



Utilization of Integrated Building Post for Non-communicable Disease Patients in Ngrampal District, Sragen Regency, Central Java, Indonesia

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Abstract. Integrated Building Post (Posbindu) is a health-community resource-based to tackle non-communicable diseases provided by the Ministry of Health, Republic Indonesia. Application this program focuses on diabetes and hypertension in the population. However, community utilization to come to the Posbindu is low, particularly in the Ngrampal District. Thus, this study aims to search factors that influence the utilization of the Posbindu in Ngrampal District, Sragen Regency, Central Java Province. A cross-sectional study design with consecutive sample techniques to collect 70 respondents. Inclusion criteria are non-communicable patients, > 30 years old, who stayed in Ngrampal for more than one year, suffering from hypertension and diabetes for more than one year. Independent variables are age, gender status, level of education, occupation, knowledge level, health status, health cadre support and family support, while the outcome variable is the utilization of Posbindu. The instrument is a questionnaire to collect the information, while analysis of those variables uses chi-square and logistic regression model. The analysis found the variables associated with utilization of the Posbindu ($p = < 0.05$) unless the level of education and age of respondents ($p = 0.472; 0.339$). Meanwhile, logistic regression obtained suffering from non-communicable disease, female gender, and sufficient family support had associated with utilization the Posbindu ($p = < 0.05$; OR = 11.095, 31.309, and 74.889, respectively). Thus, the Posbindu's utilization in the Ngrampal District was influenced by health status, female patients and family support.

Keywords: Posbindu · Non-Communicable Disease · Health Status · Family Support

1 Introduction

Non-Communicable Diseases (NCDs) are diseases that are not transmitted from person to person and develop slowly. NCDs have started to dominate over infectious diseases

in recent years. NCDs caused the death of around 36 million people (43%) based on WHO report [1]. The proportion of NCDs that causes death include cardiovascular disease (39%), cancer (27%), chronic respiratory disease, gastrointestinal disease, and other NCDs (30%), and diabetes (4%) [2]. The highest prevalence of NCDs in Indonesia in 2013 was hypertension (9.5% of the total population of 722,329 people), Chronic Obstructive Pulmonary Disease (COPD) (3.7% of the population with age \geq 30 years of 508,330 people), and diabetes mellitus (2,1% of the total population) [3].

The Ministry of Health Republic Indonesia provided a health-community resource-based to tackle non-communicable diseases in the Integrated Building Post or Pos Bina Terpadu (Posbindu). Through integrated, routine, and periodic community participation in early detection and utilization of the Posbindu to screen NCDs risk factors [4]. Management of NCDs based on the Posbindu in Bantul Regency in 2015–2016 has succeeded in reducing mortality due to NCDs even though the existing Posbindu has not run optimally yet [5]. Based on the basic theory of Lawrence Green that the behaviour of a person visiting a health service place determine by three factors, namely predisposing factors (including age, occupation, education, knowledge and attitudes), enabling factors (including the availability of health facilities and distance travelled), and factors reinforcement (including family, peers, teachers, community leaders) [6]. Lestari et al. (2011) study mentioned that family support (60%), level of knowledge (69.9%), support from community leaders (53%), and cadre support (63.3%) influenced interest in visiting Posbindu [7]. Nasruddin et al., (2017) study also found a relationship between knowledge, health cadre support, and family support with the utilization of Posbindu; there was no relationship between education level, employment status, and health status [8].

However, community utilization to come to the Posbindu every month is still low, particularly in the Ngrampal district. Thus, this study aims to search whether there was an influence between gender, education, occupation, level of knowledge, health status, cadre support and family support on the utilization of Posbindu in Ngrampal District, Sragen Regency, Central Java Province. This study is critical to disclose the phenomena of the utilization of Posbindu to give an appropriate recommendation to the policymaker.

