Conference Book
International Conference on Health Care and Management

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

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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,

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 1st 2017 noted that Indonesia scientific research publishing reached 14.100 journals. Meanwhile, on October 1st 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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- Dahlan
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- Diki
- Uu
- Siswo
ABSTRACT

**Background:** Sepsis is a condition of excessive body response toward infection, the danger of not monitoring patients with sepsis can make sepsis shock condition, therefore fluid responsiveness assessment is important to determine patient’s hemodynamic status during initial of resuscitation. Passive Leg Raising (PLR) is an intervention to increase the preload or stroke volume with elevate both of leg with 45 degrees. PLR position will increase blood flow from leg to heart cavity which makes alteration the hemodynamic after intervention which one to predict the fluid response at patients with hemodynamic disorder. **Objectives:** Aims of this study is to determine the effect of PLR toward noninvasive hemodynamic monitoring at sepsis patients in ICU of Ulin General Hospital. **Methods:** This study is pre-experiment with pretest and posttest design approach at 30 respondent. The statistical test used paired t-test and Wilcoxon. **Results:** The Result showed PLR has influence toward BP, MAP and RR with P value < 0.05. **Conclusions:** This study need to apply and develop to improve the fluid’s response monitoring with noninvasive nursing procedural.

**Keywords:** Sepsis, PLR, noninvasive hemodynamics

**INTRODUCTION**

Prevention of life-threatening health problems in critically ill patients is important in emergency nursing practice, where patients with critical conditions are susceptible to infection and if not treated properly will develop into sepsis. Sepsis is a condition due to excess body response to infection. Sepsis is a syndrome of physiological, pathological, and biochemical disorders, caused by an overwhelming body response to infection, which can cause tissue damage, organ failure, and death. The prevalence of sepsis incidence is quite high according to CDC data due to sepsis death rate of 28% to 50%. The number of sepsis-related deaths is 8,888 cases with a case-increase rate of 37% by 2015. The third international consensus (Sepsis-3) 2016 sepsis is defined as life-threatening organ dysfunction caused by the host response to infection. The dangers of non-observed sepsis occurrence in patients allow the number of patients to fall into a condition of septic shock which is complicated by organ dysfunction in which cellular and metabolic blood circulatory disorders occur. This condition occurs due to organ dysfunction associated with increased vascular permeability that leads to extravasation of intravascular fluid to the interstitial space. The displaced fluid can not return until the inflammatory response is lost and allows the crystalloid fluid used to replace the lost volume accumulated in the extravascular space, causing tissue edema. In this condition perfusion is poor, and cell oxygenation does not work which causes cell damage to gain weight. Therefore assessment of the fluid response becomes a very important thing requiring attention, prevention and management from the beginning. Inadequate tissue hypoperfusion can cause and increase organ damage whereas if excessive will cause tissue edema that
will aggravate the condition of the patient.

Passive leg raising test is one of non-invasive fluid response method with dynamic evaluation, using a percentage of 10-15% volume stroke increase as fluid responsiveness marker. Many studies have suggested PLR’s reliability to predict fluid response, and its physiological excellence makes this test more useful and have minimal negative effects. PLR is easy to do and does not require a fee.

The position of leg raising in the hospital is known as the Trendelenburg position and is more directed to shock patients to help stabilize hemodynamic status, whereas for fluid responsiveness tests it has not been applied.

Assessment of fluid response at resuscitation is done only by calculating the intake and fluid output, which for the measurement is more influenced by the use of drugs such as diuretics. While proper and immediate management should be performed in sepsis patients to prevent the condition worsening, one of them is by monitoring fluid resuscitation using fluid responsiveness. The purpose of this study is to identify the effect of passive leg raising test on noninvasive hemodynamic monitoring value in sepsis patient room Intensive Care Unit Ulin Hospital.

METHODS

This study is pra experiment with pretest and post test design approach at 30 respondent. The statistical test used t-test and Wilcoxon to see the different values of blood pressure, MAP, pulse, respiration and SpO2 monitoring before and after the PLR test, considering the results of the measurements more accurately if performed on the same subject of treatment group. In the design of this study, the observation was done twice before and after intervention in one treatment group. However, no randomization was performed for the treatment or control group.

Measuring tool to assess respondent’s hemodynamic status is bedside monitor mounted near-patient and had been calibrated by medical equipment technician Ulin Hospital so that monitor tool is believed can display with a precisely hemodynamic status of the respondent. To record observations, the researcher uses an observation sheet containing respondents’ demographic data and hemodynamic status including blood pressure (systole and diastole), MAP, HR, RR, and SpO2.

