

12-31-2020

Training program to support posbindu cadre knowledge and community health centre staff in the Geriatric Nutrition Service

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Recommended Citation

Fatmah, Fatmah (2020). Training program to support posbindu cadre knowledge and community health centre staff in the Geriatric Nutrition Service. *ASEAN Journal of Community Engagement*, 4(2), 500-518. Available at: <https://doi.org/10.7454/ajce.v4i2.1051>

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Training program to support *posbindu* cadre knowledge and community health centre staff in the Geriatric Nutrition Service

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Received: November 30th, 2019 || Revised: January 8th, 28th, & November 20th, 2020 || Accepted: December 27th, 2020

Abstract

The geriatric minimal service standard (SPM) coverage in Depok has steadily decreased from 37.53% in 2013 to 11.8% in 2018. One factor affecting the problem is a lack of patient participation and the inability of *posbindu* (integrated service post for older people) cadres to perform their tasks. To increase the coverage of older people visiting *posbindu*, it is necessary to raise the knowledge and skill levels of *posbindu* cadres and community health centre staff in Depok. The skills include performing nutritional status assessment (NSA) and screening, early detection of dementia, independence assessment, and elderly nutrition counselling. This is a case-based article focusing on geriatric nutrition training for *posbindu* cadres and community health service staffs. We undertook training for 35 subjects (22 *posbindu* cadres and 13 community health centre staff). At the end of the training, the mean score of the elderly nutrition knowledge had increased to 52.5 points. The score before training significantly differed with post-training ($p = 0.001$). The knowledge of subjects who have the previous training was also significantly different from those who did not have the previous training ($p = 0.017$). The knowledge of *posbindu* cadres and community health centre staffs can be improved through elderly nutrition training. Technical assistance and monitoring performed three months after the training measured their ability to perform the geriatric nutrition services. They should be able to demonstrate how to educate older people in the diabetes mellitus nutrition campaign, metabolic syndrome, nutrition-balanced diet, and *gout*; also, how to conduct predicted height measurements using the knee-height predictor, and how to fill MNA, MMSE, BADL, and IADL instruments. We suggest the geriatric nutrition training program will increase SPM coverage at Depok City.

Keywords: *posbindu* cadres; community health centre staffs; training; geriatric minimal service standard coverage.

1. Introduction

Within the last 10 years, there has been an increase in the elderly population in Indonesia ([Central Statistical Bureau, 2018](#)). Commensurate with this has been an increase in problems of the elderly, especially regarding nutrition and health due to increased degenerative disease, especially coronary heart disease, hypertension, and diabetes mellitus. These are triggered by the increasing number of patients with obesity, malnutrition, and infectious disease such as anemia. In fact, the basic knowledge of health care providers in improving older people health efforts still needs to be improved. Executing elderly health efforts requires a substantial amount of funding, resources, and adequate facilities. Meanwhile, the available resources potential and community role is not optimally

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utilized, including the participation of the integrated service post for elderly (*posbindu*) cadres, the leading role in the implementation of older people health programs in the community ([Ministry of Health, 2010](#)).

The scope of older people visiting Depok to receive healthcare in *posbindu* and the community health centre from 2013 to 2016 decreased drastically over that time to 25.73% ([Depok District Health Office, 2018](#)). In 2017, the minimum service standard (SPM) of 100% elderly health service in Depok had not been achieved ([Depok District Health Office, 2017](#)). In fact, only 54% were achieved within the last year. However, a community health centre at Cimanggis subdistrict exceeded the SPM —to 299 %. The other 34 community health centres throughout the 11 districts in Depok only resulted under SPM. Several achieved less than 50%: the Pengasinan Community Health Centre (47.7%), Rangkapan Jaya Baru Community Health Centre (37.3%), Abadi Jaya Community Health Centre (24.2%), Mekarsari Community Health Centre (21.3%), and Kemiri Muka Community Health Centre (28.7%). Only Cipayung Community Health Centre (95.3%) and Limo Community Health Centre (91.9%) (nearly) reached the minimum service standard (SPM) target for Depok ([Depok District Health Office, 2018](#)).