2 Method

This study is an observational approach with a cross-sectional study design. The independent variables are gender, education, occupation, level of knowledge, health status, family support and cadre support; meanwhile, the outcome variable is the utilization of Posbindu, which is measured at the same time using a questionnaire. This research was conducted at Posbindu of Ngrampal Public Health Center (Puskesmas), Sragen Regency, Central Java Province, in September 2018. The population was people who used and did not utilize Posbindu of Ngrampal Public Health Center, Sragen Regency and were more than 15 years old. The number of samples was obtained from the two-proportion formula of the minimum sample of 60 people, with $p_1 = 0.8$ and $p_2 = 0.4$ from previous studies; therefore, the researchers took 70 respondents. The sampling technique was quota sampling by consecutive sampling. The operational definition of utilizing Posbindu is a person who has come to Posbindu service and used the service at the Posbindu in the last six months.

Meanwhile, those who do not use the Posbindu are people who never come and never use the services at the Posbindu. The research instrument used is a questionnaire taken from Nasruddin's research (2017) which has been previously validated. The analysis such as descriptive, chi-square and logistic regression to search association between variables [8].

3 Result and Discussion

Table 1. Baseline characteristic of respondents (n = 70)

Variables	Category	n (%)
Age	> 55 yo	34 (48.5)
	≤ 55 yo	36 (51.4)
Gender	Male	21 (30)
	Female	49 (70)
Education level	High	32 (45.7)
	Low	38 (54.3)
Occupation	Unemployed	29 (41.4)
	Employed	41(58.6)
Knowledge level	Good	41 (58.6)
	Not good	29 (41.4)
Health status	Suffering NCD	31 (44.3)
	Not suffering NCD	39 (55.7)
Cadre support	Sufficient	34 (48.6)
	Not sufficient	36 (51.4)
Family support	Sufficient	27 (38.6)
	Not sufficient	43 (61.4)
Utilization	Yes	35 (50)
	No	35 (50)

Low education is below junior high school, high education above junior high school; working is formal or nor formal occupation, unemployed is stay at home, employed is working in formal or non-formal office; utilization is always come to Posbindu every month; NCD is non-communicable disease.

Based on Table 1, most respondents are female, have low-level education, work in the formal or non-formal office, have good knowledge, do not suffer from NCD, and lack support from cadre and family. Those data are continued to chi-square analysis to search effect size and association between variables presented in Table 2.

According to the chi-square test in Table 2, most variables are associated with utilization of Posbindu, while only the age of respondents and level of education are not.

Table 2. Association between variables with utilization of posbindu

Variables	Category	P value	OR	CI 95%
Age	> 55 yo	0.339	1.583	0.616–4.068
	≤ 55 yo			
Gender	Female	0.000	11.294	2.909–43.847
	Male			
Education level	High	0.337	0.630	0.244–1.623
	Low			
Occupation	Unemployed	0.008	3.852	1.401–10.590
	Employed			
Knowledge level	Good	0.000	9.264	3.015–28.462
	Bad			
Health status	Suffering NCD	0.001	6.469	2.256–18.548
	Not suffering NCD			
Cadre support	Sufficient	0.000	19.333	5.778–64.689
	Not sufficient			
Family support	Sufficient	0.000	23.273	5.843–92.688
	Not sufficient			

*significant level at $p < 0.05$

Table 3. Multivariate analysis utilization posbindu

Category	P value	aOR	CI 95%
Suffering NCD	0.002	11.095	2.074–59.3
Female gender	0.000	31.309	3.22–304.2
Sufficient family support	0.000	74.889	6.55–855.5

$R^2=0.72$

Therefore, they all will continue to analyze logistic regression in Table 3. This study is similar to the previous one by Sudharma et al. (2016) that level of education, knowledge, and family support have associated with the utilization of Posbindu [9]. However, gender status is not associated with the utilization of Posbindu.

Table 3 concluded that all of the variables were associated with the utilization of Posbindu in Ngrampal public health centre. This finding is essential to propose regulation, particularly family support, to ask a family member suffering from NCD to come to Posbindu as secondary prevention of NCD. This finding is similar to Putri and Andriyani (2017) study that family support plays a vital role in utilizing the Posbindu [10].