The research was conducted at ICU of Ulin General Hospital Banjarmasin in November 2017 until December 2017. The population in this study were all patients patients sepsis ICU room with infection criteria and qSOFA ≥2 score. Samples were taken by accidental sampling sample technique were 30 respondents with criteria are 1. Disease status unrelated to contraindication of PLR use (patients with abdominal pressure, painful condition, and agitation), 2. patients aged >17years.

This study uses paired sample t-test analysis because it does the measurement on the same subject to a certain influence or treatment. Principles of ethics conducted in this research process include respect for human rights and dignity (Respect of person), respondents get a guarantee of treatment (beneficence nonmaleficence) and respect for justice (Respect for Justice).

The research procedure is started with preparation phase begins by taking care of the application permit letter after passing the ethical test from the research ethics committee of FKIK-UMB. The application permit letter is addressed to the Director of Ulin Hospital. Researchers worked with room nurses who had previously been trained to equate the understanding of PLR-related tests with the procedures used by the researchers. Observation of patient's hemodynamic status was performed by the researcher. Data collection on respondents conducted before and after the PLR test and after returning the initial position according to the procedure made by the researcher.

RESULTS

Characteristics of Respondents

The results of this study indicate most of the age of respondents who most stretched ≥45tahun (76.7%) as many as 23 respondents. More than half of respondents were female (60%) as many as 18 respondents, and the classification of disease-causing sepsis was a surgical disease (post-operation) with a percentage (63.3%), 19 respondents.
Tabel 1: Characteristic of subjects (n=30)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Σ</th>
<th>(%)</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>female</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
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<td>100</td>
</tr>
<tr>
<td>a. &lt; 45</td>
<td>7</td>
<td>23.3</td>
</tr>
<tr>
<td>b. ≥ 45</td>
<td>23</td>
<td>76.7</td>
</tr>
<tr>
<td>Total</td>
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<td><strong>Classification of diseases</strong></td>
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<tr>
<td>medical</td>
<td>11</td>
<td>36.7</td>
</tr>
<tr>
<td>surgical</td>
<td>19</td>
<td>63.3</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From the data distribution, the average value of Systole is 90-130mmhg stretched as much as 63.3%, and average diastole range 60-90mmhg as much as 76.7% On average MAP value obtained more than half of respondents are spanned 60-100 mmHg as much as 86.7%. The average value of HR is more in the range of > 100 as much as 53.3%, the average percentage of RR 56.7% is stretched > 24x / mnt while for the average SpO2 is in the range of > 95% as much as 86.7% which is said to be within normal limits.

![Distribution of hemodynamic monitoring before PLR test](image1)

![Average noninvasive hemodynamic monitoring values before and after PLR testing and return to initial position](image2)
From the data above can be concluded that the average value of blood pressure (systole and diastole), MAP, HR and SpO2 after the PLR so while the respiration test there is a decline in the average value. After normality test data is normal data is the blood pressure, MAP, pulse and respiration for the statistical test used to see the effect is paired t-test while for abnormal data that is SpO2 used statistical test Wilcoxon.

The result of the paired t-test
In paired t-test test, there is the influence of PLR test before and after PLR 1 min on systole, diastole, MAP and RR value with P value <0,05 so that hypothesis is accepted. While for p-value of HR > 0,05 so it said there is no influence of PLR test on HR value before and during PLR 1 minute. The paired t-test after the PLR test and after returning to the starting position there is an effect on the value of systole, diastole, MAP and RR with P value <0,05 so there is no influence PLR test to HR during PLR test and after return to the starting position. Test paired t-test before the PLR test and after return to the initial position obtained no effect on the value of systole, diastole, MAP, HR and RR with P value > 0,05.

DISCUSSION

Age
The results of this study obtained the average age of youngest respondents is 23 years, and the oldest 82 years, the average age of the most in this study is ≥45 years where according to WHO age category > 45 including early age. As for the average disease classification of respondents who belong to sepsis, the category is postoperative respondents (surgery). The incidence of sepsis is higher in children and elderly 4. One of the factors that contribute to sepsis mortality is age, i.e., patients <1 year and over 65 years old 17. Epidemiological studies of four hospitals in New York 18 suggest that septic patients are more mostly found in adult patients.

