Counseling of Infectious Diseases Related to Stunting and Its Prevention in Koroncong Village, Keroncong District, Pandeglang Regency, Banten Province

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ABSTRACT *Infectious disease is one of the direct causes of nutritional status problems in children age 0-59 months. Stunting is a chronic malnutrition problem that has received attention recently. The Koroncong village area had a total of 63 children age 0-24 months, with the incidence of stunting as many as 19 children (32%) in September 2019. Koroncong village was one of 10 locus stunting villages in Pandeglang. The purpose of this study was to increase the knowledge of mothers with children age 0-24 months about infectious diseases that contribute to disrupt child development and prevention, training cadres on how to anthropometric measurement children age 0-24 months to detect stunting. The method used One Groups Pretest-Posttest Design with counseling for mothers with children age 0-24 months and training of cadres and using total sampling for 63 mothers with children aged 0-24 months and 14 cadres. The results of research before and after counseling showed an increase in the knowledge of 50 respondents who attended, seen from the pretest and posttest mean value of 24.50 and also found p-value = 0.000 with the Wilcoxon test. There was an increase in the cadres' ability to use early detection stunting mats (p-value = 0,000) with the paired T test. The activities carried out are expected to increase knowledge and change the attitudes of mothers with children aged 0-24 months against infectious diseases related to stunting and their prevention, as well as improve cadres' skills in detecting stunting in children so that a healthy generation is created.*

Introduction

Nutritional Status Monitoring (PSG) 2017, the prevalence of stunting was 29.6% in children 0-59 months (Kemenkes RI, 2018). Basic Health Research (Riskesdas) 2018 showed 29.9% stunting in children 0-59 months in Indonesia (Riskesdas, 2018). Pandeglang Regency was one of the 100 districts that are prioritized for stunting intervention. In 2018 the prevalence of stunting in Pandeglang was 38.5% (Tim Nasional Percepatan Penanggulangan Kemiskinan, no date) with the number of children 0-59 months with stunting around 8,203. There were several villages that received special intervention such as Langensari, Koncang, Kadugadung, Bayumundu, Kadumaneuh, Pasirdurung, Koroncong, Pakuluran, Pasirkarag, and Tegalongok (Kosasih, 2019).

The most direct causes of stunting are insufficient nutrition (not eating enough growth-promoting nutrient foods) and recurrent or chronic infections or diseases that lead to poor nutrient intake, absorption or utilization (World Health Organization (WHO), 2015)

According Judd 2018, there was a bi-directional relationship between malnutrition and infection; malnourished children are at increased risk of infection, and chronic, repeat or

recurrent infections often contribute to malnutrition (Walson and Berkley, 2018). Intestinal worms may affect nutritional status through reduced digestion and absorption, chronic inflammation and loss of nutrients (Prendergast and Humphrey, 2014). In Pakistan, 205 children were found stunted with 53% suffering from intestinal worms (Din *et al.*, 2018). Research in Bangui Africa on stunting children (n = 148) found intestinal parasites in 28 children (19%) (Bata *et al.*, 2017). School-age children in Southern Angola, 145 (44.2%) children were infected with intestinal parasites out of 328 stunted children (Oliveira *et al.*, 2015). Research at the Public Health Center in Surabaya Indonesia found that 33 children were stunted with frequent diarrhea at 72.7% (Chamilia Desyant, 2017). 71 children aged 2-5 years with stunting had a history of recurrent ARI at 70.4%. Child with Infectious diseases will worsen his health condition, especially if there is a lack of nutritional intake (Salsa Bening, Ani Margawati, 2018). Ariana Weisz 2011 explained that diarrhea may be related to flatering growth which was related to nutrient malabsorption during and after a diarrhea episode. Growth failure in children with ARI and fever may be related to increased metabolic needs and decreased food intake during this time (Weisz *et al.*, 2011).

Research conducted by Indriastuti 2013 in Sleman with a research design using a pretest and posttest group and intervention with counseling reported that there was an increase in respondents' knowledge which increased by 26.36% (Indriastuti Cahyaningsih and Kristina, 2013).

This research was located in the area of the Community Health Center in Koroncong Village, Koroncong District, Pandeglang Regency, Banten Province. Koroncong Village was one of ten stunting loci in Pandeglang Regency. The Ministry of Health has designated six sub-districts in Pandeglang Regency as the locus of stunting problems caused by a lack of nutritional intake such as Koroncong, Saketi, Banjar, Sindangresmi, Cipeucang and Kaduhejo (Kosasih, 2019). Based on the profile of the Bangkonol Health Center in 2018 in September, there were 151 cases of diarrhea and 13 children with mild pneumonia. Acute respiratory infections were the most visited and diarrhea was the second most cases in Bangkonol Puskesmas. Based on initial interviews with assisted families, cadres and village midwives, all assisted families lack knowledge of correct and correct hand washing. The Koroncong Village area has

a total of 63 children aged 0-24 months, with the incidence of stunting as many as 19 children (32%) in September 2019.Thus, counseling interventions were chosen for mothers with children aged 0-24 months and training for cadres in Koroncong Village, Koroncong District, Pandeglang Regency, Banten Province.

