

Analysis of Health Screening Problems at Public Health Center with an increase in NCD cases in East Java, Indonesia

Annisa Hidayati¹, Chatarina Umbul Wahyuni^{2*}, Candrajaya³

¹ Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia

² Department of Epidemiology, Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia

³ Kediri City Health Office, Indonesia

² chatrin03@yahoo.com

Abstract: *NCD cases in one city in East Java Indonesia have increased from 2017 to 2018, especially in the Southern Region City. Hypertension and Diabetes Mellitus are the two highest NCDs. Thus, health screening is secondary prevention that is important to do against NCDs' increase. This study aims to find out the priority and root which cause health screening problem and used in planning and implementing prevention of NCDs appropriately. This study was a descriptive observational study conducted in July 2019. The problem priority detected in health screening is the lack of integrated development posts that can be accessed by the community, especially time during implementation. The root cause was many targets spread over in the large area and did not have much time to participate in integrated development posts, a low number of cadres available, and a low number of health kits and infrastructure. Recommendations that can be given are strengthening intersectoral collaboration, empowering communities by initiating the formation of integrated development posts with youth cadres, and opening schedules in the afternoon to reach other targets that have high mobility, especially workers.*

Keywords: *Health Screening, Problem Priority, NCD case, Public Health Center*

1. INTRODUCTION

Epidemiological transitions, where they increase the number of degenerative diseases and decrease the number of infectious diseases, became increasingly apparent after World War II. This illustrates the change in population distribution patterns with the ones based on age, life expectancy, birth and death, as well as the cause. The increasing prevalence of the number of degenerative diseases is a sign that an epidemiological transition has occurred (1).

A total of 56.9 million global deaths in 2016 were caused by non-communicable diseases (NCD) as many as 40.5 million (71%). More than three-quarters of deaths due to NCD (31.5 million) in 2016 occurred in low to middle-income countries, with a range of 46% of deaths occurring before the age of 70 years. Four non-communicable diseases that cause global death in 2016 are cardiovascular disease with 17.9 million deaths (44%), cancer with 9 million deaths (22%), respiratory diseases including asthma and chronic obstructive pulmonary disease (COPD) of 3 million (9%), and diabetes of 1.6 million (2).

Cases of Non-Communicable Diseases in the City have increased from 2017 to 2018, including in the Public Health Center of southern region city. The data shows that there are two diseases that have the highest number of cases are hypertension and diabetes mellitus. Figure

1 shows the number of non-communicable diseases in the City and the Public Health Center of southern region city in the last two years (3).

