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Collaborative model as a training for increasing village health worker competency about complementary feeding

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ABSTRACT

Background: A Kader refers to a Village Health Worker (VHW), a volunteer, which becomes one of the sources of community reference. Commonly, they sustain a mother's knowledge regarding adequate complementary feeding. However, there are still some VHW who have not possessed a health education background nor been able to be independent.
Objectives: This study aimed to analyze the impact of collaborative models on VHW's competence as in knowledge, self-efficacy, attitudes, and counseling skill on the topic of complementary feeding.
Materials and Methods: The design of this research is a quasi-experiment control group pretest-postest, with the retrieval of subjects using purposive sampling. Subjects were selected based on the location of the posyandu. The population in this research was VHWs in the Lembang district were 40 VHWs in each group. The treatment group was given training intervention for 1 month with a collaborative model, combining several methods into a series. The main topic was counseling and complementary feeding. The control group was given booklets and leaflets. VHW's competence was measured using questionnaires. This research was conducted in January-April 2020.
Results: Statistical test results before the treatment of both groups showed no difference (p>0,05) in each variable. Two months after the intervention, there were significant differensces in the mean score of knowledge (p=0,001), attitude (p=0,001), and VHWs self-efficacy (p=0,000) in both groups. VHW counseling skills (p=0,149) until the first month there was not a significant difference. Unexpectedly, in the second month, the VHW counseling skills could not be observed due to the global COVID-19 pandemic. The mean score of each group increased significantly, but the score of the treatment group was higher than the control group.
Conclusions: A collaborative model is effective when compared to only providing booklets and leaflets in increasing VHW's knowledge, attitudes, and self-efficacy but not effective yet for VHW counseling skills.

Keywords: Collaborative model; Competence; Complementary feeding; VHW

BACKGROUND

The double burden of malnutrition is a health problem that still needs to be seriously addressed. The double burden of malnutrition is indicated by malnutrition problems (stunting and wasting) along with problems with overnutrition (obesity).[1] Based on Basic Health Research (*RISKESDAS or Riset Kesehatan Dasar in Bahasa Indonesia*), the prevalence of malnutrition and malnutrition under five in Indonesia is still high. The progress from 2007 to 2013 has shown improvements, although the process for correcting all forms of malnutrition is still quite slow.[2]

The prevalence of severe malnutrition and malnutrition (weight-for-age) in Indonesia in 2018 was 3.9% and 13.8%. At the provincial level, malnutrition and undernutrition for children under five in West Java were 2.6% and 10.6% respectively. The prevalence of very short and stunted children (weight-for-age) in Indonesia in 2018 is 11.5% and 19.3%. At the provincial level, very short and short children under five in West Java reveals a figure of 11.7%, and 19.4%, which is slightly higher than the national figure. In 2018 the prevalence of very thin and underweight (weight-for-height) in Indonesia was 3.5% and 6.7%. Additionally, very thin and underweight toddlers in West Java expose a figure of 3.2% and 5.2%, which is slightly lower than the national figure.[2] The most serious malnutrition problem in West Java is in West Bandung Regency with a percentage of 22.4%.[3] This high prevalence rate indicates that Indonesia is still

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experiencing serious nutritional problems that need to be prevented and addressed.

One of the factors provoking malnutrition is the inadequate provision of complementary foods and early weaning. The attitudes and understanding of mothers about how to provide complementary foods, how to maintain nutritional intake, and manage food contribute to cases of malnutrition in infants and toddlers.[4,5]