Materials and Methods

Study population

This research was located in Koroncong Village, Pandeglang Regency, Banten Province in September 2019. Respondents were 63 mothers who had children aged 0-24 months and 14 cadres from 3 Integrated Service Posts in Koroncong Village.

Method

The counseling and training methods used were the One Group Pretest-Posttest Design which was held at the Koroncong Village Hall. The sample of this study was 63 mothers with children aged 0-24 months that came and attended counseling, and 14 cadres of integrated service posts in Koroncong Village. The activity was held in September 2019.

Data collection

Respondent data based on maternal characteristics (age, education) were collected using a questionnaire. Pretest given before counseling, and posttest given after counseling. Cadre training was assessed before and after training using a check list form.

Statistical analysis

This research was an analytical study using SPSS. Data processing in editing, coding, processing, and cleaning includes univariate and bivariate analysis using paired T test and Wilcoxon test.

Result

In this study, only 50 mothers with children 0-24 months attended the counseling. 13 people did not attend their reasons because they did not accept the invitation, there were other interests. Mean age of mothers who attended counseling was 29.08 years (min-max 19-46 years), 43 respondents were in middle education (68.3%) (Table 1). The cadres who attended had an average age of 33.29 years (min-max 23-49 years). Most of the cadres education was in middle education with 13 people (92.86%) (Table 1). Cadre training was carried out at the Village Office beside the Village Hall. There are 14 cadre training participants.

Table 1. Characteristic of Mother with child age 0-24 months and Cadres

Variables		Frequency
Mother with child age 0-24 months (N=50)		
Age (year)		
	Mean (SD)	29.08 (6.835)
	Min-Max	19-46
Education		
	Low	14 (22.2%)
	Middle	43 (68.3%)
	High	6 (9.5%)
Cadres (N=14)		
Age (year)		
	Mean (SD)	33.29 (8.45)
	Min-Max	23-49
Education		
	Low	1 (7.14%)
	Middle	13 (92.86%)

Table 2 showed that there were still many cadres who made measurement errors using early detection mats before training, such as not asking the child's age when starting activities (100%), incorrectly positioning the head (57.14%) and incorrectly the position of the officer holding the child's head (35.71%). The counseling was conducted at the Koroncong village hall and was attended by 50 mothers with children 0-24 months. The pretest and posttest had right and false answers in Table 3 There were 3 question components regarding the respondent's knowledge of diarrhea, ARI and worms, each consisting of 5 questions.

Table 2. Pretest and posttest cadres training (n=14)

Training activities	***Pre-Test***		***Post-Test***	
	TRUE	**FALSE**	**TRUE**	**FALSE**
Ask the child's age in months	0 (0%)	14 (100%)	14 (100%)	0 (0%)
Lay the child according to gender	14 (100%)	0 (0%)	14 (100%)	0 (0%)
The position of the child is supine and straight	10 (71.43%)	4 (28.57%)	14 (100%)	0 (0%)
The child's head is positioned according to the head line	6 (42.86%)	8 (57.14%)	14 (100%)	0 (0%)
Officer 1 holds the child's head with both hands and faces upwards	9 (64.29%)	5 (35.71%)	14 (100%)	0 (0%)
Officer 2 straightens both the child's legs and presses the child's knee	12 (85.71%)	2 (14.29%)	14 (100%)	0 (0%)
Officer 2 places the sole of the child's feet in a 90 degree angle facing upwards	10 (71.43%)	4 (28.57%)	14 (100%)	0 (0%)
Assess the length of the child by looking at the picture	11 (78.57%)	3 (21.43%)	14 (100%)	0 (0%)

Table 3 showed that there were still many mothers who did not understand how to make ORS (32%) and some respondents who did not understand about the prevention of ARI (14%) and risk factors for ARI (16%).