4 Discussion

Successful Posbindu program is determined by many factors such as funding support, health facilities, and human resources [11]. Concerning human resources, lack of health cadre is one of constraining of the sustainability the programs [12]. A health cadre is a person who can support every health policy and gatekeeper of the community in maintaining a healthy lifestyle. However, our study finds that health cadre support does not sufficiently encourage the community to attend the Posbindu. Since a health cadre is a person in the community who is responsible for engaging in the health program, they recruit voluntarily based on their sense of participation in the program [4]. In addition, payment allocation comes from operational health assistance in the public health centre (Puskesmas) that very limited budgeting to allocate in the Posbindu program [11]. This phenomenon likely made cadre participation is low.

The Posbindu program is focused on screening, evaluating, monitoring non-communicable diseases such as hypertension and diabetes mellitus [4]. People who are suffering from those diseases should not come to the Puskesmas for a routine health examination. Hypertension and diabetes patients have more intention to visit Posbindu than non-NCD patients. Since the program's target for NCD's patients, attending the Posbindu is one of the successful implementations [4]. Our study found that suffering NCD is associated with utilization of the Posbindu that is more useful by NCD's patients. However, our descriptive data explained that most respondents who come to Posbindu are not suffering from NCD, similar with previous study [13]. This phenomenon is likely health access in a rural area in Ngrampal District far away from Puskesmas; thus, non-NCD such respiratory infection patients used the monthly program Posbindu to visit the program.

Our study declared that education level and knowledge do not associate with the utilization of Posbindu in the linear regression [8, 9]. High education has a good level of knowledge to search health care services than low-level one [14]. Our findings elucidate that the Posbindu program in Ngrampal District has been informed in the local forum in the district. Despite most of them having low-level education, because of massive information about Posbindu in the district, people have good knowledge about its implementation. Our finding differs from a study by Sudharma et al. (2016) that education has correlated with the utilization of the Posbindu [9]. Most female gender has associated with utilization of Posbindu, and unemployed respondents have not correlated. This finding is different from Sudharma et al. (2016) that females and education levels do not associate with the utilization of Posbindu [9]; suggested that most females in the village are working as a housewife that included as unemployed in inclusion criteria.

This study has limitation because did not measure other variables such as funding support, the role of policy and regulation to support the Posbindu. Further study should be performed by qualitative method to explore details of them in disclosing that phenomena. In addition, assessment of effectiveness policy is more accurate by in-depth interview or focused group discussion. A large scale study is required to get more appropriate data with more sample size to search correlation utilization of Posbindu with other variables. Since Posbindu is a familiar program across Indonesia, a more accurate method is required. Study about NCD management is vital in reducing mortality and morbidity burden in the community such as Posbindu. This program very essential to close the

gap between health services in a rural and remote areas. However, implementation, monitoring and evaluation must conduct comprehensively to get a suitable community program.

5 Conclusion

The utilization of Posbindu in Ngrampal District in Sragen regency, Central Java Province in Indonesia has been influenced by health status suffering NCD, female gender and sufficient family support. Therefore, the government is concerned to utilize Posbindu by reinforcing Posbindu based on our findings. The strengthening role of family and community to utilize and enlarge the scope of Posbindu's implementation in the community, so that achievement of target reducing the burden of morbidity and mortality of NCD is a pivotal action to support government reaching SDG's target in the health sector.

Acknowledgment. Faculty of Medicine, Universitas Islam Indonesia, which provide funding to submit in the ICVD Conference 2021 and Public Health Center Ngrampal District, which provide data in the district office.

Author's Contribution. RR, YMT, LP, WCU and PSP were taking data, analyzing and making manuscripts in Bahasa Indonesia; AWE was taking data, analyzing and making manuscripts in both English and Bahasa Indonesia; NAOM was editing and reviewing, and SRS was guiding, supervising, additional analysis, editing, making manuscripts in English and reviewing.

