



The Effect of Counseling in Efforts to Prevent and Control Non-Communicable Diseases

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Article Info

Article History:

Submitted January 2018

Accepted March 2019

Published March 2019

Keywords:

Counseling, Knowledge, Attitude and Behavior

DOI

<https://doi.org/10.15294/kemas.v14i3.10469>

Abstract

Non-communicable diseases in Bengkulu Province has been increasing from 2007 to 2013. Integrated non-communicable disease development post (Posbindu PTM) is a platform for community participation in early detection and monitoring of risk factors in an integrated and periodic manner. Counseling on Posbindu PTM activities is one of the factor that could improve knowledge, attitude and behavior towards prevention and control of non-infectious diseases (NCDs). The study aimed to investigate the influence of counseling on the improvement of knowledge, attitude and behavior towards NCDs prevention and control. Through a quantitative research with quasi-experimental design, counseling at Posbindu PTM Damai and Padang Harapan Kota Bengkulu was conducted. The population and samples were all 32 members of Posbindu PTM. We found a difference in knowledge, attitude, and behavior before and after counseling from dependent and independent t-test analysis. The Community Health Centers (Puskesmas) need to train their cadres so that they are capable to counsel Posbindu PTM members to improve their knowledge, attitudes, and behavior towards prevention and control of NCDs.

Introductions

In Indonesia, out of the 1,551,000 death in 2012, 71% was estimated to be caused by non-communicable diseases (NCDs) which consists of cardiovascular disease (37%), cancer (13%), chronic lung disease (5%), diabetes mellitus (DM) (6%), and others (10%). The probability of early death caused by NCDs was 23% (WHO, 2015). Some risk factors for adult NCDs are tobacco consumption, alcohol consumption, hypertension, and obesity (WHO, 2014).

There is an increasing trend in NCDs (DM, stroke, cancer) prevalence in Bengkulu Province from 2007 to 2013. Healthy lifestyle

in Bengkulu province was deemed insufficient due to the fact that 37% of its residents were smokers at 2013 (Balitbangkes Kemenkes, 2013).

NCDs are caused by some risk factors: 1) tobacco consumption; 2) unhealthy diet; 3) alcohol consumption, and 4) sedentary lifestyle. Those factors are associated with four disease clusters (cardiovascular disease, cancer, chronic lung disease, and DM) and contributed to 80% of total mortality (Lozano in Hunter, 2013). Today, we are developing Posbindu PTM (integrated development station of NCDs) in Indonesia to control and prevent NCDs. Posbindu PTM

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is a form of community participation in early detection, monitoring, and early NCD risk management that is conducted independently and continuously. The main target groups are healthy people, at risk, and NCDs patients aged 15 years or older.

There were 81 Posbindu PTMs in Bengkulu City in every sub-district and held monthly activities. There were 11,628 people aged ≥ 18 years whose blood pressure was checked in Bengkulu City and 3,647 (31,36%) were diagnosed with hypertension. Out of 45,712 people aged ≥ 15 years old who came to Puskesmas, 9,791 had general check-up and 308 people (3.15%) were found to be obese (Dinas Kesehatan Kota Bengkulu, 2016). Hence, there is a need to increase the knowledge, attitude, and behavior of Posbindu PTM members towards preventing and controlling NCDs via counseling. Counseling is an effective way to improve individual's knowledge, comprehension, attitude, and behavior.

Based on the illustration above, we aimed to study about the effect of counseling to the increase the knowledge, attitude, and behavior of Posbindu PTM members for prevention and control of NCDs in Puskesmas Jalan Gedang Bengkulu City.

Methods

This study was a quantitative research using quasi-experiment design with pre-test and post-test non-equivalent control group. Quasi meant that both control and intervention group members were not selected randomly. The intervention group was given face to face counseling by research team and Puskesmas nutritionist to Posbindu PTM members about risk factors and efforts to control and prevent NCDs.

