effectiveness-of-training-the-laser-distance-meter-use-and-microtoise-of-knowledge-and-skills-public-health-centers-nutrition-of-public-health-centers-in-paser-district-east-kalimantan-province-2

by

Submission date: 20-Apr-2023 12:28PM (UTC+0700)
Submission ID: 2070070079
File name: -health-centers-in-paser-district-east-kalimantan-province-2.pdf (327.45K)
Word count: 3776
Character count: 19878

Scientific Journal Impact Factor (SJIF): 5.278
International Journal of Modern Trends in Engineering and Research
IJMTER
ISSN (ONLINE) : 2349 - 9745
ISSN (PRINT) : 2393 - 8161

EFFECTIVENESS OF TRAINING THE LASER DISTANCE METER USE AND MICROTOISE OF KNOWLEDGE AND SKILLS PUBLIC HEALTH CENTERS NUTRITION OF PUBLIC HEALTH CENTERS IN PASER DISTRICT EAST KALIMANTAN PROVINCE

Nurulita[1], Roselina Panghiyangani[2], Meitria Syahadatina Noor[2], Husaini[1], Lenie Marlinae[3]

[1]*Master of Public Health Study Program, Faculty Of Medicine, Lambung Mangkurat University*
[2]*Faculty Of Medicine, Lambung Mangkurat University*
[3]*Public Health Study Program, Faculty of Medicine, Lambung Mangkurat University*

Abstract - One of the nutrition problems of toddlers in Indonesia is stunting. In 2017 at Paser Regency, East Kalimantan Province, 31.8% of children were stunted. Diagnosis of stunting in children aged> 2 years with height measurements using microtoise, in the implementation in the field need complementary tools to help measure height with the same level of accuracy. Training of nutrition workers on height measurements of children aged> 2 years was carried out using microtoise devices and laser distance meters. This research is a quasi-experimental study using one group pre and post test design. The population in this study were 19 nutrition managers managing the Public Health Centers Nutrition Program in Paser Regency. The sample is determined by the formula n = N - 1. The research instrument is in the form of a questionnaire and checklist. Descriptive and statistical data analysis uses dependent t test. Dependent t test results there are differences in knowledge about the laser distance meter before and after the first training (p = 0,000), and the second training (p = 0,000). There were differences in skills using the laser distance meter before and after the first training (p = 0,000), and the second training (p = 0,000). There was a difference in knowledge about microtoise tools before and after the first training (p = 0,000), and the second training (p = 0,000). There were differences in skills using microtoise tools before and after the first training (p = 0,000), and the second training (p = 0,000).

Key words: stunting, training, knowledge, skills, laser distance meter, microtoise

*Correspondent Author:*Nurulita*

I. INTRODUCTION

Stunting is a condition of failure to thrive in children under five due to chronic malnutrition, especially in the First 1,000 Days of Life (HPK) (Indonesian Ministry of Health, 2013). Children are classified as stunting if the length or height according to their age is lower than the anthropometric standards that refer to WHO Standards, 2005. Stunting toddlers in East Kalimantan have increased each year, from 26.7 percent in 2015 to 27.1 percent in 2016, and again rose to 30.6 percent in 2017. Of the 10 districts/cities in East Kalimantan, Paser Regency is in the fourth highest position with a stunting rate of 31.8 percent (Department of Health, East Kalimantan Province, 2018).

The diagnosis of stunting is made by measuring the height/length of a toddler's body, the results are compared with the height/length standard according to the child's age. To measure the height of children aged> 2 years is by standing using microtoise, according to anthropometric guidelines for assessing the nutritional status of children as stipulated in the Decree of the Minister of Health of the Republic of Indonesia No. 1995/MENKES/SK/XII/2010. While problems with height measurement were found using microtoise; including the need for walls that are erect, flat floors and require precision to ensure the

starting point of measurement at a height of 200 cm, which makes measurements with this method difficult to guarantee validity in the field and is less effective when used for research data collection in the field (Sulistyawati, 2019), so the need for complementary tools as a complement to help the measurement of certain conditions with the same level of accuracy. One measure that can be used is a laser distance meter.

Training on procedures for using laser distance meter and microtoise tools to measure the height of children under five years old to nutrition workers was carried out to increase the capacity of officers, so that the knowledge and skills of nutrition workers in using laser distance meter and microtoise instruments increased, as seen from the results of the pretest assessment and posttest during training. Knowledge and skills acquired during training must be evaluated using written tests and observations.