A health *kader* refers to Village Health Worker (VHW) who is a volunteer selected by the community and tasked with developing the community, in this case, VHWs are also summoned as health promoters or promoters.[6] VHWs` contributions to improving access to care and health knowledge, behaviors, and outcomes are well documented, notably for conditions such as asthma, hypertension, diabetes, and HIV/AIDS; for procedures such as cancer screening and immunizations; and for maternal and child health in general.[7–11] One of the duties of a VHW is to provide health education, especially in *Posyandu*. *Posyandu* is Integrated Services Post (SIP) in Indonesian. *Posyandu* is a platform where VHW is linked to the problems currently being faced by society. In other words, VHWs are reference persons who maintain a close relationship with the community.[12,13] The existence of *Posyandu* and VHWs is needed in a promotional and preventive approach, especially concerning improving child nutrition and maternal and child health.[14] In this case, they are expected to gain expertise and proficiency in providing counseling and giving assistance on exclusive breastfeeding and appropriate complementary foods. Based on interviews with several VHWs in Lembang Subdistrict, many VHWs were not skilled in serving and building excellent and pleasant communication. For instance, some VHWs used regional languages that sounded harsh or played high pitch while communicating with the patients.

Other factors that influence the performance of VHWs apart from knowledge include self-efficacy.[15] A person's level of confidence in his ability is expressed as self-efficacy.[16] A person who has high self-efficacy will be able to think quickly and have stable self-confidence in managing his duties when situations requiring high levels of stress.[17] In this manner, a VHW is expected to develop positivity and self-efficacy, one of which can be acquired through the learning process or training.

The local government has provided various sessions of training to VHWs, especially regarding the issues of mothers and toddlers.[18] Based on preceding research, in this Lembang sub-district, training for VHWs had been held. The methods used in the previous training were lectures and workshops, which intended to broaden the knowledge, upgrade skills of VHWs in various matters, as well as giving practical solutions in providing VHWs competence.[19,20] The method used by the Lembang District government was the conventional method. The weakness of the conventional method is that the VHWs get bored quickly, which has made it challenging to absorb the information. Based on the interview, the VHWs wanted training with a modified method because they thought that the substance presented was too heavy to be conveyed by the conventional system.

Learning methods that are considered effective for community-based health education are active and independent learning processes. One of which is the collaborative learning method.[21] Collaborative learning is an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product.[22] The learning model is a framework of the learning approach, learning strategies, learning methods, learning media, and learning techniques.[23] Collaborative methods are commonly used in formal education, however, this method is rarely used for community-based health education or training.[24] In this case, this refers to arranging a learning concept that incorporates government and community participation. In the collaborative learning method, implementation with two or more parties involved is preferable.[25]

One research that implemented collaborative training in the cattle breeder community conducted by Bank Indonesia (BI) representatives of West Sumatra, BPTUHPT Padang Mengatas, Faculty of Animal Husbandry, Andalas University, Department of Animal Husbandry and Animal Health, SKPD of Animal Husbandry services in West Pasaman Regency and private business institutions designated that participants encountered changes (improvements) in cognitive aspects of (43.53%).[26]Through a collaborative method of training, VHWs are expected to improve their performance. In regards to the gap of VHW`s proficiency and their main work, it is necessary to research the effect of collaborative learning models on knowledge, self-efficacy, attitudes, and skills of VHWs in counseling regarding complementary feeding.

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MATERIALS AND METHODS

This study employed a quasi-experimental non-randomized control group pretest-postest design by taking the number of subjects using purposive sampling. The population in this study was 161 VHW in Lembang District, West Bandung Regency. Respondents in this study were 80 active VHWs who met the inclusion criteria. All respondents were divided into two groups, namely the group provided with training facilities using collaborative methods which included the provision of booklets and leaflets (the treatment group), and the group that was only given booklets and leaflets as learning facilities (control group). The treatment and control groups were determined by grouping by *Posyandu* area to anticipate interactions between groups during treatment. The subject size was calculated using the formula for the mean of two independent populations. The subjects obtained were 40 VHWs in each group.

The criteria for respondents in this study were taken based on inclusion and exclusion criteria. The inclusion criteria in this study comprise; VHWs are active with 2-5 years of experience, VHW attends the activities, and VHWs are willing to become respondents. VHWs who were unable to attend the event and not willing to be respondents are involved in the exclusion criteria.