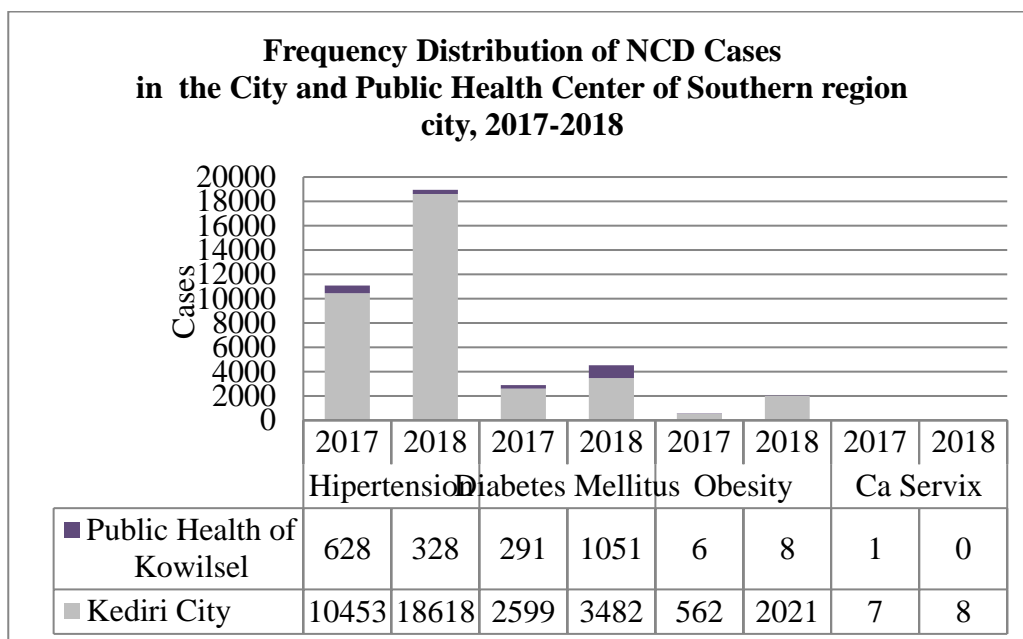


Fig. 1 Frequency Distribution of NCD Cases in the City and Public Health Center of Southern region city, 2017-2018

The figure shows that it is essential to make efforts to prevent increasing cases of non-communicable diseases. Health screening activity is one of the efforts that can be done to secondary prevention of increasing infectious disease cases. Health screening is a series of health examination activities that consist of measurements of height, weight, body mass index (BMI), blood pressure, and blood sugar checks. Afterward, for women, there are additional VIA examinations for early detection of cervical cancer. This research was conducted to find priority problems and root which cause of problems with health screening to prevent cases of non-communicable diseases carried out in the Public Health Center of Southern region city.

2. MATERIAL AND METHODS

1.1 Research design, population, sample, and variables

The design was observational descriptive with a brainwriting method in order to identify the problem of health screening in the Public Health Center of Southern region city. This research population was all of the health staff in the Public Health Center of Southern region city. The samples obtained five participants who are Head of Public Health Center, Head of administration, Coordinator for Essentials Health Program, Coordinator for Non-Communicable Diseases Program, and Coordinator for Surveillance. This research was conducted at a City of East Java on June 24 – August 9, 2019. There is no variable in this research because it observed the priority and root cause health screening problem to used in planning and implementing the prevention of Non-Communicable Diseases appropriately.

1.2 Instruments

This research uses two instruments. The first instrument in the priority determination step uses the USG assessment form. The number of problems identified with the largest total score

from the Urgency Seriousness Growth component will be the priority problem. The second instrument is a structured interview guide that will be used during interviews with relevant health workers and cadres. The data collection results from interviews will then be included in a fishbone diagram to determine the root causes of priority problems comprehensively.

1.3 Research procedures and analysis

This research was conducted in three steps: identification problem, determination problem priority, and identification root cause of problem priority. The first step is identifying a problem that used the brainwriting method. In the first stage, five participants should fill the blank paper to write their opinion about the issue that exists in the implementation of health screening in the Public Health Center of Southern region city. The second stage is determining the problem priority that used Urgency Seriousness Growth (USG) method. In this second step, participants should fill the USG form for gave score according to the priority of each problem. The last step is identifying the root cause of problem priority that used fishbone diagram analysis. In the last step, there are five elements that were analyzed on the Fishbone diagram: man, material, money, market, and method.

3. RESULTS

Problem analysis of health screening needs to be done in order to improve the performance of health centers. Afterward, health screening needs to be implemented to prevent Non-Communicable Diseases so as not increased. The first analysis was carried out by looking at the trends of most cases of Non-Communicable Diseases that were served at the Public Health Center of Southern region city. Figure 2. shows the trend in the number of cases of hypertension and diabetes mellitus that were served at the Public Health Center of Southern region city in 2017-2018. Figure 3 shows the achievements of the implementation of health screening activities at the Public Health Center of Southern region city in 2018. That figure shows as well that only 8% of the total target population of productive ages between 15-59 years are covered by health screening in the Public Health Center of Southern region city (4).