Immune system development stage shows that the older age, the less immunity level of the immune system, the lower the ability to kill pathogens. Immunity in the elderly is said to be in a state of immunobullous that decreases the competence of the immune system that makes it more susceptible to disease, especially infections including loss or inhibition of hypersensitivity, the ability to clear the infection and predispose to nosocomial infection. Also, many risk factors cause elderly individuals to have a high risk of suffering sepsis, namely the presence of comorbidity, malnutrition and endocrine deficiency.

Gender
Based on the gender of this study obtained the majority of respondents female sex. More sepsis incidence in men. Women of a certain age also have sepsis incidence with lower mortality, but the difference in sepsis-caused mortality is explained by the difference in underlying disease and
location of infection.1

The comorbidity of respondents on the results of this study is more in surgical patients (postoperative) as much as 19 respondents (63.3%). One of the factors that contribute to sepsis mortality is the installation of invasive devices and invasive procedures.17 Critical conditions such as after surgery or while in the hospital for long periods of time are also the cause of sepsis.20

Patients with a critical condition and long beds rest are at risk of infection, and any severe infection can cause sepsis. Sepsis develops due to an infection that has a port d'entrée that is generally wounded or other epithelial defects. Also, several factors are found to play a significant role in the development of sepsis. These factors include the pathogenicity or virulence of microorganisms, host factors, and environmental factors. Sepsis is also triggered by infection of any part of the body, the installation of invasive devices / invasive procedures can also be a factor in the occurrence of sepsis because the medical equipment used is very varied accompanied by actions/movements that are manipulative and explorative will cause many problems such as laceration and bleeding network edema and contamination will provide an opportunity for infection.

The effect of PLR testing on blood pressure monitoring values.

The result showed that there was an increase of systolic blood pressure after intervention (mean 124.57 to mean 136.10) with a p-value for systole blood pressure before and after PLR test was 0.000 (p-value <0.05) so that there was an effect of PLR test on blood pressure systolic in septic patients. This means that PLR testing affects the value of monitoring systolic blood pressure in septic patients. The PLR test makes a change in hemodynamic (blood pressure) after PLR as a sign to predict fluid responsiveness in patients with hemodynamic status disorder.5

Lifting the legs in the horizontal position of the body induces the flow of blood from the lower body to the central circulation compartment, especially the cardiac cavity. PLR tests can increase stroke volume and cardiac output by 12% which can be seen from the increase in blood pressure and heart rate.12 A Monnet X13 study using radiolabeled erythrocyte in humans demonstrates that blood volume that moves from the lower body during PLR position is as much as 150 ml of blood, so that an increase in cardiac output may increase systolic pressure.

This is confirmed by Sherwood19 said that blood pressure is strongly influenced by the main physiological factors: a) Return of blood through vein/amount of blood returning to the heart through a vein. With a PLR position that both lower extremities as high as 4510 transfers 300-500ml blood to the intrathoracic (heart) so that it will increase the volume of heart blood that causes increased ventilation in the systole phase, increasing.

b) Frequency and strength of contraction, meaning that when the frequency and strength of contraction increase (within normal limits), cardiac output will increase as well and this causes the systole pressure to increase. c) Peripheral resistance. d) Large arterial elasis. e) Blood viscosity. f) Bleeding and hormones.

The effect of position change on heart function with Doppler echocardiography was found to decrease systolic blood and increased diastolic16. But in the study of PLR effects in shock patients found increased systolic and diastolic blood pressure after PLR24 position. This is reinforced by "Hemodynamic Effects Of Passive Leg Raising" of increased cardiac output and systolic pressure after PLR.1

Based on indicators of fluid responsiveness seen from blood pressure systole obtained results from 30 respondents only six respondents who said fluid responsive while 24 respondents said not fluid responsive. The effect of sepsis on venous capacity and myocardial function, probably less than 40% of hypotensive patients with severe sepsis or fluid responsive sepsis shock.22

The difference in the effect of PLR testing on blood vessels in septic patients is influenced by various factors such as blood flow to the central circulation or blood volume besides sepsis patients also the occurrence of circulatory disorders are caused because vasodilation is enhanced by macrocirculation. The presence of inflammatory cytokines leads to the production of adhesion molecules in endothelial and neutrophil cells. Neutrophilic endothelial interactions lead to further endothelial injury through the release of neutrophil components. Eventually, the activated neutrophil releases the nitric oxide. Oxidic nitrates may interfere with microvascular permeability and increase in microcirculation flow. Due to the presence of powerful vasodilators thereby allowing neutrophils and
fluids to extravasate into the infected extravascular spaces leading to septic shock.