This training was conducted in January - April 2020 in Lembang District, West Bandung Regency. The independent variable in this study is the provision of training with a collaborative learning model for VHWs, while the dependent variable is the knowledge, attitudes, self-efficacy, and counseling skills of VHWs. The variables of knowledge, attitudes, and VHW counseling skills were obtained by using a questionnaire that had been tested for validation and reliability testing. The self-efficacy variable uses the General Self-efficacy Scale (GSE) instrument developed by Schwarzel & Jarusalem (1995) in the adaptation of Indonesian which has also been tested for validation and reliability testing.[27]

The pre-test was carried out in the first to the third week of January. Training for the treatment group was carried out from the fourth week of January to the third week of February. Treatment is carried out once a week, on Saturdays for training and during the activities in Posyandu for facilitator assist. The first post-test was carried out in the first to the third week of March and the second post-test was carried out in the first to the third week of April. The training for the treatment group was guided by two facilitators. There were 2 facilitators, consisting of 1 person from the West Bandung District Health Office and 1 lecturer from the Indonesian Education University (Universitas Pendidikan Indonesia). Facilitators are selected based on recommendations from the health office and university. Researchers also discuss and explain the methods used in the training to be implemented. The researcher reiterates whether the facilitator can use an intervention method that combined seminar, role-playing, group discussions, and technical guidance in a series or not. Then decide whom the facilitator will fill in the training. The distribution of booklets and leaflets for VHWs (control group) was carried out at the same time as the first week of training for the treatment group at different locations.

Booklet and leaflet containing discussion of balanced nutrition for infants around 6-24 months. An infant's need for energy and nutrients starts to exceed what is provided by breast milk, and complementary foods. A detailed discussion about what to how recommends that infants start receiving complementary foods. The booklet also contains an explanation of basic communication and counseling for VHWs. Meanwhile, the leaflet only contains infographics regarding complementary feeding, which is made short and easy to understand. This leaflet is given to be a material that VHWs can use in counseling.

Implementation of Training

The training for the treatment group was carried out within 1 month. In the first and second weeks of meetings, training was directed at one of the selected *Posyandu*. In the first week, the VHWs studied a set of materials on complementary foods. The training was carried out with the guidance of two facilitators. At first, VHWs who had been gathered in one class were given a set of booklets and leaflets, succeeded by the presentation by the facilitator. The facilitator presented the materials verbally with slide tools. In presenting the material, the facilitator also explains using props and occasionally explains in role plays.

Subsequently, VHWs were asked to discuss how to form groups of 5-6 people. Each VHW was demanded to make a question. The facilitator exchanged the questions, and later each group was urged to solve the question through discussion. The facilitator went around monitoring the discussion activities and helped out once in a while. Each group presented the results of the discussion, and the other groups presented their responses. The facilitator helped by explaining the remaining unanswered questions.

In the second week, the material presented is about counseling activities. The facilitator also carried out the training activities like the first week. The activities were more or less like the prior week. Two facilitators also conducted the material for the second week. In the third week, the facilitator assisted VHWs during the activities in *Posyandu*. The facilitator reaffirmed the core points to be conveyed to each of the VHWs.

To conduct a statistical analysis of the characteristics of the respondents, we employed descriptive and frequency distribution tables. Analysis of the mean difference in confounding variables used the independent t-test for normally distributed data, the Mann Whitney test for abnormally distributed data, and the Chi-square test for nominal data types. The difference in the mean of each dependent variable in the two groups before and after the intervention was carried out using a paired t-test because the data were normally distributed. To find the mean difference test for each dependent variable before and after the intervention between groups, we utilized the Mann-Whitney test because the data were not normally distributed. The multivariate test conducted was a general linear model, repeated measure against each variable after the intervention in both groups. The statistical test in this study used a 95% confidence level. This research has passed the research ethics review by the Health Research Ethics Commission of the Faculty of Medicine, Diponegoro University.