Table 3. Pretest and posttest counseling for mothers with children aged 0-24 months (n=50)

Statement	Pretest		Posttest	
	True	False	True	False
Diarrhea disease knowledge				
Handling of children who are not exclusively breastfed	48 (96%)	2 (4%)	48 (96%)	2 (4%)
Giving ORS	47 (94%)	3 (6%)	48 (96%)	2 (4%)
ORS Preparation	34 (68%)	16 (32%)	33 (66%)	17 (34%)
Prevention of Diarrhea	47 (94%)	3 (6%)	50 (100%)	0 (0%)
Definition of Diarrhea	49 (98%)	1 (2%)	49 (98%)	1 (2%)
ARI knowledge				
Smoking habit	49 (98%)	1 (2%)	49 (98%)	1 (2%)
ARI transmission	49 (98%)	1 (2%)	50 (100%)	0 (0%)
Cough Ethics	48 (96%)	2 (4%)	50 (100%)	0 (0%)
Prevention of ARI	43 (86%)	7 (14%)	50 (100%)	0 (0%)
ARD Risk Factors	42 (84%)	8 (16%)	50 (100%)	0 (0%)
Worms knowledge				
The habit of open defecation	47 (94%)	3 (6%)	50 (100%)	0 (0%)
Definition of Worms	49 (98%)	1 (2%)	50 (100%)	0 (0%)
Drugs for worms	49 (98%)	1 (2%)	50 (100%)	0 (0%)
Prevention of Worms	48 (96%)	2 (4%)	48 (96%)	2 (4%)
Cutting nails	50 (100%)	0 (0%)	50 (100%)	0 (0%)

Discussion

The results of the research from anthropometric measurement training using early detection mats of stunting using the paired T test, because the results obtained a normal distribution.

In the cadre training (Table 4) it was found that the mean difference between groups (pretest-posttest) was 2.86 and the p value = 0.000 was obtained. This shows that by providing training, the ability of all cadres to use early detection stunting mats has increased and is very good (100%). The interactive training has made it easier for cadres to determine stunting, and these mats will be used in integrated service posts for children 0-59 months later.

Table 4. Paired T Test of Training Cadres

	Mean (SD)	Mean pre-post (SD)	CI 95%	p-value
Pre-training assessment	5.14 (1.292)	2.86 (1.292)	3.603-2.111	0.000
Post-training assessment	8 (0)			

Analysis of data before and after counseling for mothers with children 0-24 months used the Wilcoxon test, because the results obtained where abnormal distribution after the normality test was performed. In the Wilcoxon test, the results are shown in Table 4.

Table 5. Wilcoxon Test of Counseling to mothers with child age 0-24 months (N=50)

	Median	p-value
	Min-Max	
Knowledge before counseling	13 (11-14)	0.000
Knowledge after counseling	15 (13-15)	

Wilcoxon Test, decrease -, 2 unchanged, 48 increase

Based on the median value, an increase was obtained from 13 to 15. The p value in this test was 0.000. The results of the analysis showed that the counseling provided regarding Knowledge of Infectious Diseases and Its Prevention, provided an increase in knowledge for almost all participants (48 people) (Table 5).

All questions regarding knowledge of worms gave an average percentage above 90% at the pretest. This showed that the knowledge of each variable in some of these aspects was very good. On the other hand, other questions regarding knowledge of diarrhea and knowledge of ARI in several aspects such as the preparation of ORS, prevention of ARI and ARI risk factors gave a percentage that was below 90%. This needs to be given more attention in providing education (counseling) so that it can be emphasized in the discussion of these aspects. It can be seen that in the knowledge about the prevention of ARI and risk factors for ARI, there was an increase in each question from 43 people (86%) and 42 people (84%) of respondents who answered correctly at the time of the pretest, to 50 people (100%) respondents who answered correctly on both questions during posttest. However, this improvement in knowledge did not occur in the question regarding ORS administration where it was found that a decrease in the number of respondents who answered correctly was from 68% to 66%. This may be because when counseling made ORS, only explanations and pictures were made, while for the preparation of ORS, it was necessary to practice directly using glasses, water and ORS, causing the respondents to fail to receive information.

The results of the mean value of the pretest and posttest, which showed a difference of more than 10 (24.50), clinically showed a significant difference in knowledge between before and after counseling (Table 6).

Table 6. Wilcoxon Test of mean mothers with child age 0-24 months (N=50)

		N	*Mean Rank*	Sum of rank
Knowledge before counseling - Knowledge after counseling	Negative rank	0[a]	0.00	0.00
	Positive rank	48[b]	24.50	1176.00
	Ties	2[c]		
	Total	50		

This proves that education can increase respondents' knowledge about diarrhea, ARI, worm disease and its prevention. According to the theory of Notoatmodjo (2007) that health education can produce changes or increase in public knowledge, so that it can change people's behavior for the better (Notoatmodjo, 2007). This is in accordance with Indriastuti's 2013 research, which reported that there was an increase in knowledge of respondents by 26.36% after being given counseling (Indriastuti Cahyaningsih and Kristina, 2013).