Government Regulation, 2018 states that the minimum service standard (SPM) is a provision regarding the type and quality of basic services, a compulsory governmental privilege to which every citizen is entitled. The Health SPM is included at the provincial health and district/city levels ([Peraturan Pemerintah Republik Indonesia, 2018](#)). One type of basic health service at the provincial and district/city levels is elderly health service. The purpose of those services is to improve the quality-of-service delivery, responsiveness to needs in performing services, financing for service development, and quantity and expansion of user outreach. After the SPM is implemented properly, it will have an impact on service user satisfaction and independence in service delivery. Therefore, SPM plays an important role in improving the quality of health service facilities, including *posbindu*.

Posbindu is a form of community-based health efforts geared to controlling risk factors for non-communicable diseases under the guidance of the community health centre. *Posbindu* was established based on the joint commitment of all elements of society who care about the threat of non-communicable diseases. It specializes in early detection and monitoring of risk factors for non-communicable diseases, carried out in an integrated, routine, and periodic manner ([Ministry of Health, 2019](#)). Elderly people in Depok often suffer from hypertension (19.6%), diabetes mellitus (7%), and obesity (12%).

The possibility of their contracting these conditions can increase in the proportion of these diseases if not immediately anticipated early by nutritional screening ([Depok District Health Office, 2018](#)). The coverage of health services for elderly people in 2013 was 37.53%, 23.62% (2014), 69.34% (2015), and 11.8% (2016). The trend shows a decline in the proportion of health services coverage over the past five years. Several studies have shown that one of the factors associated with elderly visits to *posbindu* was the participation of *posbindu* cadres.

One of the determining factors for increased coverage of elderly visits to *posbindu* is the participation and capability of cadres to serve them. As the spearhead of *posbindu* in the community, cadres are assigned several tasks, assisting community health centre workers to serve older people in *posbindu*. Cadres have a big role in the implementation of *posbindu* monthly activities such as preparing places, tools, and materials; measuring height and weight; conducting individual counselling based on a health test (questions regarding a clean and healthy way of life), elderly nutrition and health, and others. In fact, cadres have difficulty taking health and nutrition education to older people due to a lack of confidence and lack of extension media. Low cadre performance certainly affects the quality of health and nutrition of elderly people in their area. Therefore, it is necessary to improve the skills of *posbindu* cadres and community health centre staff in Depok City by training them in elderly patients' health services management (Ministry of Health, [2003](#); [2004](#)). Improving *posbindu* cadre skills will increase the proportion of elderly people visits to *posbindu*. Finally, it will hopefully increase SPM percentage of Depok City from 53.9% in 2019 to 100% in 2025.

Elderly patients' health services include health and nutritional screening services by midwives, nurses, nutritionists, and *posbindu* cadres. The scope of the screening includes checks for hypertension (blood pressure), diabetes (blood glucose), blood cholesterol level, nutritional status assessment (NSA) through weight and height measurement, and early detection of dementia through Mini Mental Status Examination (MMSE) and Geriatric Depression Scale (GDS) (Ministry of Health, [2014](#); [2017](#)). Other elderly health services that *posbindu* cadres can perform are height and weight measurement, early detection of malnutrition using Mini Nutritional Assessment (MNA) tools, and elderly people independence assessment using Barthel (BADL) and IADL Activity Daily Living Index ([Robin, 2019](#)). The Mini-Nutritional Assessment Short-Form (MNA®-SF) is a screening tool used to identify older adults (>65 years) who are malnourished or at risk of malnutrition. Malnutrition in older people is associated with premature death and complications. The

progression to malnutrition is often insidious and undetected by older people (Soysal et al., 2019).

Mini Mental State Examination (MMSE) is a screening test/tool to detect the potential risk of dementia in older people. Dementia is a brain syndrome that causes gradual deterioration of brain function, cognitive skills, and ability to perform everyday tasks (e.g., washing, cooking, bathing, and dressing). Creavin et al. (2016) revealed that people with dementia may also develop problems with their mental health (mood and emotions) and behaviour that are difficult for other people to manage or deal with. Barthel Index Basic Activity Daily Living (BADL) is a tool to measure all aspects related to self-care. The Katz Index and Instrumental Activities of Daily Living (IADL) are connected to the ability to manage living environment for the elderly inside and outside of the home (Meng et al., 2019).