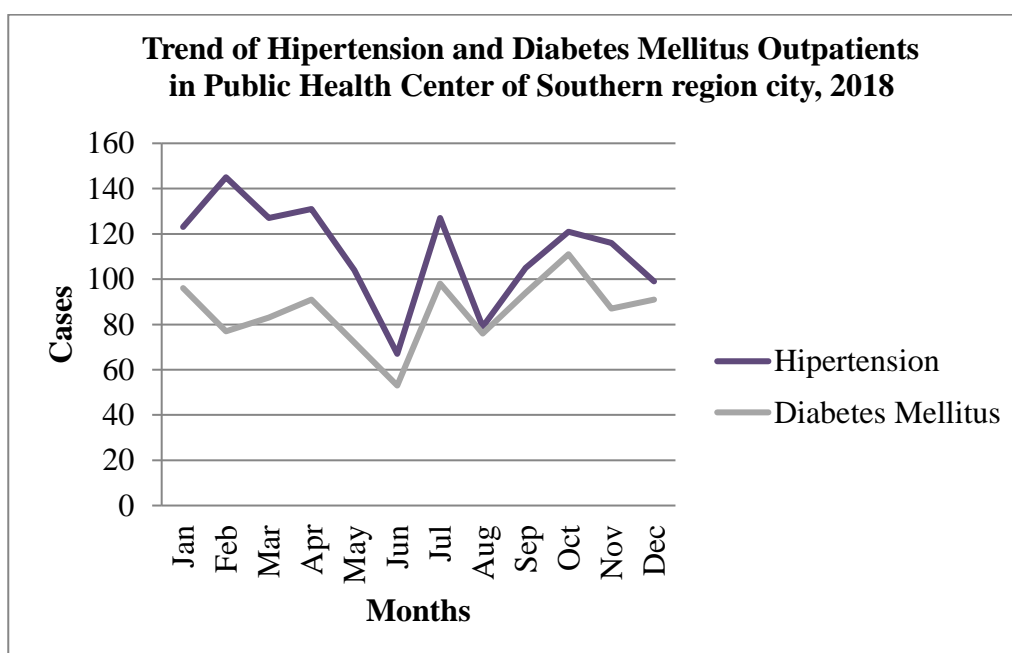


Fig.2 Trend of Hipertension and Diabetes Mellitus Outpatients in Public Health Center of Southern region city, 2018