Based on research result of diastole blood pressure before PLR done after PLR 1 min has p-value 0.039 (p-value <0.05) so it can be concluded there is the influence of PLR test to diastole blood pressure value before PLR is done. The results showed that there was a decrease in diastolic blood pressure during a PLR test (mean 73.83 to 78.13), PLR lowered mean arterial pressure due to a decrease in diastolic blood\textsuperscript{23}. Meanwhile, according to research on the effect of PLR in shock patients was found an increase in systolic and diastolic blood pressure after PLR position\textsuperscript{24}.

Ventricular volume replenishment at the diastolic end (preload) which is the reflex of the heart muscle is stretched before contracting. The occurrence of diastolic decrease is due to the decrease of initial load (preload). Also, overall hypoxic hypoxia resulting in cardiovascular insufficiency in septic patients is also caused by decreased preload and an impact on diastolic pressure.

Based on fluid responsiveness indicator seen from diastole blood pressure value from 30 respondents got four responsive respondents while 26 respondents said not responsive. The physiological effects of the fluid bolus in 127 patients (the majority of sepsis patients) mentioned only 23\% of fluid responsive patients\textsuperscript{11}. This may be due to its pathophysiology in sepsis patients, according to previous studies, found in diastolic dysfunction, referring to abnormal left ventricular distensibility, which is common in patients with septic shock. Also, patients with diastolic dysfunction also responded to fluid loading very poorly demonstrated by the late increase in ventricular diastolic volume.

The effect of PLR testing on MAP monitoring value

The result of the research for the effect of PLR test on the MAP value obtained p-value before and after PLR 1 min is 0.000 (p-value <0,05) so that there is an increase in the MAP after intervention (mean 83.23 to mean 92.63). This means that PLR testing affects the value of MAP monitoring in septic patients.

PLR increases intravascular volume in the intrathoracic region which then increases cardiac preload and mean arterial pressure\textsuperscript{10}. The PLR test makes a change in hemodynamics (MAP) after PLR as a sign to predict fluid responsiveness in patients with hemodynamic status disorder\textsuperscript{5}. The PLR position by elevating the lower extremity as high as 45\textdegree transfers blood to the heart, thus increasing the cardiac preload by 15\% indicating that with increased cardiac output and preload, it increases hemodynamic (MAP)\textsuperscript{5}.

Based on it from 30 respondents got the results of 8 respondents said to be responsive while 22 respondents said not responsive. This result is in line with the results of the Wiedeman study 25 which mentions as many as 58\% of the fluid bolus given to shock patients, or poorly circulating urine output is ineffective, and there is only a small increase in the MAP. The hemodynamic effect of PLR in this study showed a significant increase in cardiac output, but it was still said to be unresponsive because the percentage increase was less than 10-15\%. This is because in sepsis the presence of vasoplegia causing loss of arterial tone and venodilation causes pressure changes in the compartment of blood vessels and changes in ventricular function thus reducing the volume of preload responsively. The influence of mediators also causes myocardial dysfunction resulting in decreased cardiac output causing maldistribution of blood volume resulting in tissue hypoperfusion and the occurrence of shock.

The effect of PLR test on Heart Rate monitoring value.

The result of the research for the effect of PLR test on HR got p-value before and after PLR 1 minute was 0.205 (p value< 0.05) so there was no influence of PLR test on HR in sepsis patient. Based on these results indicate that there was a slight increase in HR after the intervention (mean 103.23 to mean 105.63). This means that PLR testing has no significant effect on the value of HR monitoring in septic patients.

Heart rate changes (HR) have been used to reflect sympathetic tones, where variations in 5% hemodynamic data may be accepted as physiological variations in clinical practice. A large variation
in HR ± 5% arising from PLR may indicate the cancellation of PLR testing because HR changes ≥5% indicate sympathetic stimulation. The meta-analysis study found that the predicted value of pulse pressure changes to PLR can predict fluid response with an indicator of increased PP ranging from 9% - 12%.

The occurrence of less significant changes in pulse pressure is one of the PLR maneuvering capabilities that act as a test of preload responsiveness that affects changes in stroke volume increases and pulse pressure increases. From 30 respondents obtained 17 respondents who experienced an increase in percentage value, while 13 respondents experienced a decrease in percentage value. Physiologically, the effect of PLR on the pulse is the increase of stroke volume that can be seen from the increase of pulse pressure, the effect of PLR on the pulse in sepsis patient is decreased. This occurs because in sepsis patients vasodilatation is characterized by dilation of the arteries and veins simultaneously with myocardial dysfunction so that sepsis patients become less responsive to the fluid administration as a result of sepsis effects on venous capacity and myocardial dysfunction.