RESULTS

Respondent Characteristics

Table 1 explicates that most of the age of VHWs in the control and treatment groups were included in the age group 36-55 years. According to the inclusion criteria, the VHWs possessed 2-5 years of experience. In the control group, there were two male VHW members, while in the treatment group, all were women. Most of VHWs had graduated from high school. Most of VHWs had attended previous training and during the research process also received other information regarding research material from other sources. Based on the results of statistical tests (p> 0.05), the characteristics of the control and treatment groups respondents did not have a significant difference or were in the same condition. Equal conditions in the two groups before the treatment was given, are expected to describe the comparison of how far the treatment results in the two groups in this study. later these results can be generalized to a larger subject with the same conditions. Equal conditions also affect the causal relationship between the independent variable and the dependent variable.[28,29]

Table 1. Characteristics of VHW

Characteristics of VHW	Control			Treatment			*p*
	Mean ± SD	Min	Max	Mean ± SD	Min	Max	
Age (years)	43.40 ± 9.48	22	71	43.23 ± 9.37	23	59	0.934[1]
Length of time as a VHW (years)	3.48 ± 1.15	2	5	3.52 ± 1.11	2	5	0.842[2]
Characteristics of VHW		**n**	**%**		**n**	**%**	
Gender							0.247[3]
Male		2	5		0	0	
Female		38	95		40	100	
Education							0.213[2]
SD		8	20		5	12.5	
Junior High		11	27.5		10	25	
High school		19	47.5		20	50	
D3 / S1		2	5		5	12.5	
Training							0.500[3]
Yes		36	90		35	87.5	
Not		4	10		5	12.5	
Other sources of information							0.644[3]
Yes		36	90		36	90	
Not		4	10		4	10	

[1] Independent sample T-Test
[2] Mann-Whitney
[3] Chi-square
* Significant

VHW Competence before Treatment

Before VHWs were given training and facilities to learn, VHWs were first given a pre-test to see the initial scores in the two groups. The results of this study indicated that the knowledge, attitudes, self-efficacy, and VHW skills of counseling before being treated statistically have no differences between groups (p> 0.05). The absence of this significant difference indicates that the two groups possessed identical initial conditions.

VHW Competence 1 Month after Treatment

The data collection for the post-test 1 was carried out one month following the training completion, namely in the 4th week of February to the 3rd week of March 2020. Based on the results in Table 2, the statistical test showed a difference in the mean score of each variable (p <0.05) between the control group and the treatment group after 1 month of training, except for the variable of counseling skills. The difference in mean scores stated that the collaborative model training carried out for the treatment group exhibited a higher and significant increase in scores compared to the control group which was only given booklets and leaflets as learning facilities. However, in the counseling skills variable of VHWs, there were no significant differences between groups, but the change in scores in the treatment group was greater.

VHW Competence 2 Months after Treatment

Data collection for post-test 2 was carried out two months after the training was completed, namely in the 4th week of March to the 3rd week of April 2020. For the variable of VHWs counseling skills in post-test 2, observations could not be made when the VHWs conducted counseling during the *Posyandu* activities. Observations could not be executed because of the pandemic, which resulted in the elimination of *Posyandu* activities in April.

Based on the results in Table 2, the statistical test showed a difference in the mean score of each variable (p <0.05) between the control group and the treatment group after two months of training, except for the variable counseling skills. In post-test 2, the mean score for each variable also showed that the treatment group had a significantly higher score. Just like in post-test 1, this attested that training with collaborative methods provides more optimal results when compared to only providing booklets and leaflets as learning materials for VHWs. The optimal result shows that the collaborative method/learning process is one of the suitable methods for VHW learning. Collaborative learning is an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product. The main characteristics of collaborative learning are a common task or activity in small group learning, cooperative behavior, interdependence, and individual responsibility and accountability.[30,31]

