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Developing the Integrated Health Service and Promotions Post for Non - Communicable Disease in Improving Cadres' Skill, Knowledge, and Attitude of Community

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Abstract
Background: *The existence of an integrated health service and promotions post called Posbindu for Non - Communicable Disease in Indonesia has been since 2005. But not all Posbindu achievement is not in line with the expectations.*
Objective: *This study aims to determine the effectiveness of development Posbindu in improving the knowledge and skills of cadres and the knowledge and attitudes of society in Leyangan Health Center, District of East Ungaran, Semarang regency, Indonesia.*
Methods: *The study design was a quasi non-randomized experiment with pre-post test group design. The number of samples was set on the base of compare means in two independent groups generating 31 cadres selected randomly for the control and the treatment group. The effectiveness of the training was measured by comparing the results before and after the subjects experienced the treatment and t-test was employed.*
Results: *There is a growing score of cadres' knowledge (p = 0.003) and skills (p = 0.000) after given the training. The mean knowledge score (p = 0.034) and attitudes (p = 0.010) increased after nutritional counseling given by volunteers.*
Conclusion: *The training is effective in improving the knowledge and skills of cadres and efficient in improving knowledge and attitudes. The need for monitoring and evaluation of Posbindu activities regularly is necessary to Achieve the target.*
Keywords: *NCD, Integrated Health Service, Promotion Post, Skills, Knowledge and Attitudes.*

Introduction

Some non-communicable disease control programs have been implemented by the Indonesian government through the Integrated Non-Communicable Disease Post or POSBINDU PTM RI 2003). The POSBINDU PTM has been applied in Semarang since 2011 started with the establishment of 2 POSBINDUs in Genuk Sub district of Ungaran Barat and Ngampin Village Ambarawa District. Then in 2013, it has been developed into 9 POSBINDUs. In the year 2016 was established at least 1 POSBINDU in every village in the region of Semarang regency. In fact, the implementation of POSBINDU has still

encountered various obstacles, particularly in the village and sub-district level. This is caused by 1) lack of understanding of executing officers and managers about the proper POSBINDU implementation, 2) lack of ability of officers in POSBINDU implementation especially in community development and empowerment, 3) the occurrence of things is not yet in accordance with expectations such as the less community participation and lack of the optimal means. Problems encountered in each region are not the same, so also with community participation in activities POSBINDU also vary widely. Factors that have a substantial contribution in supporting the success of POSBINDU activities are the role of health officers and cadres. Cadre's knowledge and skills are limited, especially about anthropometry and techniques providing nutritional counseling that is considered as the most difficult by cadres.

Leyangan Community Health Center has 1 Posbindu in Gedanganak village and will develop 4 POSBINDUs in 4 sub-districts of Beji, Leyangan, Sidomulyo, and Kalirejo. The form of training that has been done by the Department of Health is limited to lectures, so the cadres have not gained practical skills, especially in performing anthropometric measurements and providing counseling techniques. To date, the effectiveness of the training has never been evaluated. Understanding the complex problems encountered in the field, the researchers want to participate by contributing knowledge and skills in overcoming the above obstacles through the development of POSBINDU PTM in improving cadre expertise and experience as well as the attitude of the community. The form of research is to build a new POSBINDU by providing technical training in developing knowledge and skills of POSBINDU cadres on nutrition and anthropometry. The purpose of this study is to determine the effectiveness of training in the development of POSBINDU to increase knowledge and skills of staffs as well as the attitude of the community

Method

This study is a field of community nutrition program with an experimental quasi-design with a non randomized control groupof pre and post test design aiming to see the effectiveness of training on nutrition knowledge and cadre skills in nutritional anthropometry. The knowledge and expertise of the staffs observed before and after being trained in the form of pre and post test are described as follows:

$$O_1 \xrightarrow{\quad (X) \quad} O_2$$
$$O_3 \xrightarrow{\quad (-) \quad} O_4$$
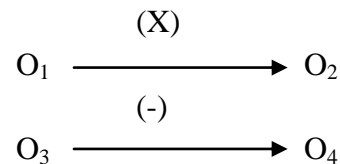
Where:

X: Training of nutrition

O_1 = Knowledge and skill scores of the treatment group before the given training

O_2 = Knowledge, and ability scores of the treatment group after one month of the given training

O_3 = Knowledge and skill scores of the control group before the given training

O_4 = Knowledge and ability scores of the control group after one month of the given training