The independent variable was counseling, whereas the dependent variable were improvement in knowledge, attitude, and behavior towards NCDs control and behavior. We conducted pre-test before the counseling given. The post-test run after the counseling was delivered once monthly in Posbindu PTM for four months.

The study was held in Posbindu PTM Damai Jalan Gadang Sub-District and Posbindu PTM Padang Harapan Puskesmas Jalan Gedang Area, Gading Cempaka District, Bengkulu City. We recruited 15 persons from Posbindu PTM Damai Jalan Gedang members and 17 persons from Posbindu PTM Padang Harapan in the working area of Puskesmas Jalan Gedang Bengkulu City. All Posbindu PTM members were the samples. We used a questionnaire and observation sheet to determine the difference of knowledge, attitude, and behavior of Posbindu PTM members before and after counseling. The result was then analyzed using dependent t-test.

Results and Discussions

The mean score of respondents' knowledge, attitude, and behavior before and after counseling in Posbindu Damai, the working area of Puskesmas Jalan Gedang Bengkulu City year 2016, is shown in the table below

Based on Table 1, the mean score of respondents' behavior was 34.13 and increased to 36.40 after counseling.

According to Table 1, the first behavior measurement resulted in 25.88 points and decreased to 25.53 in last measurement.

The analysis to determine the difference in respondents' knowledge, attitude, and behavior before and after counseling to Posbindu PTM Damai members, Jalan Gedang,

Table 1. The Mean Score of Respondents' Knowledge, Attitude, and Behavior Before and After Counseling in Posbindu Damai Bengkulu City Year 2016

Place	Counseling	Knowledge	Attitude	Behavior
Counseling in Posbindu Damai	Before	37.13	24.40	34.13
	After	44.93	28.80	36.40
Assessment in Posbindu Padang Harapan	First	30.65	24.41	25.88
	Last	30.47	23.53	25.53

Tabel 2. The Mean Score of Respondents' Knowledge, Attitude, and Behavior Before and After Counseling to Posbindu Damai members in Bengkulu City Year 2016

Variables	Mean	SD	SE	p value	n
Knowledge					
Before counseling	37.13	7.11	1.83	0.000	15
After counseling	44.93	6.69	1.72		
Attitude					
Before counseling	24.4	0.98	0.25	0.000	15
After counseling	26.3	2.89	0.75		
Behavior					
Before counseling	34.13	5.68	1.46	0.002	15
After counseling	36.4	7.01	1.81		

Table 3. Mean Distribution of Respondents' Knowledge, Attitude, and Behavior in Posbindu Damai and Padang Harapan Bengkulu City Year 2016

Variables	Mean	SD	SE	p value	N
Knowledge					
Counseling (Posbindu Damai)	44.93	6.69	1.72	0.000	15
Non-Counseling (Posbindu Padang Harapan)	30.59	7.18	1.74		17
Attitude					
Counseling (Posbindu Damai)	26.33	2.89	0.74	0.028	15
Non-Conseling (Posbindu Padang Harapan)	23.53	3.82	0.92		17
Behavior					
Counseling (Posbindu Damai)	36.4	7.01	1.81	0.000	15
Non-Conseling (Posbindu Padang Harapan)	25.53	3.02	0.73		17

Bengkulu City year 2016 is shown in Table 2.

Table 2 shows the difference of mean score on knowledge before and after counseling administration was 7.8 with standard deviation (SD) 5.88. We found p-value 0.000 from a statistical test. Therefore, we concluded there was a significant difference in knowledge before and after counseling. The mean score difference on attitude between before and after counseling was 1.933 with SD 2.685. We obtained p-value 0.014, hence there was a significant difference in attitude before and after counseling. Lastly, the mean difference on behavior score before and after counseling was 2.26 with SD 2.344. The statistical test resulted in p-value 0.002, hence there was a significant difference in behavior before and after counseling.

The difference in respondents' knowledge, attitude, and behavior of Posbindu PTM Damai and Posbindu PTM Padang Harapan members Bengkulu City year 2016 is shown in Table 3.