Table 2. **Average Competency Score of VHWs in Each Group**

VHW **Competence**	**Pretest**						
	Control			**Treatment**			
	Mean ± SD	**Min**	**Max**	**Mean ± SD**	**Min**	**Max**	***p***
Knowledge	68.38±10.7	45	85	68.0±10.73	40	85	0.876[1]
Attitude	71.95±4.94	62	82	71.87±4.76	62	82	0.945[1]
Self-efficacy	34.08±2.53	29	39	34.23±2.57	29	39	0.793[1]
Counselling Skills	70.38±12.31	45	90	70.13±11.12	50	90	0.924[1]
	Post Test 1						
Knowledge	71.88±11.41	50	95	79.87±11.17	60	100	0.002[1*]
Attitude	73.15±4.45	66	82	76.45±4.19	68	85	0.001[1*]
Self-efficacy	34.35±2.77	30	40	36.53±3.64	31	43	0.004[1*]
Counselling Skills	72.63±11.98	45	90	76.25±10.17	50	95	0.149[1]
	Post Test 2						
Knowledge	72.25±10.56	50	95	80.50±11.08	60	100	0.001[1*]
Attitude	73.45±4.26	66	82	76.78±4.1	69	85	0.001[1*]
Self-efficacy	34.65±2.87	30	41	37.30±3.52	31	44	<0.001[1*]
Counselling Skills	-	-	-	-	-	-	-

[1] Independent sample T-Test
*significant

Change in VHW Competence

Changes in the competence of VHWs in the control group and the treatment group were seen by comparing the mean values of pre-test, post-test 1, and post-test 2 in each group. The difference between each pair of data collection time (pre-test - post test1, post test1 - post-test 2, and pre-test - post-test 2) will also be seen in the comparison between the control group and the treatment group.

VHW Knowledge

The comparison of the mean scores of VHWs knowledge in pre-test - post-test 1 and pre-test - post-test 2 showed that there was a significant difference ($p < 0.05$) in the two groups, but there was no significant change ($p = 0.323$ and $p = 0.200$) in comparison of the mean score of post-test 1 to post-test 2. Likewise, based on the comparison of the delta score, the knowledge value of VHWs between groups ($p = 0.633$). The results of the different mean score test are in line with previous research which also showed a significant difference from pre-test to post-test 1 and from pre-test to post-test 2.[32]

Although both groups had a statistically significant mean score of knowledge, the mean final score in the treatment group was more notable than the control group. This result is also in line with other studies, although there were very significant differences in the two groups, the changes that occurred in the treatment group were much greater than in the control group.[33]

Attitude of VHWs

The comparison of the mean score of the attitude of the VHWs in the pre-test - post-test 1, post-test 1 - post-test 2, and pre-test – post-test 2 showed that there were significant differences in the two groups. Nonetheless, if you look at the mean score of the attitude of the VHWs in the post-test 1 and 2, the treatment group has a higher mean score than the control group. This event is in line with the results of previous research that the provision of nutrition education interventions for mothers of toddlers and *Posyandu* VHWs increased attitudes, the average nutritional attitude of VHWs was higher in the intervention group than in the control group.[34]

On the change in the mean score of the attitude of the VHWs, the comparison of the time pairs of data taking post-test 1– post-test 2 had insignificant results ($p = 0.662$). When viewed from the changes or deltas of each pair of data collection time, it can be seen that the most massive increment in value is in the difference between the pre-test and post-test 2 values in each group, especially the treatment group. This result is in line with other studies. From the pre-test and post-test, it can be seen that there is an increase in the mean attitude of *VHW*s in exclusive breastfeeding efforts in both groups.[33]