The location of research is Leyangan Health Community Services covering four sub-districts / villages namely Kalirejo, Sidomulyo, Beji and Leyangan villages. The population is all cadres from 32 Posyandu (integrated service post) in 4 villages as many as 165 people. The cadres will be randomly selected with the criteria of willing to be forces and permanent residents. The forces are grouped into two, i.e., the treatment group and the control group. The treatment group is cadres from Leyangan and Kalirejo villages as many as 34 people, and the control group is cadres from the town of Sidomulyo and Beji of 32 people. The staffs are appointed by the local village midwife. The selection of treatment and control groups was determined randomly. The instruments used are structured questionnaires and checklist forms. The cadre knowledge data was collected by interview

method, and skill data is taken by direct observation at the time of the cadres performed. Each cadre conducts counseling to 1 POSBINDU participant. The cadre skills are seen based on anthropometry skill score obtained at the date of performance that includes how to measure body weight, height, knee height and counseling techniques. Univariate analysis is used to get the description of the frequency distribution and the proportion of cadre characteristics (age, last and old education to cadre) presented in tabular form. Bivariate analysis with paired t-test is used to identify the difference of average knowledge and

skill before and after training. Furthermore, an independent t-test was conducted to determine the difference in average knowledge and skills before and after training between the two groups.

Results

The number of trained cadres is 66 people consisting of treatment group 34 people and control group 32 people. Most of the cadres are housewives and only a few working. An overview of age, recent and old education of cadres are presented in the following table.

Table 1. Characteristics of cadres

Variable	Treatment Group		Control Group	
	(n=34)	(%)	(n=32)	(%)
Ages				
< 40 years	11	32.35	7	21.87
40-50 years	21	51.77	22	68.76
>50 years	2	5.88	3	9.37
Education				
Elementary	0	0	1	3.12
Secondary	2	5.88	5	15.62
Junior Highs	17	50.00	19	59.37
Degree	15	44.12	7	21.89
Cadre tenure				
< 5 years	1	2.94	10	31.25
5-10 years	29	85.30	17	53.13
>10 years	4	11.76	5	15.62

Table 1 shows the cadre's characteristics including age, recent education and period to become cadres. Most of the cadres age group is 40-50 years old with the last education of high school and length to be cadres between 5-10 years both in treatment group and control group. Independent t-test obtained p-value> 0,05. This condition shows that there is no difference of staff characteristics in both groups. This phenomenon means that the features of forces are the same both in the treatment group and the control group. All cadres have never received any training on POSBINDU. However, each village / in the Health Community Centers area has implemented 1 activity of an integrated health service for elder people. So it is likely the cadres have been already exposed to knowledge or information about health either

directly or indirectly from health workers and various media.

The results of this study are similar to Fatmah (2013) that the majority of the last education cadres are a high school with the service become cadres for 1-5 years.

Knowledge of cadres is vital in carrying out activities of Posbindu following the guidelines. To develop basic Posbidu into the main Posbindu requires knowledge of cadres in the discharge of activities. It is expected that cadres will master material about various risk factors for Non-Communicable Disease and dietary arrangement according to health examination result. The material that has been given during the training is Posbindu definitions/symptoms, causes of hypertension, hyperglycemia, hyper cholesterol,

hyperuremia, and obesity as well as diets for various risk factors. The differences of cadres' knowledge score at the time of pre-test and post-tests based on target group are presented in Table 2.

Table 2. Mean of Cadres' Knowledge Score

Groups	Pre test	Post test	p-value
Treatment	71.7±13.1	79.4±6.0	0.023
Control	75.2±7.3	76.3±7.1	0.892

The average score of the pre and post-test scores of both groups was high (score ≥ 70). There is a difference between staff experience with broad category either on pre-test or post-test. Increased knowledge is allegedly quite relevant to the majority of education cadres who graduated from high school and undergraduate. The cadre knowledge scores in the treatment group showed an increase of 8 points from 71.7 to 79.4. The result of paired t-test obtained value p = 0,003 (<0.05) so it can be concluded that nutrition training can improve cadres' knowledge scores. In the control group, there was no improvement in the average score of knowledge Which was relatively constant from 75.2 to 76.3 (p-value = 0.300). This means that in the control group did not increase significantly (p> 0.05). The average score of knowledge at pre-test was higher in the control group although no training provided before Posbindu establishment. Possibly, cadres in this group are often exposed to health and nutrition information from media or other sources that may affect cadre knowledge. The cadres in the control group have conducted integrated

health service activities for elderly, frequently exposed and repeatedly got counseling about nutrition and health.

The cadres' skills are seen in the performance of measuring height and weight. The average score of cadre skills by target group is shown in Table 3.