Table 3 shows the mean score of

respondents' knowledge which given the counseling in Posbindu Damai was 44.93 with SD 6.69, whereas in non-counseling respondent on Posbindu Padang Harapan was 30.59 with SD 7.18. There was a significant difference in mean score on knowledge between Posbindu where counseling was given (Posbindu Damai) and not given (Posbindu Padang Harapan) with a p-value of 0.000.

Furthermore, the mean number of respondents' attitude who were given counseling in Posbindu Damai was 26.33 with SD 2.89, while in Posbindu Padang Harapan (not administered counseling) was 23.53 with SD 3.82. We obtained p-value 0.028, hence there was a significant difference in attitude between Posbindu Damai and Posbindu Padang Harapan.

Mean score on respondents' behavior who were given counseling in Posbindu PTM Damai was 36.4 with SD 7.01 while it was 25.53 with SD 3.02 in Posbindu Padang Harapan.

Therefore, there was a significant difference of mean behavior score between Posbindu Damai and Posbindu PTM Padang Harapan with a p-value of 0.000.

We found a significant increase in the mean score of respondents' knowledge in Posbindu PTM Damai after counseling. Counseling had an impact in controlling and preventing NCDs. This finding was similar to Lubis (2015) who stated that delivering information using a training process could improve knowledge. Mulyani (2012) explained that mothers who received postpartum counseling might have a higher probability for applying the lactation amenorrhea method compared to those who did not.

The mean knowledge score of respondents before counseling was lower than after counseling. Counseling has an advantage in focusing on a problem so that clients can solve their problems well (Sofiyana, 2013). Knowledge could also be gained from education. Basu (2017) found that lower health education resulted in lack of knowledge and there was an association between knowledge gained from health education and health-seeking behavior.

The analysis result showed a significant difference in respondents' knowledge between those who received counseling (Posbindu PTM Damai) and who did not (Posbindu PTM Padang Harapan). The mean score of Posbindu PTM Damai was 44.93 while Posbindu PTM Padang Harapan was 30.59. Providing education and raising awareness have been previously shown to change people's attitude towards diabetes. Increasing people's knowledge may lead to improvement in their attitude towards diabetes and eventually they will apply healthy lifestyle (Gagliardino, 2007). Awareness increased significantly in the intervention group compared to control group (Sharifrad, 2009).

Knowledge is a predisposing factor that could affect someone's behavior. With the correct knowledge, people will take appropriate behavior according to their belief. Someone with satisfactory knowledge on the benefit and importance of posbindu would be expected to actively attend Posbindu activities. Demaio (2013) showed that lack of health knowledge is correlated with diabetes in Mongolia. Fifty

percent of Mongolian sub-population and one fifth of the total population never heard about DM before survey was conducted. The study also exposed misunderstandings of symptoms and natural development of DM. One third of Mongolians did not realize that this disease could be prevented with lifestyle change. Disease duration also attracts a person to seek information on his/her disease. Gulabani (2008) revealed that disease duration is significantly associated with knowledge level.

Our study was in line with Ramlan (2015) who found increased mean score in the intervention group. The increase in knowledge and attitude score in the intervention group was higher than in the control group. Mulyati (2015) found that health education had a positive impact on mothers' attitude from the increased median attitude score from 44.23 to 78.85. Yu (2015) found a positive correlation between counseling and attitude change towards health among students. A study in Mongolia about knowledge, attitude, and behavior towards DM found that more than four people never received counseling. Moreover, counseling attendance was lower among males and urban area. Education status affects people's willingness to participate in counseling (Demaio, 2013).

The mean attitude score in Posbindu Damai (intervention group) was 26.33, and Posbindu Padang Harapan (control group) was 23.53. Since the p-value was 0.028 at alpha 5%, there was a significant difference between counseling and no counseling. Supportive and unsupportive attitude will be reflected from their attendance in posbindu activity; higher attendance shows supportive attitude. According to Silalahio (2016), there was a difference in nutritional knowledge before and after intervention; nutritional education increased both nutritional knowledge and diet quality among female teenagers. There was an improvement in knowledge after counseling. Parman (2014) concluded that for respondents with satisfactory knowledge but unsatisfactory attitude and practices towards hypertension, repeated health education and counseling for motivation and delivery of health education would bring a positive change in attitude and practice.