It is hoped that the improvement of knowledge obtained from the intervention (counseling) will be in line with the behavior of preventing infectious diseases such as diarrhea, ARI and worms in the community. There is support for alert cadres with complete equipment, as well as the ability to measure children's anthropometry quite well, participate in screening children 0-24 months and stunting.

Picture 1. Counseling activities with extension participants at the Village Hall

Picture 2. Integrated service post cadres training in Koroncong village

Conclusion

In the implementation of this community service by conducting counseling, it can be concluded that there was an increase in the knowledge of respondents about Infectious Diseases and Its Prevention Related to Stunting (p-value 0.000) with the Wilcoxon Test and there was also an increase in the ability of cadres to use stunting early detection mats (p-value 0.000) with paired T Test. However, there was material from counseling that the respondents did not really understand about the making of ORS. It is hoped that the increased knowledge of the counseling participants can be applied in daily life so that the preventive behavior of respondents in particular can be increased. Therefore, counseling in Koroncong Village, Pandeglang Regency, Banten Province which was carried out with the aim of increasing the knowledge of mothers with children 0-23 months about Infectious Diseases and Their Prevention Related to Stunting was declared successful.

Recommendations

There needs to be further interventions such as counseling on the practice of making ORS which will be taught by local health workers. Repeated counseling to refresh mother's memory about preventing stunting is important.

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References

Bata P *et al.,* 2017. 'Factors associated with stunting in healthy children aged 5 years and less living in Bangui (RCA)'.

Chamilia Desyant TSN 2017. 'The Relations Between Diarrheal Disease History and Hygiene Practices with Stunting Incidences Among Children Aged 24-59 Months in The Work Area of Puskesmas Simolawang, Surabaya', *Amerta Nutrition*, pp. 243–251. doi: 10.2473/amnt.v1i3.2017.243-251.

Din Z ud *et al.,* 2018. 'Parasitic infections, malnutrition and anemia among preschool children living in rural areas of Peshawar, Pakistan', *Nutrición Hospitalaria*, 35, pp. 1145–1152. doi: http://dx.doi.org/10.20960/nh.1685.

Indriastuti Cahyaningsih CW and Kristina SA 2013. 'Pengaruh Penyuluhan terhadap Tingkat Pengetahuan Masyarakat tentang Analgetik di Kecamatan Cangkringan Sleman', *Mutiara Medika*, 13(2), pp. 98–104. Available at: https://journal.umy.ac.id/index.php/mm/article/view/1060/1144.

Kemenkes RI 2018. 'Buletin Stunting', *Kementerian Kesehatan RI*, 301(5), pp. 1163–1178.

Kosasih E 2019. '8.203 Anak di Kabupaten Pandeglang Stunting, Bupati Irna Kerahkan 13 OPD', *BantenHits.com*, 8 August. Available at: https://bantenhits.com/2019/08/08/8-203-anak-di-kabupaten-pandeglang-stunting-bupati-irna-kerahkan-13-opd/.

Notoatmodjo S 2007. *Promosi Kesehatan dan Ilmu Perilaku*. 1st edn. Jakarta: PT Rineka Cipta.

Oliveira D *et al.,* 2015. 'Infection by Intestinal Parasites , Stunting and Anemia in School-Aged Children from', pp. 1–10. doi: 10.1371/journal.pone.0137327.

Prendergast AJ and Humphrey JH 2014. 'The stunting syndrome in developing countries'. doi:

10.1179/2046905514Y.0000000158.

Riskesdas K 2018. 'Hasil Utama Riset Kesehata Dasar (RISKESDAS)', *Journal of Physics A: Mathematical and Theoretical*, 44(8), pp. 1–200. doi: 10.1088/1751-8113/44/8/085201.

Salsa Bening, Ani Margawati AR 2018. 'Asupan Zink, Riwayat ISPA dan Pengeluaran Pangan Sebagai Faktor Resiko Stunting Pada Anak Usia 2-5 tahun di Kota Semarang', *Jurnal Gizi, Universitas Muhammadiyah Semarang*, 7, pp. 20–29. Available at: https://jurnal.unimus.ac.id/index.php/jgizi/article/view/3457/3266.

Tim Nasional Percepatan Penanggulangan Kemiskinan (no date) '100 Kabupaten/Kota Prioritas untuk Intervensi Anak Kerdil (Stunting)', 2.

Walson JL and Berkley JA 2018. 'The impact of malnutrition on childhood infections', 0. doi: 10.1097/QCO.0000000000000448.

Weisz, A. *et al.* (2011) 'The duration of diarrhea and fever is associated with growth faltering in rural Malawian children aged 6-18 months', pp. 2–5.

World Health Organization (WHO) (2015) *Stunting in a nutshell*, *Departmental news*. Available at: https://www.who.int/news/item/19-11-2015-stunting-in-a-nutshell (Accessed: 16 November 2020).