exclusion criteria.

Sampling in this research is done by Non-Probability Sampling with Purposive Sampling technique.

## Research Instruments

Measurement of pain scale using NIPS instrument in the form of observation sheet. Measurable

Sukrosa 24%

Sukrosa 75%

dimensions include five behavioral indicators such as facial expressions, facial expressions, respiratory patterns, arm and leg movement, arousal status. The observation sheets used in this study have tested the validity and reliability shown in the research journals "The value of the Interclass correlation coefficient (ICC) is perfect ( $ICC > 0.9$ ). The minimum correlation value between inter-rater 0.868. Validity values have a high correlation between NIPS and visual analog scale ( $r = 0.949$ ;  $p < 0.001$ )

## Data analysis

## 1. Univariate Analysis

Univariate analysis is used to describe the scale of pain and the amount of endorphin secretion present in infant saliva. Generally in this analysis only yields the average value of the pain scale and the amount of endorphin secretion

## 2. Bivariate Analysis

Data analysis used in this study is to consider the type of variable and the distribution of data with T-test. The analysis is used to assess the scale of pain scale and the amount of endorphin secreted after intervention in the intervention and control group, while for the results of the relationship test the level of pain with the secretion endorphin used saphiro wilk normality test for standard distributed data, but if data not normally distributed used non parametric test with Mann Whitney test.

**RESULT**

Based on the results of the study obtained level of pain scale is as follows:

Table 1. NIPS Scale in both Intervention groups

NIPS Scale	Group		Jumlah
	Sucrose 24%	Sucrose 75%	
No Pain	0 (0%)	(0%)	0
Mild Pain	6 (40%)	10 (66,7%)	16
Moderate Pain	9 (60%)	5 (33,3%)	14
Severe Pain	0(0%)	0 (0%)	0
Total	15 (100%)	15 (100%)	30

Table. 2 Endorphin Secretion In Infant Saliva After Pentabio Immunization Sucrose 24%  
Sucrose 75%

No	Meas.	Calc.	Dil. factor	Result	SD	CV-%	Meas.	Calc.	Dil. Factor	Result	SD	CV-%
1	2.159	8.418	1	8.42	6.21	46.36	1.685	19.04	1	19.04	6.08	43.76
2	1.948	12.153	1	12.15			1.71	18.244	1	18.24		
3	1.985	11.403	1	11.4			1.615	21.467	1	21.47		
4	1.42	30.147	1	30.15			1.923	12.685	1	12.68		
5	1.974	11.622	1	11.62			1.626	21.065	1	21.07		
6	1.903	13.127	1	13.13			1.809	15.411	1	15.41		
7	2.009	10.941	1	10.94			1.885	13.537	1	13.54		
8	1.495	26.423	1	26.42			1.918	12.794	1	12.79		
9	1.948	12.153	1	12.15			1.797	15.729	1	15.73		
10	2.011	10.903	1	10.9			1.489	26.701	1	26.7		
11	2.098	9.372	1	9.37			2.132	8.829	1	8.83		
12	1.974	11.622	1	11.62			2.147	8.598	1	8.6		
13	1.931	12.512	1	12.51			1.593	22.295	1	22.29		
14	2.031	10.532	1	10.53			1.488	26.748	1	26.75		
15	2.082	9.638	1	9.64			2.287	6.686	1	6.69		

#### Pain Relation Test Result with Endorphin Secretion

Based on the normality test, the value of pValue with saphiro wilk is 0,000, which means that the data

is not normally distributed. Therefore the nonparametric test is used by Mann Whitney test

**Table 3. Pain Rate with Endorphin Secretion in Infants After Pentabio Immunization**

Pain Scale	Endorphin Secretion				pValue
	N	Mean/ Median	Std. Deviation	Std. Error Mean	
Mild	16	13.2569/ 11.62	6.02782	1.50696	0.545
Moderate	14	14.1079/ 11.88	6.26713	1.67496	

Based on the above table This shows that there is no significant relationship between the pain scale experienced on endorphin secretion but there is a difference in the amount of secretion on the scale of the pain being larger than the mild pain scale.

#### Discussion

Based on the pain scale shown in Table 1, the results of the pain scale experienced by the infant were a pain with a light scale of 16 infants and pain with the moderate scale of 14 infants, no pain scale, and no pain. The pain suffered by infants during pentabio immunization includes acute pain that is felt briefly associated with endorphin beta secretion. Beta-endorphins are proteins that are primarily synthesized by the pituitary gland in response to physiological stressors such as pain. Beta-endorphins through various mechanisms in both central and peripheral nervous system function to relieve pain when bound to opioid receptors. Opioid drugs function to mimic natural endorphins, competing for binding to receptors. In acute conditions, exogenous opium inhibits the production of endogenous opiates while in a chronic state, exogenous opiates inhibit the production of endogenous opiates and opioid receptors (Adam S Sprouse et al., 2010).

By the concept which states that also in line with research Kristiawati (2010), which states that the granting of sucrose makes the neonates calm and the effect continues some time after the procedure is completed.

The amount of endorphin secretion shown in Table 2 shows the varying endorphin secretion of this condition in accordance with the concept that by stimulating the same solution of sucrose, the level of

endorphin will be different in each person because its sensitivity to excitement for different discharge at every baby depends on the individual habits of Darwin, Philips (2013). Nursing understands that the individual as a unique being, though given the same stimulus but the expressed response will be different, as well as the premises of endorphin secretion. Beta-endorphins are neuropeptides involved in pain management, have effects such as morphine, and are involved in natural activities such as feeding, drinking, sex and mother behavior (Koob G. 1992; 13: 177-184.) In Adam S Sprouse, et al., (2010).

When considered from the results of statistical tests that the results of this study have a value of P-value 0,545 greater than the value of 0.05 then there is no relationship between the scale of pain to endorphin secretion. It is something to understand that the concept of concepts that support endorphin secretion is overwhelming, as Carole Wade, Carol Tavis, 2013 put forward. Some theories suggest that Endorphins have the same ability as opiates to suppress pain and give pleasure to one's body. Also, endorphins can also be released during exercise, laughing, listening to music, consuming spicy foods, chocolate and when a person experiences pain. This condition is a factor that can increase endorphin secretion varies in each infant in this study and endorphins remain secreted, but there appears to be a difference in the number of secretions in Table 2 because of the difference in the treatment of the percentage of the sucrose solution that affects the amount of endorphin secretion.

#### Conclusions and suggestions

Based on the results and the high exposure can be concluded that the secretion of endorphin will always be secreted at the time the baby gets a good response with mild or moderate scale pain. The pain scale raised as mild and moderate pain responses in statistically immunized pentabio infants is unrelated to endorphin secretion, but it is advisable to continue with sucrose solution because there is a slight increase in the secretion of endorphins.

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