Height measurement of older people is difficult to perform due to changes in body posture caused by aging, spine abnormalities due to osteoporosis, kyphosis, or the necessity to sit on a wheelchair or bed. To anticipate this difficulty, height predictors such as arm span, knee height, and sitting height can be used to obtain predicted height in older people. Afterwards, the results of both indicators can be converted to Body Mass Index (BMI) in older people with an NSA (Nutritional Status Assessment) card (Fatmah, 2013). In 2013, a training of NSA card usage and elderly anthropometry measurement practice –knee height, arm span, and sitting height predictors–was conducted on cadres from several chosen *posbindu* in Depok. However, the implementation on the field has not been performed since 2013 due to limited equipment provided by the UNIVERSITAS INDONESIA team at the time. Therefore, the socialization and application practice of this technology should be reconducted through a training of practical application skills of *posbindu* cadres and community health centre staffs/older people coordinators. In addition, one strategy that increases elderly peoples' *posbindu* coverage is to improve their knowledge in geriatric nutrition service at *posbindu* through training (Indarjo et al., 2018). The objective of the study was to assess the effect of geriatric health services training of *posbindu* cadres and their knowledge levels at the end of the training.

The novelty of this study came from providing geriatric nutrition service training for the participants, which differed from the previous study. The first study focused on the nutritional status assessment, using knee height, arm span, and sitting height predictors, and the NSA card (Fatmah, 2013). Geriatric nutrition services consisted of malnourished risk assessment (using MNA instrument), dementia early detection (using MMSE instrument),

and independent level risk assessment of older people (using BADL and IADL instruments). In addition, we developed some IEC (information, education, and communication) materials on diabetes mellitus, metabolic syndrome, gout, and balanced nutritional gUniversitas Indonesiadelines in the form of a leaflet, flipchart, and poster to increase the knowledge level of participants in geriatric nutrition and health.

2. Methods

2.1. Study design

This is a quasi-experimental one group pre-test-post-test design ([Ariawan, 1998](#)) focusing on the geriatric nutrition training implementation for *posbindu* cadres and community health centre staffs of nutrition and/or geriatric program at Depok City. The study has schema, as shown in Figure 1.

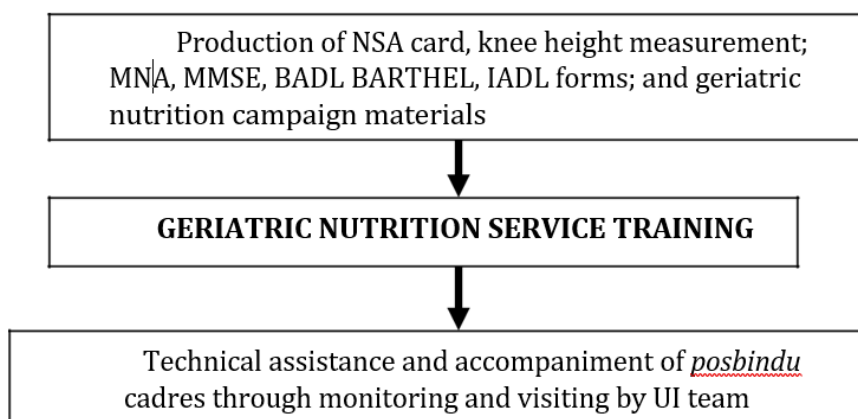


Fig. 1 Schema diagram of study

First, we reproduced all materials for training, including the NSA card, knee height measurement; MNA, MMSE, BADL BARTHEL, IADL forms; and geriatric nutrition campaign materials (gout, diabetes mellitus, metabolic syndrome, and nutrition-balanced gUniversitas Indonesiadeline flipcharts, leaflets, and posters). Two days training were undertaken at the Faculty of Public Health, Universitas Indonesia, and attended by 35 participants (33 women and 2 men, with ages ranging from 30–50 years) and 3 facilitators from Universitas Indonesia. Participants consisted of nutritionists and or elderly program coordinators from a community health centre at the subdistrict level, and *posbindu* cadres who directly handled the elder people program. The participants had working experience in elder people programs with at least 1 year of work experience.

Pre- and post-tests were given to all participants to assess their improving knowledge on geriatric nutrition service. After the training, a Universitas Indonesia team conducted technical assistance and accompaniment of *posbindu* cadres through monitoring and visiting for 3 months. The objective of the activity was to observe the ability and skill of *posbindu* cadres (training participants) in taking geriatric nutrition service to their *posbindu* (how to conduct a geriatric nutrition campaign; how to measure knee height as a height predictor for older people; and how to fill out the forms of MNA, MMSE, BADL, and IADL Index Barthel).

