



STIKep PPNI Jawa Barat, Bandung - INDONESIA
National Cheng Kung University Hospital - TAIWAN
Bandung, 16th – 17th 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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This book published by:

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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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THE EFFECTIVENESS OF BALANCE EXERCISE ON REDUCING RISK OF FALL IN OLDER PEOPLE

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ABSTRACT

Background: The risk of fall in the elderly can be treated by improving the balance of the body and muscle strength of the lower extremities. Balance exercise includes plantar, hip and knee flexion, hip extension and side leg raise. **Objectives:** This study aimed to determine the effect of balance exercise to reduce the risk of fall in older people. **Methods:** This study was conducted using quasi experimental design with one group pre-post-test. The total sample included in this study was 17 participant that selected using total sampling techniques based on the inclusion and exclusion criteria. Data were analyzed using student t-test. **Results:** The study found a significant effect of balance exercise to reduce the risk of fall in older people ($p=0.000$). Mean different for risk of fall before and after the intervention was 42.53 and 50.06, respectively. **Conclusions:** Balance exercise can reduce the risk of fall among older people. This intervention can be applied by a nurse or social worker in a nursing home to prevent fall in older people.

Keywords: balance, exercise, fall, older, intervention

INTRODUCTION

The incident of injuries due to falls was increasing in older people. Previous study reported that the incident of falls in nursing home was 2 to 3 times higher than older people lived in the community (about 1.7 times per bed per year), and 10-25% of falls in the nursing home was lead to fractures, lacerations, or require further treatment at the hospital (Sihombing, 2011). Approximately 30-73% of elderly who experienced fall tend to be had re-occurrence. Re-occurrence of fall was a primary reason for elderly dependency to the environment (Josephson, 2006). The occurrence of fall may due to several factors, including 31% due to accident (unfriendly environment), 17% of walking or imbalance 13% of dizziness or vertigo, 10% of heart attack, 4% of confusion or cognitive problems, 3% of hypotension, 3% of vision, and 18% due to unknown reason (Sizewise rentals, 2007). An observational, analytical study conducted in Semarang found a significant relationship between balance and frequency of fall in the elderly (Farabi, 2007).

The balance of the body can be improved by doing regular exercise, and it's also can minimize physical problems. Indonesian Ministry of Health (2016) recommends for healthy elderly actively and productively by doing light physical activity for 30 minutes a day, or doing elderly gymnastics regularly (Infodatin, 2016). The exercise is done gradually, adjusted to the ability of the elderly (Siburian, 2006). One of the recommended types of exercise to improve postural elderly balance was balanced exercise (Ceranski, 2006). Uncontrolled postural balance in the elderly would increase the risk of falls (Siburian, 2006). Exercise balance involves several movements, including plantar flexion, hip flexion, hip extension, knee flexion, and side leg raise. These movements considered could increase muscle strength in the lower limbs (Glenn, 2007).

Balance exercise is a physical activity performed to improve the stability of the body by increasing the muscle strength of lower limbs (Nyman, 2007). Balance exercise could lead to muscle

contraction, and increased muscle fibers (hypertrophy), which is at the end would increase component of the phosphagen metabolism system, including ATP and phosphocreatine. By increasing muscle strength, it would help elderly stronger in supporting the body and move, and therefore the risk of fall can be minimized (Kusnanto et al., 2007).

Several studies have been conducted to test the effect of balance exercise on the risk of fall. For example, Astriyana (2012) conducted balance exercises including plantar flexion, hip flexion, hip extension, knee flexion, side leg raise, Cawthorne's head exercise (eye exercise, eye-ear exercise, head exercises). The previous study also reported that a regular balance exercise could help older people independent and reduce disability due to fall down (Glenn, 2007). According to American College of Sports Medicine stated that exercises with two time a week for three weeks could increase muscle strength and improved postural balance in elderly. Therefore, the purpose of this study was to test the effectiveness of balance exercise on reducing the risk of fall among older people.

METHODS

This study conducted using a queasy experimental design in one group with pretest and posttest. The total sample included in this study was 17 respondent. The inclusion criteria were older people lived in the nursing home, agreed to join in this study, able to walk independently, criteria for risk of fall moderate to low, full consciousness, and stable vital sign.

The intervention of balance exercise was provided to older people for two times a week, six times for each section. This intervention was designed based on standard operational procedure and observation sheet. Risk of fall was measured using Berg Balance Scale (BBS) as the most effective measure tool for fall and balance disorders and has been validated several times (Neuls et al., 2011).

Data were analysis using univariate analysis to describe variable interest. The normality of data was evaluated using Shapiro Wilk because of the number of respondents less than 50. The result of normality test of showed the p-value was 1.000, which mean data was normally distributed. To test the effect of balance exercise on risk of fall was used a paired t-test.