Table 3. Mean of Cadre Skills' Scores by group

Groups	Pre test	Post test	p-value
Treatment	43.6±16.6	87.8±7.5	0.000
Control	77.9±14.3	79.6±12.1	0.880

The measurement of cadre skills was done through pre-test and post-test after one month of Posbindu activity. In the treatment group, there was a significant increase in skills from 43.6 to 87.8. Paired t-Test p-value = 0.000 indicated a significant increase in cadre competencies (p <0.05). In the other hand, the staff skills in the control group did not show a significant increase (p = 0.880 or p> 0.05) after one month of activity from score 77.9 to 79.6. The cadres' skills in the control group included high at the beginning of operation up to 1 month after activity (score ≥70). Although not trained at the start of the movement, the cadres in the control group have conducted integrated health services activities for older people that are similar to Posbindu's activities. The presence of frequent and repeated health activities and information can improve the Posbindu cadre's skill retention. The primary ability of forces in anthropometry is good enough. But they have never weighed by using the electronic scales electrically and measure height with a microtoise.

Table 4. Average different increase between treatment and control groups

Variable		Groups				p-value
		Treatment		Control		
		Mean	SD	Mean	SD	
1.	Knowledge					
	Pre Tes	71.65	13.12	75.19	7.32	0.023*
	Post Tes	79.35	6.04	76.32	7.13	0.092
2.	Skill					
	Pre Tes	43.58	16.60	77.98	14.33	0.987
	Post Tes	87.83	7.48	79.63	12.1	0.014*

To analyze the effectiveness of training on knowledge before and after training, an

independent t-test was employed. The test result showed that p-value = 0.023 (p> 0,05) indicating

no different meaning was increasing of knowledge score in treatment group and group. The average pre-test of cadre knowledge in the treatment group was 71.65 and in control group 75.19. These results concluded that training increased cadres' knowledge. The cadres in the treatment group had a higher pre-post test score of knowledge (from 71.65 to 79.35) than the control group cadres. The difference score of pre-post knowledge of cadre test in the control group was not so high (from 75.19 to 76.32). The pre-post test large numbers in both treatment and control groups were included in the top category (≥ 70). This means that the cadre knowledge level is the same height between the treatment group and the control group. Although the control group did not receive any previous training, the cadre's knowledge was already high.The results of this study are similar to Fatmah and Yusran Nasution who found that the cadres increased awareness by 22 points after receiving training.Green in his theory proposed by Notoatmojo that one's knowledge is one of predisposing to facilitate a person to receive new ideas or information and make it easier to behave and act correctly.

Increasing cadre knowledge through training is needed to be able to manage Posbindu activities. Knowledge is a critical domain for the formation of one's actions.

To see the effectiveness of training on knowledge independent t-testwas operated before and after training. The test result shows that p = 0,014 (p <0.05) meaningpost test score is different from the mean score of skill in treatment group and control group. The average post-test score in the treatment group was 87.83 while in the control group was 79.63. The average rating of skill in the treatment group increased significantly from 43.58 to 87.83. It can be concluded that training is beneficial to improve cadre skills.

The skills possessed by a Posbindu cadre is a product of the level of knowledge possessed both through the learning process from within and from outside the individual self. Skill is a design of learning process to change behavior into the dexterous psychomotor in doing duties. A cadre must be able to weigh and measure height. Posbindu cadre task is to provide services on the measurement of height and weight. Therefore cadre skills need to be improved so that the community believes that in the end, it will increase community participation.

The results were similar to those obtained by Fatmah and Yusron who found that Posbindu cadre skills before training differed from after training.

After the implementation of Posbindu, cadres conduct counseling and counseling to the people who come. The average score of knowledge and attitudes of the community is presented in Table 5. To see the difference in mean score of pre-post test the paired t-test was performed.

Table 5. Average rating of knowledge and attitudes of Posbindu participants

Variable	Pre Tes	Post Tes	p-value
Knowledge	58.33±14.72	80.00 ±10.95	0.034
Attitude	50.55±10.79	70.55 ± 9.75	0.010

The mean score of pre-test knowledge was 58.33 increased to 80.00 at post-test. Results paired t-test found the p-value = 0.034 (p <0.05)meaning there is a significant difference of mean score of the pre-post test knowledge. This suggests that nutritional counseling given by cadres has an impact on the increasing knowledge of the community about the risk factors of non-communicable diseases and nutrition.