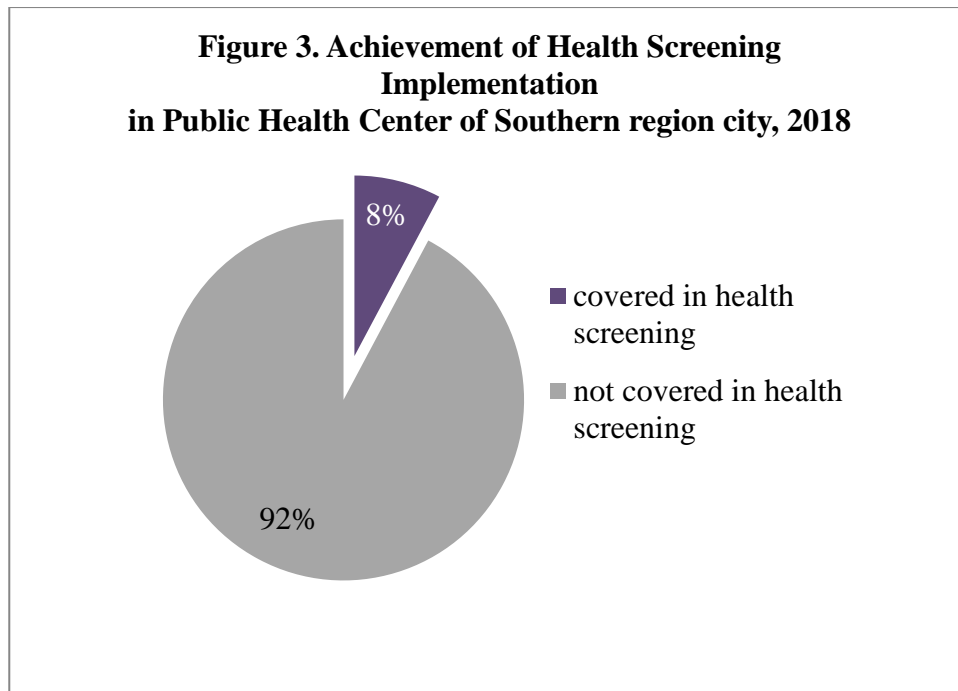


Fig. 3 Achievement of Health Screening Implementation in Public Health Center of Southern region city, 2018

Based on Figures 2 and 3, the next step is problem identification of health screening using the brainwriting method. The process of identifying was carried out by health staff which has related and part of the policy-making process at the Public Health Center of Southern region city. There are five participants from this step, which is Head of Public Health Center, Head of administration, coordinator for essentials health program, coordinator for Non-Communicable Diseases program, and coordinator for surveillance. Table 1 is the result of problem identification using the brainwriting method and determines the problem's priority using the Urgency Seriousness Growth (USG) method.

Table 1. Health Screening Problems Priority in Public Health Center of Southern region city, 2018

No	Problems	U	S	G	Total	Rank
1	Public awareness to health check of themselves is still low	20	15	12	47	2
2	Lack of integrated development post that can be accessed by the community, especially time during implementation	19	17	16	52	1
3	The community mobility is so high	17	13	13	43	3

The priority problem found is the lack of the root cause of problem which was analyzed with the fishbone diagram when the priority problems have been found.

4. DISCUSSION

Integrated development post is one of the Community-Based Health Efforts in terms of early detection and monitoring of the main risk factors of Non-Communicable Diseases which are carried out in an integrated, routine, and periodic manner. The knowledge of hypertension sufferers in utilizing integrated development post services is very important in preventing the occurrence of hypertension relapse. The utilization of integrated development posts can be carried out optimally because it does not serve infectious diseases.

The implementation of health screening in Indonesia is similar to Sri Lanka. Health screening services offered for risk factors of NCDs investigate for blood glucose, blood pressure, cholesterol, and body mass index. It also contains questions about health screening behaviors such as smoking, alcohol consumption, unhealthy diet, and physical inactivity (5).

Hypertension is a disease which is an increase in the blood pressure that gives symptoms continuing to a target organ, such as a stroke attacking the brain, and coronary heart disease attacking the vessels or heart muscle. Hypertension has become a major public health problem in Indonesia and other countries (6).

Obesity is also included as a risk factor that can be modified to prevent the increasing incidence of Non-Communicable Diseases. The prevalence of obesity and central obesity in Indonesia is 23.1% and 28%. Both have a higher prevalence in women than men. A program to improve public awareness of health is needed to prevent general health problems, including those related to Non-Communicable Diseases (7).

There is evidence that overweight and obesity influenced by the social determinant. Living in urban areas can increase the probability of being overweight and obese. It could be due to urban lifestyle typified by physical inactivity, sedentary working conditions, and high exposure to fast food. A woman, elderly, married people, and people living in a large family have a higher probability of being overweight and obese (8).

High Body Mass Index (BMI) is a major risk factor of non-communicable diseases such as cardiovascular disease, stroke, diabetes (type 2), gout, asthma, cancer, chronic kidney disease, etc. The risk for these non-communicable diseases will increase if BMI increases too. There is a relation between the prevalence rate and the attributable disease burden of high BMI. It means that the intervention, health screening programs, should be prioritized to prevent non-communicable disease (9).