2.2. Study subject and location

There were 35 participants (22 *posbindu* cadres and 13 nutrition staff/elder people program coordinators from 11 districts in Depok). They participated in two days training held on the 25–26 June 2019 in FKM-UNIVERSITAS INDONESIA. The resource people came from the Centre for Ageing Studies Universitas Indonesia (CAS UNIVERSITAS INDONESIA). The criteria of cadre who were chosen for training had performed cadre duty for at least six months and actively performed their tasks in *posbindu* in the last six months. The community health centre staff were not chosen specifically; they were all invited to participate in training.

The locations of chosen *posbindu* and district community health centres were spread out through 11 districts–Cimanggis, Sukmajaya, Beji, Pancoran Mas, Cinere, Limo, Bojongsari, Sawangan, Tapos, Cipayung, and Cilodong. Each chosen *posbindu* represented 1 subdistrict randomly from 63 subdistricts in Depok (22 subdistricts from 11 districts in Depok).

Primary data were collected through pre- and post-test assessments which consisted of questions regarding the common symptoms of diabetes, definitions of metabolic syndrome risk factors, criteria of hyperuricemia and how to prevent it, the recommended percentage of macronutrition consumption for older people, an example of Clean and Healthy Living (*Perilaku Hidup Bersih dan Sehat*; PHBS) for older people, predictors of older people height measurement, instrument to early detection malnutrition in older people, and types of daily physical activities in BADL (Basic Activity Daily Living) and IADL (Instrumental Activity Daily Living). The aim of the pre- and post-test assessments was to gauge the improvement of participants' knowledge regarding older people nutritional services after training.

The training materials included the theory of predicted height from knee height predictor, the practice of using the MNA instrument for early screening of older people at risk of malnutrition, practice of using a MMSE instrument for early detection of older people at risk

of dementia, the practice of older people independent assessment using BADL and IADL, and older people nutritional counselling practice, including balanced nutrition for older people, the degenerative disease of hyperuricemia, diabetes, and metabolic syndrome. Theory and practice of the use of knee height measurement, MMSE, MNA, BADL, and IADL instruments were provided on the first day of training. The second day of training was filled with nutritional counselling practice by interviewees with the help of two nutrition students from the Faculty of Public Health, Universitas Indonesia, followed by role play performed by the participants.

Data were analysed using SPSS for Windows version 20, which included univariate analysis to obtain frequency distribution and proportion of minimum, mean, and maximum values. Data were presented descriptively in a table. Bivariate analysis was performed using dependent T-test to determine the average difference in knowledge before and after training. Analysis using independent T-test and ANOVA were also performed to assess the changes in knowledge after training according to participants' characteristics, e.g., age, education, duration of employment as *posbindu* cadre and community health centre staff, employment status, and attendance at prior trainings before this older people nutrition training. The study was carried out over a period of 5 months, starting from reproduction of the NSA card, knee height measurement; MNA, MMSE, BADL BARTHEL, IADL forms; geriatric nutrition campaign materials, and geriatric nutrition service training implementation, until monitoring and evaluation of *posbindu* cadres training of participants' skill in geriatric nutrition service.

2.3. Evaluation of training and *posbindu* cadres monitoring

Pre- and post-test were used to evaluate the improving knowledge of participants before and after the training (Figure 2). While the monitoring and technical assistance of all training participants were undertaken by filling the observation instrument of participants' skill on the geriatric nutrition service in *posbindu* (Figure 3).