Training is a series of individual activities in systematically increasing expertise and knowledge so as to be able to have professional performance in their fields. Training is a learning process that allows employees to carry out work that is now in accordance with standards. Knowledge is everything that is known for learning science, experiencing, seeing and hearing. Skills are the ability to carry out tasks / work using limbs and available work equipment.

Microtoise is a height measurement tool for children aged ≥ 2 years done in a standing position. The level of accuracy of microtoise is 0.1 cm. Laser distance meter is a tool that serves to measure a certain distance using a laser that is only by directing the laser to the distance limit you want to measure, this tool can show quickly the results of measuring distance from one object to another.

II. MATERIAL AND METHODS

This study uses a one group pre and posttest design, including intervention research that provides training to see the knowledge and skills of nutrition workers in using laser distance meter and microtoise, this research design model can be described as follows:

Measurement 0 pretest	→	Treatment 1	→	Measurement posttest 1	→	Treatment 2	→	Measurement posttest 2
O1		$X1_1$		O2		$X1_2$		O3
O4		$X2_1$		O5		$X2_2$		O6

Information :

$X1_1$: Initial laser distance meter training after pretest measurements of knowledge and skills without training.
$X1_2$: The second laser distance meter training after measurement of posttest knowledge and skills 1.
$X2_1$: Initial microtoise training after pretest measurements of knowledge and skills without training.
$X2_2$: Second microtoise training after measurement of posttest knowledge and skills 1.
O1 : Measurement of knowledge and skills before being given laser distance meter training.
O2 : Measurement of knowledge and skills after being given the first laser distance meter training.
O3 : Measurement of knowledge and skills after being given the second laser distance meter training.
O4 : Measurement of knowledge and skills before microtoise training is given.
O5 : Measurement of knowledge and skills after giving the first microtoise training.
O6 : Measurement of knowledge and skills after the second microtoise training was given.

The study population was 19 Nutrition Program Managers in all health centers in Paser Regency. Samples were taken as many as 18 nutrition workers according to the formula n = N - 1. The independent variable in this study was training using a laser distance meter and microtoise, the dependent variable was knowledge and skills using a laser distance meter and microtoise.

The training was carried out simultaneously for 18 nutrition workers. Researchers as instructors in the use of laser distance meter tools and instructors in using microtoise by nutritionists managing the Paser District Health Office Nutrition Program. Before being given training, participants were asked to fill out questionnaires about the use of laser distance meter and microtoise tools and practice how to use

laser distance meters and microtoise which were observed using checklists. This data is used as a pretest data. Furthermore, training is provided on the use of laser distance meters and microtoise and teaches how to use laser distance meter and microtoise devices. After the training is completed, then give the same questionnaire as the pretest and ask participants to practice using a laser distance meter and microtoise. This data is taken as posttest data. The training was repeated 5 days later with the same steps as the first training. Then the data are analyzed and conclusions are made.

III. RESULT AND DISCUSSION

1. Univariate Analysis

Table 1. Distribution and Frequency of Respondent Characteristics

Characteristic	Frequency	Percentage
Age		
< 30 years old	5	27,8
30-40 years old	8	44,4
40-50 years old	4	22,2
> 50 years old	1	5,6
Gender		
Male	3	16,7
Female	15	83,3
Education		
Diploma in Nutrition	16	88,9
Bachelor of Nutrition	2	11,1
Years of Service		
1-5 years	9	50,0
6-10 years	4	22,2
11-15 years	1	5,6
16-20 years	2	11,1
21-25 years	1	5,6
26-30 years	1	5,6
Total	18	100,0

Source: Primary Data Research Results

Based on the above table it can be seen that the majority of respondents are 30-40 years old (44.4%), female sex (83.3%), D3 level of Nutrition education (88.9%) with tenure between 1-5 years (50%).