Table 3. Changes in Mean Score before and after Treatment

Change (delta)	Control	*p*	Treatment	*p*	*p*
VHW Knowledge					
Pre – Post1	3.5 ± 3.6	<0.001[1*]	11.87 ± 5.15	<0.001[1*]	<0.001[3*]
Post1 – Post2	0.38 ± 2.37	0.323[1]	0.62 ± 3.04	0.200[1]	0.633[3]
Pre – Post2	3.88 ± 3.49	<0.001[1*]	12.5 ± 5.31	<0.001[1*]	<0.001[3*]
Pre – Post1 – Post2		<0.001[2*]		<0.001[2*]	
Attitude of VHWs					
Pre – Post1	1.2 ± 1.36	<0.001[1*]	4.58 ± 2.01	<0.001[1*]	<0.001[3*]
Post1 – Post2	0.3 ± 0.61	0.003[1*]	0.33 ± 0.62	0.002[1*]	0.662[3]
Pre – Post2	1.5 ± 1.5	<0.001[1*]	4.9 ± 2.16	<0.001[1*]	<0.001[3*]
Pre – Post1 – Post2		<0.001[2*]		<0.001[2*]	
VHW Self Efficacy					
Pre – Post1	0.28 ± 0.75	<0.001[1*]	2.3 ± 1.45	<0.001[1*]	<0.001[3*]
Post1 – Post2	0.3 ± 0.61	0.003[1*]	0.78 ± 0.89	<0.001[1*]	0.006[3*]
Pre – Post2	0.58 ± 0.98	0.001[1*]	3.08 ± 1.69	<0.001[1*]	<0.001[3*]
Pre – Post1 – Post2		<0.001[2*]		<0.001[2*]	
Counselling Skills					
Pre – Post1	2.25 ± 2.52	<0.001[1*]	6.13 ± 3.84	<0.001[1*]	<0.001[3*]
Post1 – Post2	-	-	-	-	-
Pre – Post2	-	-	-	-	-
Pre – Post1 – Post2		-		-	

[1] paired samples t-test
[2] repeated measures
[3] Mann-Whitney
*significant

VHW Self Efficacy

The comparison of the mean scores of the VHWs self-efficacy in the pre-test - post-test 1. post-test 1 - post-test 2. and pre-test - post-test 2 explicated that there were significant differences in the two groups. Based on the results of different tests. the mean score of the VHW's self-efficacy in the two groups had a significant change. These results are in line with other studies that show a significant difference in self-efficacy scores after attending the training. However. if you look at the mean scores of the VHWs self-efficacy in the post-test 1 and 2, the treatment group had a higher mean score than the control group.[35]

Counseling Skills

The results of the comparison of the mean score of VHWs counseling skills in the pre-test and post-test 1 showed that there were significant differences in the two groups. The comparison of the mean score of VHWs' counseling skills at the pre-test or post-test 1 with the post-test 2 in the two groups was not calculated because the variables were not taken at that time.

Based on the different test results, the mean score of counseling skills of VHWs in the two groups had a significant change. If we see that the mean score of the post-test 1 treatment group has a higher mean score than the control group. But if you look back at table 1, the comparison of the mean score of the counseling skills of VHW between each group on the post-test 1 was not significant.

DISCUSSION

Collaborative Model and VHW Competence

VHW Knowledge

VHWs in the treatment group or those who received training using the collaborative method coupled with the provision of booklets and leaflets experienced a higher increase in knowledge compared to the control group who were only given booklets and leaflets. Based on the compared mean pre-post1-post2 score with statistical tests, it can be seen that there is a significant difference ($p < 0.001$) in the increase in the mean score of VHW knowledge of the two groups over time. Other research on collaborative models also shows that the condition of knowledge and understanding of learning citizens after participating in the application of collaborative learning models shows a significant increase. This condition is an indication that shows that the application of the collaborative learning model is quite powerful in increasing the knowledge and understanding of citizens in achieving optimal learning outcomes. The name social constructivism flows from the belief that learners construct their networks of knowledge by collaborating with others as they connect new information to their present knowledge and interests. Because each person is different, students come away from the same activity or lesson with different individual representations of the ideas studied.[36] Active learning like the collaborative model, providing students with opportunities to interact with people from a wide range of social, cultural, and ethnic backgrounds. It is often directed towards priority health needs and the redistribution of resources to specific populations and requires a synthesis of clinical skills, knowledge, capabilities, and attitudes.[21]

As stated in theory, health education in the short term can result in changes and increases in knowledge of individuals, groups, and society.[15] Likewise, the results of other studies stated that the lecture method training accompanied by discussions, simulations, and practices increased student knowledge in weighing toddlers at *Posyandu*.