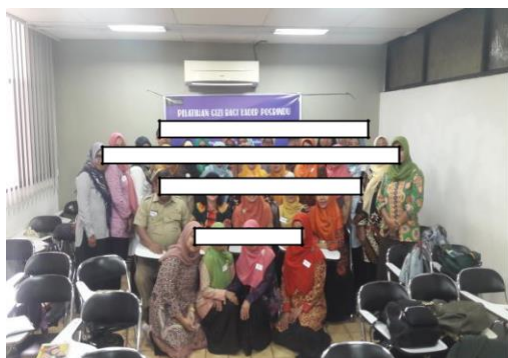


Fig. 2 Geriatric nutrition service training



Fig. 3 Role play of cadres on nutrition counselling

3. Results and Discussion

Table 1 showed the sociodemographic characteristic of subjects. The training was attended by 35 participants, which consisted of 22 *posbindu* cadres and 13 community health centre staff members who worked as nutrition staff and or elder people program coordinators. Most participants were 40–49 years old, most graduated from high school or vocational high school. Most participants had worked as *posbindu* cadre and/or community health centre staff for more than 10 years. However, less than half of the total participants had worked formally in the state civil apparatus, as entrepreneurs, or community health centre staff and the rest were housewives. More than half of the participants had received health and nutrition training. The training topics that they attended were anemia Training of Trainer (ToT), positive deviance, caregiver, toddler growth monitoring, solid feeding for toddlers and children (*Pemberian Makanan Balita dan Anak/PMBA*), solid foods for babies, lactation, clean and healthy living behaviour (*Perilaku Hidup Bersih dan Sehat/PHBS*), malnutrition management, and growth monitoring.

There were 10 questions asked in the pre- and post-test questionnaires which was answered correctly by all the participants as described in Table 2. Using communication tools and shopping was the IADL question that was the most correctly answered question by all training participants, followed by questions about how to prevent hyperuricemia; what the criteria of hyperuricemia patients were (82.9%, 77.1%, and 60% respectively). One of the symptoms often felt by diabetes mellitus (DM) patients is one of the most correctly answered questions by the participants post-training.

Table 1. Sociodemographic characteristic of subjects

Variable	Frequency distribution	
	Number (n)	Proportion (%)
Age:		
<40 y.o	10	28.6
40–49 y.o	18	51.4
>50 y.o	7	20.0
Mean + SD	44.4 + 8.5	
Final education:		
Junior high school	4	11.4
Senior high school	16	45.7
Academy/bachelor’s degree	15	42.9
Working status:		
No	21	60.0
Yes	14	40.0
Working experience (years)		
<5	9	25.8
5–9	12	34.3
≥10	14	40.0
Had ever or not participated in the health and nutrition training		
Yes	23	65.7
No	12	34.3

Table 2. Distribution of right answer at pre-post-test

Question	n	Pre-test	Post-test	
		(%)	n	
One of frequent signs complained by diabetic patients	33	94.3	34	
Risk factors of metabolic syndrome	16	45.7	31	
<i>Gout</i> patient criteria	13	37.1	34	
One of way to prevent <i>gout</i> disease	5	14.3	32	91.4
Consumption suggestion for older people	11	31.4	18	51.4

Question	n	Pre-test	Post-test	
		(%)	n	
Healthy and clean life behaviour of older people	25	71.4	32	91.4
Predicted height measurement from Predictors	16	45.7	35	100.0
Instrument to detect risk of undernourished older people	10	28.6	26	74.3
Take baths, eating, and toileting are a part of BADL	5	14.3	19	
Using communication and shopping are a part of IADL	2	5.7	31	

This may be due to almost all participants had knowledge of DM symptoms before training. The description is consistent with other studies stating that most *posbindu* cadres had good knowledge of diabetes mellitus (Sengkey et al., 2015). Meanwhile, the proportion of participants with correct answers to macronutrition suggestions for older people is like the answers to the question about clean and healthy living for older people (each contributed 20%). The proportion of participants with correct answers to the metabolic syndrome risk factor at the end of training increased two-fold. Even the question regarding predicting older people's height predictor was correctly answered by all participants. The question of hyperuricemia criteria was correctly answered by more than three-quarters of participants at the end of the training compared to before training. Increasing knowledge of participant scores at the end compared to before the training was indeed not large (4.45 points). It might be based on the same backgrounds of all participants, both *posbindu* cadres and community health centre staffs of nutrition officers/older people program coordinators. The training strengthens or refreshes what they already know.

The mean test score differences before and after training according to participants' characteristics are presented in Table 3. The pre-test scores significantly differed with post-test scores ($p = 0.001$). Likewise, previous participation in health and nutrition training also significantly differed before and after training ($p = 0.017$). The findings of the study are consistent with other studies that assessed the knowledge of cadres who have never had training with the knowledge level of the integrated health service post (*posyandu*) revitalization

strategy (Wahyuni et al, 2017). However, this is not the case for employment status, education, duration of work as *posbindu* cadre, or community health centre staff, and age. Although insignificant, the participants who were employed had a slightly higher score mean difference compared to participants who were unemployed.