The normality test in this study uses the Shapiro Wilk test because the number of research subjects is <50, while the normality test results are presented in the table 2:

Table2.Normality Test of Knowledge and Skill Data

Pengukuran		Significant Value	α	Result
LDM Knowledge	Pre	0,133	0,05	Normal
	After 1st training	0,178		Normal
	After the second training	0,110		Normal
Microtoise Knowledge	Pre	0,035	0,05	Unnormal
	After 1st training	0,048		Unnormal
	After the second training	0,000		Unnormal
LDM Skills	Pre	0,213	0,05	Normal
	After 1st training	0,069		Normal
	After the second training	0,068		Normal
Microtoise Skills	Pre	0,400	0,05	Normal
	After 1st training	0,524		Normal

Pengukuran		Significant Value	α	Result
	After the second training	0,066		Normal

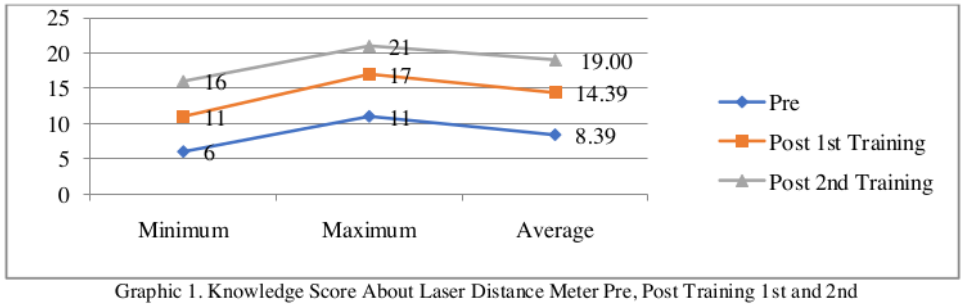
Based on the above data it can be seen that the significant value of knowledge scores about laser distance meter pre and post training all data are normally distributed because they have a significant value> α 0.05, but for knowledge data about microtoise all pre and post test data data are not normally distributed because significant value <α 0.05. For both laser distance meter and microtoise skills pre and post training all data are normally distributed because they have a significant value> α 0.05 so that it can be concluded that some of the data are continued or analyzed by dependent t test which is for differences in knowledge before and after training with laser distance meter , skills before and after training with a laser distance meter and skills before and after training with microtoise. While knowledge data before and after training with microtoise were analyzed using the Wilcoxon test.

Table 3. Knowledge Score About Laser Distance Meter Before and After Training

Knowledge	Min	Max	SD	Average
Pre Training	6	11	1.685	8.39
Post 1st Training	11	17	1.720	14.39
Post 2nd Training	16	21	1.609	19.00

Information :Minimum = Lower Score ; Maximum = Upper Score' SD = Standard Deviation

In table 3 above, it can be seen that before training is given a minimum knowledge score of 6 and a maximum of 11, the standard deviation is 1,685 with an average value of 8.39. after that training was given about laser distance meters and the knowledge score increased where the minimum value was 11 and the maximum score was 17, the standard deviation value was 1,720 with an average value of 14.39. after that the training is conducted again and the value of the knowledge score increases where the minimum value becomes 16 and a maximum of 21, the standard deviation value is 1,609 with an average value of 19.00.



Graphic 1. Knowledge Score About Laser Distance Meter Pre, Post Training 1st and 2nd

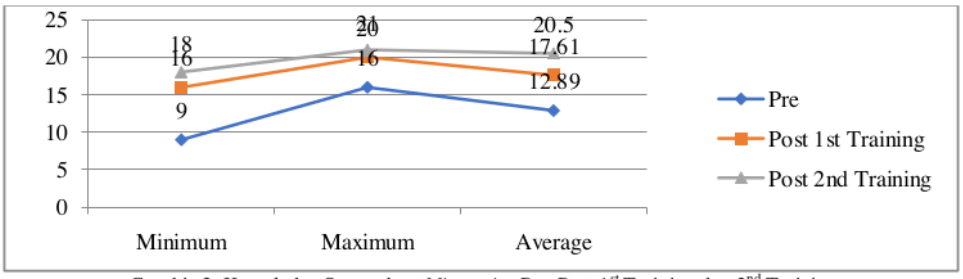
Table 4.Knowledge Score About Microtoise Before and After Training

Knowledge	Min	Max	SD	Average
Pre Training	9	16	2.298	12.89
Post 1st Training	16	20	1.290	17.61
Post 2nd Training	18	21	0.985	20.44

Information :Minimum = Lower Score ; Maximum = Upper Score' SD = Standard Deviation

In table 4. above, it can be seen that before training is given a minimum knowledge score of 9 and a maximum of 16, the standard deviation value is 2,298 with an average value of 12.89. after that training in miocrotoise was given and the knowledge score increased where the minimum value was 16 and the maximum score was 20, the standard deviation was 1,290 with an average value of 17.61. after that the

training is conducted again and the value of the knowledge score increases where the minimum value becomes 18 and the maximum is 21, the standard deviation value is 0.985 with an average value of 20.44.