Similarly, the average score of public attitudes increased from 50.55 to 70.55 with the p-value = 0.010 (p< 0.05) indicating that there is a significant difference in mean score of the pre-post test of society attitude. This way, the nutrition counseling given can influence the change of social attitude. Nutrition counseling by cadres has an impact of increasing public attitudes toward risk factors for non-communicable diseases and nutrition

Conclusion

Based on the result of the research, it can be concluded that the training is effective in

increasing the knowledge and skills of Posbindu cadres and effectively improving the knowledge and attitude of Posbindu community. However, regular monitoring and evaluation of Posbindu activities need to be done to increase the knowledge and skills of the cadres.

References

1. Armiyatidkk, 2014. Pemberdayaan Kader POSBINDU Lansia sebagai upaya peningkatan kualitas hidup Lansia di desa Demak. Prosiding Seminar.
2. Astuti, Emi Dwi dkk, 2015. Gambaran Proses kegiatan Posbindu PTM di Puskesmas Sempu Kabupaten Banyuwangi. Jurnal Pustaka Kesehatan vol 4(no1). Januari 2016.
3. Azwar, Saifudin. Sikap Manusia. Teoridan Pengukurannya. Yogyakarta : Pustaka Pelajar
4. Bustan, 2007. Epidemiologi Penyakit Tidak Menular. Jakarta : Rineka Cipta
5. Cahyani, 2014. Manfaatpenyuluhan Bina Keluargalansiabagipeserta POSBINDU pada Kehidupan Sehari-hari. Jurnal Kesehatan Masyarakat. UNNES
6. Depkes RI, 2003 Kebijakandan Strategi Nasional Pencegahandan Penanggulangan Penyakit TidakMenular, Jakarta
7. Dirjen PPM-PL, Depkes RI, 2002. Panduan Praktis Surveilans Penyakit Tidak Menular, Jakarta
8. Depkes RI. 2006. Warta Pengendalian Penyakit Tidak Menular. Jakarta :
9. Dinkes PropinsiJawa Tengah. 2014. Pedoman Surveilans Pernyakit Tidak Menular PTM .Semarang
10. Dinkes PropinsiJawa Tengah. 2010. Pedoman Deteksi Dini Faktor Resiko Pernyakit Tidak Menular Berbasis Masyarakat. Semarang.
11. Fatmahdan Yusran Nasution. 2012. Peningkatan Pengetahuandan Ketrampilan Kader POSBINDU dalam Pengukuran Tinggi Badan Prediksi Lansia, Penyuluhan Gizi Seimbangdan Hipertensi. Studi di Kecamatan Grogol Petamburan. Jakarta Barat. Media Medika Indonesiana. 2012, vol 46, nomer 1
12. Fatmah, 2013. Pengaruh Pelatihan pada peningkatan pengetahuan dan ketrampilan teknis penyuluhan obesitas & hipertensi Kader Posbindu Kota Depok. Makara Seri Kesehatan. 17(2):49-54
13. Hidayat, Sugeng. 2008."Posyandu danpermasalahannya", Buletin SDM Kesehatan. Jakarta :Depkes RI.
14. Kemenkes RI, 2015. Pedoman Umum & Petunjuk Teknis Pos Pembinaan Terpadu Penyakit Tidak Menular, Jakarta
15. Maryati Dewidan Istiti Kandarina, 2011. Analysis Status Gizi Lansiamenggunakan Mini Nutritional Assesment di POSBINDU wilayah Pedesaandan Perkotaan. Kecamatan Ketapang Kabupaten Bandung. Tesis. Program Pascasarjana IKM UGM.
16. Notoatmodjo, Soekidjo. 2003 Pendidikandan Perilaku Kesehatan. Jakarta : Rineka Cipta
17. Notoatmodjo, Soekidjo. 2010. Metodologi Penelitian Kesehatan . Jakarta : Rineka Cipta
18. Perkeni, 2011. Konsensus Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia
19. Pratiknya, Ahmad Watik, 1986. Dasardasar Mertodologi Penelitian. Jakarta : Rajawali,
20. Susiloretni, Kun Aristiati dkk, 2013. Perubahan Pengetahuan dan Sikap Ibu dan Pendukungnya yang Terpapar Program

Promosi Menyusui Eksklusif . Seminar PAGI.

21. Suparto, Tirta Adikusumadkk, 2015. Masalah-masalah Program POSBINDU di desa Dayeuhkolot, Jawa Barat. Jurnal Pendidikan Keperawatan Indonesia

22. Umayadan Cahyati, 2015. Dukungan Keluargadan Tokoh Masyarakat Terhadap Keaktifan Pendudukke POSBINDU PTM. Jurnal Kesehatan Masyarakat. UNNES.