Participants who graduated from Academy /Bachelor's degree had higher score differences than participants who graduated from high school and junior high school. It is consistent with what has been observed in other studies (Diaz-QUniversitas IndonesiaJano et al., 2018; Rakhma et al., 2017). The higher the educational level of person, the easier she or he will be to open to information (Kromydas, 2017). The tendency cannot be found in age and working duration as *posbindu* cadres and community health centre staff. It might be due to the similar proportions of participants in the three groups of working duration (Table 2). Meanwhile, the largest proportion of age is in the 40–49 group whose vision and hearing functions may start to decrease, affecting their information absorption (Wardani et al, 2014). However, the findings are inconsistent with other studies that proved the association between both variables and knowledge level (Dharmawati & Nyoman, 2016).

All participants were asked to lie down on the floor using the Knee Height Caliper tool. Participants did well according to the facilitator's instructions. Likewise, during the simulation practice of older people's nutrition counselling on the topics of gout, diabetes mellitus, metabolic syndrome, and balanced nutrition, they could do it appropriately. MMSE, MNA, BADL, and IADL instruments could not be filled out correctly because there were still some errors in counting the value of each activity in these instruments.

Table 3. Mean difference increase knowledge level at post training based on the respondents' sociodemographic characteristic

Variable	Difference score of pre-post	
	test	p-value
	Meant+SD	
Pre-test value	3.89+1.32	*0.001
Post-test value	8.34+1.55	
Working status:		
No	4.24+1.70	0.304
Yes	4.79+1.19	

Variable	Difference score of pre-post	
	test	p-value
	Meant+SD	
Had ever or not participated in the health and nutrition training		
No	3.75+0.87	*0.017
Yes	4.83+1.67	
Final education		
Junior high school	3.50+1.29	0.364
Senior high school	4.44+1.82	
Academy/bachelor's degree	4.73+1.16	
Working experience (years old)		
<5 y.o.	5.00+1.94	0.097
5–9 y.o.	4.83+1.64	
≥ 10 y.o.	3.79+0.80	
Age (years old)		
<40 y.o.	4.60+1.71	0.364
40–49 y.o.	4.33+1.41	
≥50 y.o.	4.57+1.72	

*p < 0.05

They almost never fill the forms in their daily activities because their tasks focus on taking height and weight; nutrition supplementation; and taking blood pressure, uric acid, blood glucose level, and cholesterol for older people ([Ministry of Health, 2019](#)). Therefore, the resource person must guide all participants several times slowly until they understand. The training methods used simulation/role play and two-way communication discussion by the resource person to the training participants. The simulation method and the use of extension media tools such as the leaflet and the flipchart are quite effective in increasing human knowledge. The nutrition counselling pamphlet is printed teaching material designed to be studied independently by trainees, while the discussion method is learning through two-way communication so that it is easier for participants to understand ([Fitriana et al., 2015](#); [Weheba & Maher, 2007](#)).

Several studies showed that the eye is one of the body's senses delivering the most knowledge into the brain (75–87%). The remaining 13–25% is channelled through the other

five senses, namely the ears and hands. More knowledge is absorbed with greater clarity when more senses are used to receive knowledge ([Hutmacher, 2019](#)). The training material provided is in accordance with the *posbindu* cadre's task in the field as a companion to community health centre staffs and field counsellors. Exposure to information and knowledge frequently and repeatedly can increase individual knowledge both from one's self and others' experiences. Individual knowledge is also influenced by education, work, and length of work. Knowledge is the basis for someone to take an action ([Manly et al, 2018](#)).

Depok District Health Office has implemented Geriatric Patient Full Assessment (*Penilaian Paripurna Pasien Geriatri/P3G*) since 2017 ([Ministry of Health, 2017](#)). The aim of the P3G is to plan for comprehensive treatment and long-term follow-up. P3G has some activities that can be carried out by *posbindu* cadres, such as functional status test, i.e., assessment of the daily independence of older people by using BADL and IADL instruments; cognitive status by completing the MMSE instrument; nutritional status with MNA instruments. However, the P3G training for *posbindu* cadres was still limited due to the limited budget. Therefore, the P3G training carried out by the Faculty of Public Health-UNIVERSITAS INDONESIA team is expected to be able to improve the skills of *posbindu* cadres in implementing P3G to increase older people visits to *posbindu*.