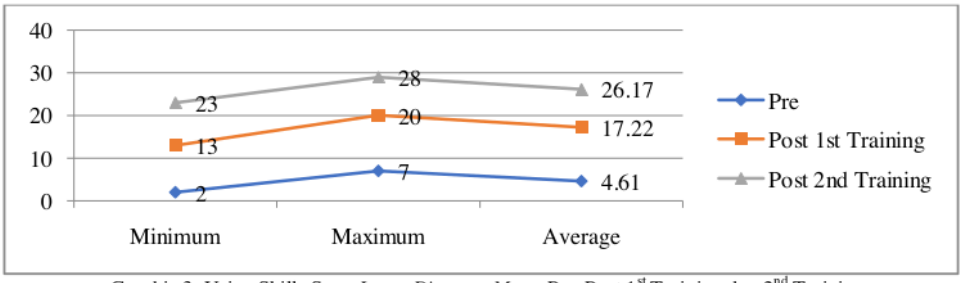
Graphic 2. Knowledge Score about*Microtoise* Pre, Post 1st Training dan 2nd Training

Table5. Skill Scores Using Laser Distance Meter Before and After Training

Skills	Min	Max	SD	Average
Pre Training	2	7	1.378	4.61
Post 1st Training	13	20	2.415	17.22
Post 2nd Training	23	28	1.543	26.17

Information :Minimum = Lower Score ; Maximum = Upper Score' SD = Standard Deviation

In table 5 above, it can be seen that before training is given a minimum skill score of 2 and a maximum of 7, the standard deviation is 1,378 with an average value of 4.61. after that training was given about laser distance meter and the skills score increased where the minimum value was 13 and the maximum score was 20, the standard deviation value was 2,415 with an average value of 17.22. after that the training is conducted again and the value of the skills score increases where the minimum value becomes 23 and the maximum 28, the standard deviation value is 1.543 with an average value of 26.17.



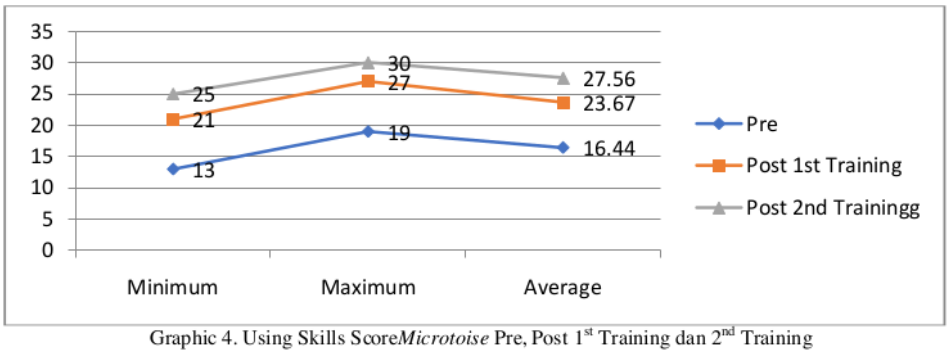
Graphic 3. Using Skills Score*Laser Distance Meter* Pre, Post 1st Training dan 2nd Training

Table6.Skill Scores Using Microtoise Before and After Training

Skills	Min	Max	SD	Average
Pre Training	13	19	1.542	16.44
Post 1st Training	21	27	1.680	23.67
Post 2nd Training	25	30	1.723	27.56

Information :Minimum = Lower Score ; Maximum = Upper Score' SD = Standard Deviation

In table 6 above it can be seen that before training is given a minimum skill score of 13 and a maximum of 19, the standard deviation value is 1.542 with an average value of 16.44. after that training on microtoise and skills scores were increased where the minimum score was 21 and the maximum score was 27, the standard deviation was 1,680 with an average score of 23.67. after that the training is conducted again and the value of the skills score increases where the minimum value becomes 25 and the maximum 30, the standard deviation value is 1.723 with an average value of 27.56.