The prevalence of diabetes mellitus in the productive age population in urban areas in Indonesia is 4.6%, which is divided into 1.1% previously diagnosed with diabetes mellitus and 3.5% undiagnosed. Diabetes mellitus is more common in women than in men. The risk increases with age and an increase in Body Mass Index (BMI) and a higher incidence in high socioeconomic groups. The prevalence of diabetes mellitus is higher in people with central obesity with a prevalence previously diagnosed with diabetes mellitus with obesity of 68.4%, and central obesity of 41.7%. The prevalence of undiagnosed diabetes mellitus with obesity is 68.7% and with central obesity is 43.8%. Hypertension also has a relationship with diabetes mellitus, with a prevalence of 41.4% in those previously diagnosed with diabetes mellitus and 49.4% in those who have not diabetes mellitus diagnosed (10).

Health services can be utilized as a result of the process of seeking health services both by individuals and groups. The behavior of treatment seeker is the behavior of individuals or groups or residents to carry out or seek treatment. Treatment seeking behavior in the community has different variations (culture) between one region and another (11).

Fishbone diagrams are one method that can be used to perform root cause analysis of a problem that has been found. The elements in the fishbone diagram are fishbone building factors that must be adjusted to the problem and the cause of the problem. The use of organizational elements or management systems to analyze the causes of problems can be done

to determine the root causes of the problems. Analysis of the problem of the lack of integrated development posts that can be accessed by the community, especially related to implementation time, can be analyzed with 5M elements (man, money, material, market, method) in the input step of implementing activities. The 5M element becomes the main bone in the fishbone diagram which will then look for the causes of the problems included in the five elements (12).

The root cause in the element of man was found that there were only a small number of cadres (five people per village), there were cadres who had double jobs, and cadres had never received training related to integrated development post. The root cause in the element of money was found that there was no budget for the implementation of integrated development posts, especially for cadre training, cadre fees were only small, and funding assistance from intersectoral was not optimal. The root cause in the material element was found that the number of health kits and tensimeter available was very limited. The root cause in the market element was found that the target of integrated development post was widespread in various regions and had very high mobility, the time of implementing on active workdays, and the community's low awareness to check their personal health condition. The root cause of the method element was the implementation of the integrated development post and the integrated service post for under-fives. Not all cadres had innovations to improve the performance of integrated development post services for the community.

Some root problems are detected, then the problem is solved by giving recommendations in accordance with the root problems found. Based on the root of the problems found, several alternative solutions to the problem were compiled, namely in the form of strengthening cooperation with intersectoral socialization and advocacy on the importance of early detection of non-communicable diseases, and the initiation of the formation of innovations in the form of integrated development post with youth cadres coordinating with members of the youth group. Integrated development post with this cadre of youth is expected to be able to open service in the afternoon or evening so that it can cover the target of people who have high mobility, especially workers.

Thus, it is necessary to strengthening cooperation with intersectoral socialization to improve public access to health screening services. Good collaboration between intersectoral and health in implementing of the integrated development post-initiation with youth cadres will open wider communities' access to utilize health screening services. People who have high mobility, especially workers, can conduct health checks in the integrated development post in the afternoon or evening. If the community's access to the integrated development post becomes easier, the coverage of health screening services will increase too.

5. LIMITATION OF THE STUDY

This study only explains the root causes of the low health screening outcomes at the Public Health Center of Southern region city from the point of view of the components system which is an input. The other component system in the health screening implementation was not examined. Interviews were conducted to find out the root cause of the problem only on health workers and cadres, but from the point of view of the community not yet covered.

6. CONCLUSION

The priority problem in implementing health screening at the Public Health Center of Southern region city is related to the lack of integrated development posts that can be accessed by the community, especially related to the time of implementation. The root causes of the problems found were the targets that were widespread and had limited time due to high mobility, the small number of cadres available (five people per village), and the limited number

of integrated development post and health kits available. Thus, recommendations that can be given are strengthening intersectoral collaboration and empowering communities by initiating the formation of integrated development posts with youth cadres and opening schedules in the afternoon to reach other targets with high mobility, especially workers.

7. ACKNOWLEDGEMENT

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