Post-test scores of participants with diploma/bachelor's degree were slightly higher compared to junior high school and high school/vocational high school graduates. This finding was in accordance with four studies conducted to *posbindu* cadres ([Fatmah, 2013](#); [Fatmah & Yusran, 2012](#); [Pratiwi, 2012](#); [Yuyun, 2017](#)). The first study showed an increase of 22 items in the cadre's knowledge regarding older people anthropometry measurement. The second and third study represented an increase of knowledge regarding obesity and hypertension, almost reaching nearly 15 points with a mean baseline score of 64 and mean final score of 79. The last study proved that the knowledge of *posbindu* cadres increased after they were given cadre empowerment. The two first studies proved that there was a significant difference in knowledge before and after training ($p = 0.000$). Most participants finished their high school/vocational high school. This may affect knowledge level changes of participants post-training. Education can affect individual knowledge because knowledge can be obtained through education ([Mellydar, 2013](#)). Knowledge is a result after someone receives health education ([Manly et al., 2018](#)).

The use of elderly nutrition counselling media in the form of flip sheets, posters, and leaflets for participants can increase knowledge and understanding. This was in accordance

with [Armiyati et al. \(2014\)](#) regarding older people *posbindu* cadres' empowerment. The results of the study stated that increased *posbindu* cadre post-test scores regarding hypertension, diabetes, hyperuricemia, and anemia, compared to the pre-test were affected using health promotion media for older people in the form of the flip sheet and leaflet. Printed media produced better understanding than digital media for people to increase their knowledge ([Delgado et al., 2018](#)).

Posbindu cadres were elderly people reform agents, increasing nutritional and health status through efforts in the community movement, older people nutrition counselling, early screening for malnutrition, early detection of dementia in the older people, and older people independence assessment. The function of *posbindu* cadres is to motivate the community, providing counselling, and monitoring (MOH, 2010). The services given by *posbindu* cadres every month related to knowledge given in this training were daily activity assessments (activities of daily living) using BADL and IADL, dementia mental status assessment using MMSE, NSA using height and weight measurement and MNA form, and health and nutritional counselling ([Burman et al., 2015](#); [Devi, 2018](#); [Julieta & Eneida, 2017](#); [Li-Chin & Alan, 2015](#); [Torbahn et al., 2020](#); [Yang et al., 2016](#)). The four skills were required by *posbindu* cadres to perform their duties as *posbindu* cadres. Therefore, the improving knowledge of *posbindu* cadres in elderly people nutrition services is expected to increase the total number of older people visits to be able to increase the minimal service standard value in Depok City.

The study had several limitations, i.e., 1) there was no comparison/control group that could affect data accuracy, 2) the authors were unable to control external influence, both from mass media (printed and audio-visual) and other sources that may influence the knowledge and skills of cadre and community health care staff regarding elderly people's nutrition, and 3) the assessor of cadre's technical skills in counselling older people in *posbindu* were the authors themselves, thus cannot rule out respondent evaluation. To overcome respondent evaluation, the assessment can be performed by individuals/group outside of the authors using a double-blind method, whereas the assessor and the assessed had no knowledge of each other. Control group can be incorporated in a similar study in other places to increased data accuracy to compare knowledge changes.

4. Conclusion

Elderly people's nutrition training program can increase the knowledge of *posbindu* cadres and community health centre staff in Depok with an increase of 50 points post training. There was a significant difference of post-test score compared to pre-test score. This increase in scores is caused by trainings previously attended by participants, including anemia TOT, positive deviance, caregiver, toddler growth monitoring, PMBA, solid foods for babies, lactation, PHBS, malnutrition management, and growth monitoring. Technical accompaniment and evaluation of monitored visits by *posbindu* cadres and community health centre staff were undertaken three times after three months post-training. The aim of the activity was to observe the ability and skills of *posbindu* cadres in performing geriatric nutrition services in *posbindu*. Thus, the improvement of their skills with elder people nutrition service can be expected to increase the coverage of older people visiting *posbindu*. It will ultimately increase the percentage of SPM in Depok to 100%.

Acknowledgments

We are extremely grateful to all the *posbindu* cadres, community health centre staffs of nutrition and or older people program who participated in the training. We extend our thanks to the Directorate of Research and Community Engagement Universitas Indonesia 2019 who funded the study.

Author Contribution

Fatmah conceived the present idea, developed the theory, and performed the computations. She has verified the analytical methods, investigated, and supervised the findings of this work. She has discussed the results and contributed to the final manuscript.

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