Attitude of VHWs

Based on the compared mean pre-post1-post2 score with statistical tests, it can be seen that there is a significant difference ($p < 0.001$) in the increase in the mean score of an attitude of the VHW of the two groups over time. However, the increase in the mean value of the treatment group was greater than the control group. The significant increase in scores from pre-test to post-test 2 in the treatment group indicated that training using collaborative methods was optimal in improving VHWs' attitudes.

The increase in the attitude of VHWs in the treatment group was allegedly due to a stimulus in the form of support from the training facilitators (the University and West Bandung District Health Office), and village officials because of the cooperation. This statement is following the theory which asserts that attitude formation is determined by several elements including personal experience, the influence of others who are considered essential, cultural influences, mass media, educational institutions, and religious institutions as well as emotional influences.[37] External factors that are deliberately given can change human attitudes, so that consciously or not, the individual concerned will adopt a certain attitude.[38]

Learning methods that are considered effective for community-based health education are active and independent learning processes.[18] Collaborative learning is an educational approach to

teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product.[22] This research also combines discussion methods, role modeling, and technical guidance in the field during the training process as a stimulus to get an energetic atmosphere when VHWs receive information unlike the case with the control group, which only received material in the form of booklets and leaflets.

VHW's Self Efficacy

Based on the results of statistical tests, the mean score of the VHWs' self-efficacy in the two groups had a significant change after treatment. Also, based on the compared mean pre-post1-post2 score, it can be seen that there is a significant difference ($p < 0.001$) in the increase in the mean score of VHWs' self-efficacy of the two groups over time. This is in line with the results of previous studies, that there was a change in scores in the two groups that were significantly different. The significant results up to post-test 2 indicate that the training effect can still be felt by the experimental group when the measurement is carried out.[35]

However, if you look at the mean score of the VHWs' self-efficacy in post-test 1 and 2, the treatment group has a higher mean score than the control group. A study affirmed that training and experience have a direct effect on knowledge, self-efficacy, and skills.[39] This statement is consistent with that given to the treatment group. During the training, the facilitator provided an overview of examples of counseling in *Posyandu* activities; it presented experience for VHWs and has made it easy for them to understand and retain information.

In this case, optimal learning suggests that the ability of the learning community after they receive the learning experience changes. Learning to realize that knowledge is not something fixed or finished, but always requires further elaboration and depending on the perspective taken. This condition means that there had been an increase from the previous one or what is usually occurred, due to the innovative learning model.[40] This point can be reached by developing a learning model that can increase the learning outcomes of citizens, namely through collaborative learning models.

Counseling Skills

Based on the compared mean score of counseling skills of the control group (72.63 ± 11.98) and the treatment group (76.25 ± 10.17) in Table 1, it is found that there is no significant difference ($p = 0.149$) between these groups. Thus, although the mean score of VHW skills in the treatment group was greater, this collaborative model was not yet effective in improving VHWs' counseling skills until the first month. Although based on the compared mean pretest - post-test 1 between the control and the treatment group there was a significant difference ($p < 0.001$). This significant increase in the delta is not sufficient to describe a significant increase in VHW skills in the final results of the comparison between groups. Skills are procedural matters that require repeated practice so that they can become new reflex habits that are not easily lost.[41] The direct practice method is one method that can be used to implement skills.[42]

CONCLUSION

Collaborative methods by providing booklets and leaflets to the treatment group increased the knowledge, attitudes, and self-efficacy of VHWs more than the control group, which was only given booklets and leaflets. Collaborative methods are more effective in increasing VHWs competence so that collaborative methods can be applied as an alternative training model for VHWs. However, collaborative methods have not been able to significantly improve the counseling skills of VHWs until the first month.

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