Graphic 4. Using Skills Score*Microtoise* Pre, Post 1st Training dan 2nd Training

2. Bivarite Analysis

Table7.Results of Analysis of Differences in Knowledge and Skills Before and After Laser Distance Meter Training

Knowledge	N	Mean Defference	t	P value
Pre and post in 1st training	18	-6,000	-20,584*	0,000
Post 1and post 2nd training	18	-4.611	-11.376*	0,000
Skills				
Pre and post in 1st training	18	-12,611	-17,317*	0,000
Post 1and post 2nd training	18	-8,944	-15.421*	0,000

Information :N = Number of Samples ; Men Difference = average difference (pre and post *P*(value)) = Value correlation; *= Significant ; **=Not Significant

In table 7 above it can be seen that there is a difference in knowledge before training and after the first training (p value 0,000), and the knowledge score after being given training is significantly different from knowledge after being given the second training (p value 0,000). There was a difference in skills before training and after the first training (p value 0,000), and the skills scores after being given training were significantly different from skills after the second training (p value 0,000).

Table8.Results of Analysis of Differences in Knowledge and Skills Before and After Microtoise Training

Knowledge	N	Mean Difference	z	P value
Pre and post in 1st training	18	-	-3.755	0,000
Post 1and post 2nd training	18	-	-3.787	0,000
Skills			t	
Pre and post in 1st training	18	-9,167	-16.495	0,000
Post 1and post 2nd training	18	-3,889	-12.907	0,000

Information :N = Number of Samples ; Men Difference = average difference (pre and post *P*(value)) = Value correlation; *= Significant ; **=Not Significant

In table 8 above it can be seen that there is a difference in knowledge before training and after the first training (p value 0,000), and the knowledge score after being given training is significantly different from knowledge after being given the second training (p value 0,000). There was a difference in skills before training and after the first training (p value 0,000), and the skills scores after being given training were significantly different from skills after the second training (p value 0,000).

IV. CONCLUSION

There are differences in the knowledge of nutrition workers before and after being given training using a laser distance meter, there are differences in knowledge of nutrition workers before and after being given training using microtoise tools, there are differences in the skills of nutrition workers before and after being given training using a laser distance meter, there are differences in the skills of officers nutrition before and after being given training using microtoise tools in Paser Regency.

V. RECOMMENDATION

For the Health Service: Can improve the competency of health workers through education or training, especially nutrition workers and includeIntegrated Healthcare Centercadres to take antopometry measurements and detect stunting events in infants. The Health Department can apply the use of a laser distance meter as a tool to measure height or length, especially toddlers, in measuring nutritional status of toddlers.

For nutrition workers: Always improve the knowledge and skills of using height measuring devices for toddlers, increase the knowledge and skills of officers in using microtoise tools and laser distance meters and evaluate the measurement activities in the field, especially by midwives and cadres and provide alternative measuring devices that can help with calculations more accurate.

REFERENCES

[1] AIPGI (2016) *Ilmu Gizi: Teori dan Aplikasi*. 1st edn. Edited by Hardinsyah and I. D. N. Supariasa. Jakarta. EGC.
[2] Azwar,A. (2008) *Pengantar Adnministrasi Kesehatan*. Binarupa Aksara. Tangerang.
[3] Bangun, W. (2012). *Manajemen Sumber Daya Manusia*. Jakarta: Erlangga
[4] Bappenas RI.(2018)*Rencana Aksi Nasional Dalam Rangka Penurunan Stunting Rembuk Stunting*. Jakarta.
[5] Charismi, A., Djudi, M., Ruhana, I. (2016). Analisis Efektivitas Pelatihan (Studi Pada Unit Pengembangan Karir Dan Kewirausahaan Universitas Brawijaya Malang)*Jurnal Administrasi Bisnis* (JAB). 38(2)
[6] Dinas Kesehatan Kabupaten Paser. (2019)*Data Balita Stunting Intervensi Penurunan Stunting Terintegrasi*
[7] Dinas Kesehatan Provinsi Kalimantan Timur. (2019)*Profil Kesehatan Provinsi Kalimantan Timur Tahun2018*.
[8] Depkes RI. (2013)*Buku Kesehatan Ibu dan Anak - Gerakan Pemantauan Tumbuh Kembang Anak*. Jakarta: Depkes RI.
[9] Fatmah.(2012) Peningkatan Pengetahuan dan Keterampilan Kader Posbindu dalam Pengukuran Tinggi Badan Prediksi Lansia, Penyuluhan Gizi Seimbang dan Hipertensi Studi di Kecamatan Grogol Petamburan, Jakarta Barat. *Media Medika Indonesiana*; 46(1); Tahun 2012
[10] Fuji Fitriani. (2017). Alat Ukur Tinggi dan Berat Badan Untuk Menentukan Status Gizi Anak Berbasis Arduino, *Jurnal Publikasi*, diakses : 25 November 2019.
[11] Gibney MJ., Margetts B.M eds. (2008) *Gizi Kesehatan Masyarakat*. Penerbit Buku Kedokteran EGC pp. 325-47. Jakarta.
[12] Ghosh, P., Joshi, J.P., Mukherjee, U., Ranjan, R. & Satyawadi, R. (2011). Evaluating effectiveness of a training programme with trainee reaction. *Journal Industrial and Commercial Training;* 43(4); 247-255.
[13] Handayani, S.T. (2015) Perbandingan Indeks Antropometri TB/U Anak saat Usia 48-59 Bulan dengan Usia 6-7 Tahun serta Faktor-Faktor yang Mempengaruhinya di Wilayah Kerja Puskesmas Nanggalo Kota Padang. Universitas Andalas.