A study on health workers about their

attitude towards NCDs prevention application found that 92.7% disagreed or strongly disagreed with the statement that doctors in hospitals should not apply NCDs prevention efforts because it is part of curative services. It showed that 76.6% of respondents had favorable attitude towards NCDs prevention at school while the rest had unfavorable attitude (Wellapuli, 2015). This result was similar to Malathy (2011) who studied the effectiveness of DM counseling towards the knowledge and attitude of DM patients in Erode South India District. It was found that patients who received counseling experienced significant reduction in complication and improved blood glucose control.

The results showed a significant difference in behavior before and after counseling. It was similar to Moyer (2012) who found a significant behavior change after counseling. There was an increase in physical activity, limitation salt intake, carbohydrate and fat consumption, and also increased fiber consumption in the intervention group. The mean score of respondents' behavior in Posbindu Damai (intervention group) was 36.4 while in Posbindu Padang Harapan (control group) was 25.53. Since the p-value of 0.000, there was a significant difference in behavior between both Posbindus. According to Moyer (2012), there was an evidence about the advantage of high-intensity counseling towards behavior change to improve health status, such as reduction of blood pressure, blood lipid, and glucose tolerance in one year. Moreover, mortality rate due to NCDs also decreased. Saputri (2016) proved that motivational counseling and Short Message Service (SMS) as a reminder and motivation could improve intervention group's behavior by 50%, compared to 20% in control group (p=0.035). Lubis (2015) also stated that childhood growth monitoring training improved cadres' behavior in monitoring childhood growth.

Conclusions

Counseling can be utilized to improve the knowledge, attitude, and behavior of Posbindu PTM members towards NCDs prevention and control. There was a significant improvement in knowledge, attitude, and behavior in the intervention group compared to control

group. Counseling can be conducted during Posbindu PTM activity for members at risk for or suffer from specific diseases. The content of counseling includes efforts to prevent and control NCDs for the specific diseases.

Acknowledgments

We would like to thank the Agency for Development and Empowerment of Health Professionals (BPPSDMK) who funded our research.

References

- Basu, S., Khobragade, M., Raut, D.K., Graq S., 2017. Knowledge of Diabetes among Diabetic Patients in Government Hospitals of Delhi *International Journal Non Communicable Diseases*, 2 (1), pp. 8-10.
- Balitbangkes Kemenkes., 2013. *Riset Kesehatan Dasar (Riskesda) 2013*. Badan Penelitian dan Pengembangan Kesehatan. Jakarta.
- Demaiio, A.R., Dugee, O., Maximilian C., Enkhtuya, D.B., Oyunbileg, P., Janchiv, Meyrowitsch, W., 2013. Exploring Knowledge, Attitudes and Practices related to Diabetes in Mongolia: a National Population-Based Survey. *BMC Public Health*, 13, pp. 236.
- Dinas Kesehatan Kota Bengkulu., 2016. *Profil Kesehatan Kota Bengkulu 2015*. Dinas Kesehatan Kota Bengkulu.
- Gagliardino, J., González, C., Caporale, J., 2007. The Diabetes-related Attitudes of Health Care Professionals and Persons with Diabetes in Argentina. *Public Health*, 22(5), pp. 304-7.
- Gulabani, M., John, M., Isaac, R., 2008. Knowledge of Diabetes, its Treatment and Complications Amongst Diabetic Patients an a Tertiary Care Hospital. *Indian J Community Med*, 33, pp. 204-6.
- Hunter, D.J., Reddy, & K.S., 2013. Global Health Noncommunicable Diseases. *The New England Journal of Medicine*, 369(14).
- Lubis, Z., & Syahri, I. M., 2015. Pengetahuan dan Tindakan Kader Posyandu Dalam Pemantauan Pertumbuhan Anak Balita. *Jurnal Kesmas*, 11(1), pp. 65-73.
- Malathy, R., Narmadha, M.P., Ramesh, S., Alvin, J.M., Dinesh, B.N., 2011. Effect of a Diabetes Counseling Programme on Knowledge, Attitude and Practice among Diabetic Patients in Erode District of South India. *Journal of Young Pharmacists*, 3(1).
- Moyer, V.A., 2012. Behavioral Counseling Interventions to Promote a Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults: U.S. Preventive Services Task Force Recommendation