References

1. World Health Organization (WHO). Global Status report on non-communicable Disease 2014. World Heal Organ. 2014;176. Access on Oct, 17, 2021. https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf
2. L. Riley, M. Cowan, Non-communicable Diseases Country Profiles. World Heal Organ. 2014. Access on Oct, 17, 2021. http://apps.who.int/iris/bitstream/handle/10665/128038/9789241507509_eng.pdf?sequence=1
3. Kementerian Kesehatan Republik Indonesia (Kemenkes RI). Profil Kesehatan Indonesia Tahun 2013. Kementerian Kesehatan RI. 2013. Access on Oct, 16, 2021. https://pusdatin.kemkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/PROFIL_KESEHA_TAN_2018_1.pdf
4. Kementerian Kesehatan Republik Indonesia (Kemenkes RI). Petunjuk Teknis Pos Pembinaan Terpadu Penyakit Tidak Menular (POSBINDU PTM). Kementerian Kesehatan RI. 2012. Access on Oct, 16, 2021. <http://p2ptm.kemkes.go.id/uploads/2016/10/Petunjuk-Teknis-Pos-Pembinaan-Terpadu-Penyakit-Tidak-Menular-POSBINDU-PTM.pdf>
5. DN. Wahyuni, Faktor-faktor yang Berhubungan dengan Kunjungan Pos Pembinaan Terpadu (Posbindu) Pada Lansia di Wilayah Kerja Puskesmas Ciputat Tahun 2017. Univ Islam Negeri Syarif Hidayatullah [Internet]. 2017. Access on Oct, 17, 2021. <https://repository.uinjkt.ac.id/dspace/bitstream/123456789/37758/1/DESY%20NUR%20WAHYUNI-FKIK.pdf>
6. S. Notoatmodjo. Ilmu Perilaku Kesehatan. Jakarta: Rineka Cipta; 2014.

7. I. Lestari, E. Hartati, M. Galuh, Faktor-Faktor Yang Mempengaruhi Minat Kunjungan Remaja Ke Posbindu Di Wilayah Tlogosari Kulon Rw 16 Kota Semarang. Karya Ilm [Internet]. 2017. Access on Oct, 18, 2021. <http://ejournal.stikestelogorejo.ac.id/index.php/ilmukeperawatan/article/view/665>
8. NR. Nasruddin, Faktor-Faktor yang Mempengaruhi Pemanfaatan Pos Pembinaan Terpadu Penyakit Tidak Menular (Posbindu PTM) di Wilayah Kerja Puskesmas Ballaparang Kota Makassar Tahun 2017. Fak Kedokt dan Ilmu Kesehat UIN Alauddin Makassar. Vol 4, pp:9–15, 2017. Access on Oct 18, 2021. <http://repositori.uin-alauddin.ac.id/6515/>
9. N. Sudharma, R. Kusumaratna, Meiyanti. Factors influence the utilization of community participation (POSBINDU). OIDA International Journal of Sustainable Development, Canada, pp:77–78, 2016. Access on Oct 15, 2021. <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html>.
10. ST. Putri, S. Andriyani. Needs and problems of posbindu program: community health volunteers perspective. IOP Conf. Series: Materials Science and Engineering, p 288, 2018. Access on Oct, 16, 2021. https://www.researchgate.net/publication/322703435_Needs_and_Problems_of_Posbindu_Program_Community_Health_Volunteers_Perspective
11. O. Oktarianita, N. Wati, H. Febriawati, A. Afriyanto. An analysis on the implementation of posbindu PTM program at Beringin Raya Community Health Center Bengkulu. Disease Prevention and Public Health Journal, vol 15, no 1, pp 1–13, 2021. <https://doi.org/10.12928/dpphj.v15i1.2841>
12. H. Dwinantoaji, S. Kanbara, M. Kinoshita, S. Yamada, H. Widyasamratri, M. Karmilah, Factors related to intentions among community health cadres to participate in flood disaster risk reduction in Semarang, Indonesia. European Journal of Molecular and Clinical Medicine, vol 7, no 10, pp1046–1063, 2020. https://ejmcm.com/article_4589.html
13. S. Sujarwoto, A. Maharani, Participation in community-based health care interventions (CBHIs) and its association with hypertension awareness, control and treatment in Indonesia. Plos One, pp 1–18, 2020. <https://doi.org/10.1371/journal.pone.0244333>.
14. O. Latunji, O. Akinyemi. Factors influencing health seeking behavior in civil servants in Ibadan, Nigeria. Ann Ib Postgrad Med, vol 16, no 1, pp 52–60, 2018. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6143883/>

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