[14] Hanum Marimbi. (2010) *Tumbuh Kembang, Status Gizi & Imunisasi Dasar Pada Balita*. Nuha Medika. Yogyakarta.
[15] Hastono. (2017) *Analisa Data*. FKUI. Universitas Indonesia. Jakarta.
[16] InggitDwi Lestari. (2017)Modifikasi penggunaan *Laser distance meter* untuk mengukur hasil Lompat Jauh dan Lompat Jangkit, *OPAC Journal* Universitas Negeri Yogyakarta
[17] Kementerian Kesehatan Republik Indonesia. (2010) Keputusan Menteri Kesehatan RI. Nomor : 1995/Menkes/SK/XII/2010 Tentang Standar Antropometri Penilaian Status Gizi Anak.
[18] Kementerian Kesehatan Republik Indonesia.(2019) *Hasil Utama Riset Kesehatan Dasar Tahun 2018*. Kementerian Kesehatan Badan Penelitian dan Pengembangan Kesehatan.Jakarta.
[19] Kementerian PPN/Bapenas. (2018)*Pedoman Pelaksanaan Intervensi Penurunan Stunting Terintegrasi di Kabupaten/Kota*. Jakarta.
[20] Kementerian Sosial Republik Indonesia. (2015) *1000 Hari Pertama Kehidupan Penentu Ribuan Hari Berikutnya*. Tangerang Selatan: Wahana Visi Indonesia
[21] Notoadmojo, S. (2012) *Pendidikan, dan Perilaku Kesehatan*. Jakarta: PT Asdi Mahasatya
[22] Noviati Fuada (2014) Kemampuan Kader Posyandu dalam Melakukan Pengukuran Panjang/ Tinggi Badan Balita, Jurnal *Ekologi Kesehatan* Vol. 13 No 3. September 2014 : 229-239.
[23] Simamora, Henry. (2006). *Manajemen Sumber Daya Manusia* (ed. ketiga). Yogyakarta: STIE YKPN
[24] Sukiarko, E. (2007) Pengaruh Pelatihan dengan Metode Belajar Berdasarkan Masalah dalamKegiatan Kader Gizi Dalam Kegiatan Posyandu : Studi di Kecamatan Tempuran Kabupaten Magelang
[25] Sulistiadi dan Pitoyo. (2018) *Alat Ukur dan Instrumen Ukur*. Staf Perekayasa pada BBP Mektan, Serpong
[26] Siswantoyo.(2014) *Panduan Identifikasi Bakat Istimewa Olahraga*. Yogyakarta. Direktorat Pembinaan Pendidikan Khusus dan Layanan Khusus Diknas Kemendikbud RI
[27] Sulistyawati. (2019) Pengembangan Stadiometer sebagai Alat Ukur Tinggi Badan dan Tinggi Lutut.
[28] Sugiyono. (2013) *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta. Bandung.
[29] Widodo. (2015) *Manajemen Pengembangan Sumber Daya Manusia*. Yogyakarta: Pustaka Pelajar

effectiveness-of-training-the-laser-distance-meter-use-and-microtoise-of-knowledge-and-skills-public-health-centers-nutrition-of-public-health-centers-in-paser-district-east-kalimantan-province-2

ORIGINALITY REPORT

8%	5%	6%	6%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Institute of International Studies Student Paper	5%
2	"Abstracts of the Asian Congress of Nutrition 2019", Annals of Nutrition and Metabolism, 2019 Publication	2%
3	Submitted to Konsorsium Turnitin Relawan Jurnal Indonesia Student Paper	2%

Exclude quotes	On	Exclude matches	< 2%
Exclude bibliography	On		