RESULTS

Risk of fall among older people in the nursing home, Bandung (n=17)

Table 1 summarizes the distribution of fall risk in older people before and after the intervention. Before the intervention, more than half of participant had a low risk of fall, and none of them had a high risk of fall. After intervention, 100% of older people in this study had a low risk of fall.

Table 1. The proportion of fall risk among older people before and after intervention (n=17)

Fall risk	Before intervention		After intervention	
	n	%	n	%
Low (41-56)	9	52.9	17	100
Moderate (21-40)	8	47.1	0	0
High (0-20)	0	0	0	0

The effect of balance exercise on risk of fall

Table 2 shows the item of Berg Balance Scale (BBS) task before and after balance exercise. The highest mean difference was found in task 2 ($\Delta=1.12$), and the lowest was in task 12, 13, and 14 ($\Delta=0.006$). Further analysis was conducted to test the effect of balance exercise on the risk of fall (Table 3). The results showed a significant increased the BBS score, which means reduce the risk of fall from 42.53 to 50.05 ($p<0.001$).

Table 2. Analysis of Berg Balance Scale (BBS) before and after balance exercise (n=17)

Items task of BBS	Mean		Mean different
	Before balance exercise	After Balance exercise	
Task 1	3.41	3.71	0.30
Task 2	2.47	3.59	1.12
Task 3	3.29	3.88	0.59
Task 4	3.47	4.00	0.71
Task 5	3.41	3.88	0.47
Task 6	3.59	3.94	0.35
Task 7	2.76	3.71	0.95
Task 8	2.76	3.29	0.53
Task 9	3.18	3.94	0.76
Task 10	3.59	3.94	0.35
Task 11	3.00	3.71	0.71
Task 12	3.65	3.71	0.06
Task 13	2.59	2.65	0.06
Task 14	1.59	2.19	0.06

Table 3. The effect of balance exercise on risk of fall among older people (n=17)

Variable	Balance Exercise	Mean	Min- Max	p
Risk of fall	Before	42.53	28 -56	0.000
	After	50.06	41- 56	

DISCUSSION

The univariate analysis showed that majority of respondent had a low and moderate risk of fall before intervention and after the intervention, all respondent only had a low risk of fall. There was increase mean of 14 items of BBS assessment after balance exercise intervention.

Furthermore, a significance increased score of BBS was found after balance exercise intervention, which means that the risk of fall was decline significantly.

The risk of fall in the elderly at a nursing home may be influenced by balance and coordination problems. Pujiastuti (2003) emphasized that older people had decreased coordination and ability in performing daily activities. Impaired balance and gait and muscles weakness in lower extremities can cause falls in the elderly (Shobha, 2005). It was reinforced by the opinion of Noohu et al., (2014) that balance disorder is a condition when one feels unstable and may result in increased risk of fall. Other studies have also stated that the incidence of fall will increase if the balance and coordination of the body are disrupted and not accompanied by physical exercise (Barnet, et, al., 2003).

The highest mean difference of task in BBS was task number 2 (Stand without help), and the lowest was task 12 (placing the legs on a step bench), task 13 (standing with one foot in front), and task 14 (stand with one leg). The difference of this results may influence by other physical activity factors such as elderly gymnastics at a nursing home which is routinely done twice a week so that more BBS assessment items improved. Another study conducted by Ballard, et al., (2004) reported that balance exercise was administered without any physical activity or controlled exercise routine. The results of this study were confirmed by Perrin et al. (1999) who mentioned that the elderly who have sports activities would have a better postural balance control. According to Skelton (2001) physical activity had a positive effect on body balance or falling risk factors, which improves balance, functional ability, mobility, strength and power, coordination and gait, decreases depression, and fear of falling.

The results of this study prove that balance exercise can improve the balance and strength of lower extremity and muscle, thus reduce the risk of falling in the elderly. This results of this study were supported by Colon (2002) emphasized that balance exercise is one type of physical activity that can be performed easily and simple by older people for strengthening both lower extremities. It was

also by Stanley and Beare (1999) which stated that the advantages of exercise programs in the elderly, especially on musculoskeletalnya system was to increase muscle strength, ROM (Range of Motion), flexibility, bone density, and balance. According to Skelton (2001), physical activity had a positive effect on body balance or falling risk factors, which improves balance, functional ability, mobility, strength and power, coordination and gait and decreases depression and fear of falling.

Several studies have also stated that physical activity can be an effective intervention to prevent fall as well improve balance and coordination (Chang et al., 2004). According to Dewy (2013), balance exercise needs is important for older people to maintain balance and prevent fall. Madureira (2006) revealed that balance exercises were very effective for improving functional and static balance and mobility of the elderly. This balance exercise will also decrease the frequency of fall in the elderly.

CONCLUSION

In conclusion, this study found that balance exercise was significantly effective to reduce the risk of fall and increased the score of BBS. Nurse and social worker may apply balance exercise routinely in a nursing home. A future study using a rigor method with large sample size is needed to provide stronger evidence.

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