- Statement. *Annals of Internal Medicine*. 157(5), pp. 367-372.
- Mulyani, S., Wiryanto T. B., Ropitasari., 2012. Konseling Postpartum dan Penerapan Metode Kontrasepsi Amenore Laktasi. *Kesmas-Jurnal Kesehatan Masyarakat Nasional*, 7(3).
- Mulyati, S., Oki, S., Farisa, I. A., 2015. Pengaruh Media Film terhadap Sikap Ibu pada Deteksi Dini Kanker Servik. *Jurnal Kemas*, 11(1), pp. 16-24 .
- Parmar, P., Rathod, G.B., Rathod, S., Goyal, R., Aggarwal, S., Parikh, A. 2014. Study of Knowledge, Attitude and Practice of General Population of Gandhinagar towards Hypertension. *Int. J. Curr. Microbiol. App. Sci*, 3(8), pp. 680-685.
- Ramlan, Margawati, A., & Kartasurya, M.I., 2015. Pengaruh Konseling dan Laktasi Intensif dan Dukungan Suami terhadap Pemberian Air Susu Ibu (ASI) Eksklusif sampai Umur 1 Bulan. *Jurnal Gizi Indonesia-JGI*, 3(2), pp. 101-107.
- Saputri, Z.G., Akrom, Endang, Darmawan, E., 2016. Counseling and motivational Short Text Messages Increase Adherence and Behavioral Changes in Patient with Hypertension. *JKKI*, 7(3), pp. 87-94.
- Sharifirad, G., Entezari, Hasan, H., Aziz, K., 2009. The Effectiveness of Nutritional Education on The Knowledge of Diabetic Patients Using The Health Belief Model. *JRMS*, 14(1).
- Silalahio, V. Aritonang, E, Ashar, T., 2016. 2016. Potensi Pendidikan Gizi dalam meningkatkan Asupan Gizi pada Remaja Putri Anemia di Kota Medan. *Jurnal Kemas*, 11(2), pp. 96-102.
- Sofiyana, Noer., 2013. Perbedaan Pengetahuan, Sikap, dan Perilaku Ibu Sebelum dan Setelah Konseling pada Balita Gizi Buruk. *E-Journal Universitas Diponegoro*, 2(1), pp. 134-144.
- Wellapuli, N.T., Gunawardena, N.S., 2015. Knowledge, Attitudes and Practices of Medical Officers in Two Selected Teaching Hospitals in The Colombo District in the Application of Non-Communicable Disease Prevention Activities in the Ward Setting. *Journal of the Postgraduate Institute of Medicine*, 2(12), pp. 1-14.
- World Health Organization (WHO)., 2014. *Global Status Report on Noncommunicable Diseases 2014*.
- World Health Organization (WHO)., 2015. *Non Communicable Diseases Progress Monitoring 2015. WHO Institutional Repository*.
- Yu, Y., Yang, Y., Li, Z., Zhou, B., Zhao, Y., Yuan, S., Zhang, R., Sebranek, M., Veerman, L., Li, M., Gong, E., Chen, S., Ma, W., Huang, L., Cho, L., Leeder, S., Yan, L. 2015. The Association between Medical Students' Lifestyles and Their Attitudes Towards Preventive Counseling in Different Countries. *BMC Public Health*, 15, pp. 1124.