The effect of PLR test on monitoring value of Respiration Rate

The result of the research for the importance of PLR test on RR was obtained p-value for RR before and after PLR 1 min is 0.000 (p-value <0.05) so that there is the influence of PLR test to RR in sepsis patient. Based on these results indicate that there is a decrease in RR after intervention (mean 25.60 to mean 22.63). This means that there is an effect of PLR testing on RR monitoring in sepsis patients.

The results of this study are in line with research by Monnet mentioning that the variability of pulse pressure to predict fluid response is inversely related to respiratory system compliance, so it can be said that there is a decrease in oxygenated response during PLR, whereas studies of PLR effects on hemodynamic heart surgery patients found no statistically significant change in CO, MAP, SVR and tissue oxygenation.

Based on the percentage of the increase obtained from 30 respondents as much as 24 respondents who experienced percentage decrease respiration while four respondents experienced an increase and two respiration respondents remain. Blood volume plays an important role in hemodynamic stability that determines oxygen supplied by the tissues. Physiologically, the variation of stroke contents is caused by the corresponding heart and lung relationships in the respiratory cycle. Stroke variation will increase during inspiration and when expiration decreases stroke content. PLR techniques can increase the initial heart burden that will increase the stroke content to allow for changes in respiratory variation, but what is found in severe sepsis and septic sepsis patients is characteristically oxygenated. This is due to the clinical manifestations of pulmonary dysfunction that cause increased alveolar permeability characterized by the destruction of endothelial cells and the destruction of pneumonocyte alveoli cells leading to pulmonary vascular retention.

The effect of the PLR test on the value of SpO2.

The result of the research for the influence of PLR test on SpO2 got p-value for SpO2 before and during PLR 1 min is 0.707 (p value> 0.05), so there is no effect of PLR test on SpO2 in sepsis patient. While based on statistical results indicate that there is an increase of not too great value on SpO2 after intervention (mean 97.57 to mean 98.17). This means there is no great influence of PLR testing on SpO2 monitoring values in septic patients.

These results were consistent with a study of the incidence of hypotension at two μg / kg intravenous induction at the supine position with treatment and without limb elevation treatment, no statistically significant difference in SpO2 values was found in the (P> 0.05) group. Research on the respondents (subjects with increments> 10% CO) Anniversary changes to increase CO, SV and pulse pressure while heart rate, systemic vascular resistance, and MAP decreased. Also, microvascular flow index and concentration of SpO2, microvascular oxygen and concentration also increased after PLR.

Based on the results of research that has been done most of the respondents have increased the value of SpO2 but not too much difference. Changes in position when PLR makes the rate of
transport oxygen in the blood to the tissue and the speed of oxygen consumption by the tissue. Also, oxygen saturation value is also influenced by other factors such as hemoglobin, tidal volume and pathological conditions such as lung disease. The characteristic marks in septic patients and septic shock are peripheral oxygen extraction disorders. This is due to decreased peripheral blood flow so that the ability to increase peripheral oxygen extraction is disrupted, resulting in the development of oxygen from microcirculation is reduced. This damage is believed to cause oxygen disturbance. The decrease in oxygen concentration is also due to an increase in pulmonary vascular resistance which results in gradient insufficiency for oxygen perfusion resulting in causing cell hypoxemia and suppressing oxygen concentrations in the body.

CONCLUSION
Based on the study, it can be concluded that: The average age of respondents is mostly in the category of elderly, female respondents are more female than male. There was a significant effect on the mean value of blood pressure monitoring before and after the PLR test. There was a significant effect on the mean of MAP monitoring before and after the PLR test. There was no significant effect on mean pulse monitoring before and after PLR testing. There was a significant influence on the mean respiratory monitoring score before and after the PLR test. There was no significant effect on the mean value of SpO2 monitoring before and after the PLR test. It can be concluded that there is the influence of PLR test on noninvasive hemodynamic monitoring value in sepsis patient in ICU hospital room Ulin Hospital.

SUGGESTION
It is expected that the results of this study be the subject of study, and reconcile in the PLR test as one of the independent nursing interventions on the management of sepsis patients. For nursing service managers PLR test can be used as standard operating procedures in nursing care in sepsis patients. For the development of nursing research, it is advisable for the next researcher to be able to conduct further research that is the relationship between the value of stroke volume / cardiac output with noninvasive hemodynamic monitoring value before and after the PLR test.

REFERENCE


