

## Public Health Promotion Efforts in Overcoming Diabetes in Patients of Class III Brawijaya Hospital Surabaya

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### ABSTRACT

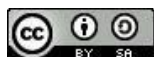
Brawijaya Hospital III Surabaya faces serious challenges due to the increasing prevalence of diabetes, requiring public health promotion efforts to address lifestyle factors, unhealthy eating habits, and lack of physical activity as the main triggers. The purpose of this community service is to promote public health in overcoming diabetes in patients of Brawijaya Hospital III Surabaya. The method used is fishbone by finding the cause and root of the problem. The results show that Brawijaya Hospital Class III Surabaya has identified the need to improve health promotion strategies through education, seminars, workshops, health campaigns, and collaboration with local governments, health institutions, and communities. The use of information technology, such as health applications, supports monitoring of diabetes patients and provides up-to-date information. The intervention plan includes education on healthy eating patterns, exercise, routine monitoring, counseling in the community, and development of digital applications for diabetes management. It is concluded that community health promotion efforts based on collaboration and technology can effectively overcome diabetes. It is recommended to strengthen cross-sector collaboration, utilize technology optimally, and implement ongoing education to encourage changes in people's lifestyles.

**Keywords:** diabetes, patients, public health promotion

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### INTRODUCTION

Diabetes is a chronic metabolic disease characterized by elevated blood glucose (or blood sugar) levels, which over time cause serious damage to the heart, blood vessels, eyes, kidneys, and nerves. Diabetes is one of the leading causes of death in the world (WHO, 2021). The International Diabetes Federation (IDF) noted that 537 million adults (aged 20-79 years) or 1 in 10 people live with diabetes worldwide. Diabetes also causes 6.7 million deaths or 1 every 5 seconds. Diabetes can be classified into several types, namely, type 1 DM, type 2 DM, gestational DM and other types of DM or other causes (IDF, 2021).

In 2021, Indonesia was in fifth place with 19.47 million people with diabetes. This figure has almost doubled in two years, compared to 2019 when Indonesia was in seventh place with 10.7 million people with diabetes, and in 2020 Indonesia was still in seventh place but there

was an increase in the number of people with diabetes reaching 18 million (IDF, 2021). The prevalence of diabetes mellitus in Indonesia in 2013 was (6.9%) and increased in 2018 to (8.5%). The prevalence of DM in West Nusa Tenggara based on doctor's diagnosis in the age group  $\geq 15$  years was 3 (0.9%) in 2013, in 2018 it increased to (1.6%) (Risikesdas NTB, 2018).

Decree of the Minister of Health Number 1114 / MENKES / SK / VII / 2005 concerning Guidelines for the Implementation of Health Promotion in the Regions, health promotion is an effort to improve community capacity through learning from, by, for and with the community, so that they can help themselves, and develop activities that are resourced by the community, in accordance with local socio-culture and supported by public policies that are health-oriented. In realizing the degree of public health, a strategic method and approach are needed, namely a health promotion strategy. Based on the WHO formulation (2021), this global health promotion strategy consists of 3 things, namely Advocacy, Social Support and Community Empowerment. The Ottawa Charter also formulated a new health promotion strategy, which includes 5 points, namely Policy Insights (Health Public Policy), Supportive Environment (Supportive Environment) Reorientation of Health Services (Reorient Health Service), Individual Skills (Personal Skill), and Community Movement (Community Action) (Susilowati, 2016). Diabetes mellitus, or better known as diabetes, is one of the chronic diseases that is increasingly worrying throughout the world. According to the IDF, in 2021, there were around 537 million adults living with diabetes, and it is estimated that this number will increase to 643 million by 2030. Indonesia itself is not immune from this problem, with the number of diabetes sufferers continuing to increase from year to year.

Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin or the body does not effectively use insulin (Indonesian Endocrinology Association, 2015; World Health Organization, 2020). Hyperglycemia is the effect of uncontrolled diabetes mellitus (DM) which causes serious damage to many body systems. DM often causes complications in the form of stroke, neuropathy, gangrene that does not heal, retinopathy and eventually kidney failure (Yushan, 2021). Maintaining a healthy weight, doing routine physical activities every day, eating healthy foods by avoiding sugar and saturated fat, avoiding smoking are lifestyles for DM sufferers that are recommended to avoid complications.

The success of diabetes management does not only depend on the medical aspect alone, but also involves the active role of the community in prevention, early detection, and disease management efforts (Ryaldi, 2016). Therefore, this activity is carried out with the aim of understanding and contributing to public health promotion efforts in overcoming diabetes in patients. DM is one of the global health problems that continues to increase in prevalence, this disease not only has a negative impact on affected individuals, but also on society as a whole. Therefore, public health promotion efforts are very important in overcoming diabetes in patients (Patonah, 2019).

Management of type 2 DM treatment is very important because this disease is chronic and does not reach a permanent cure level (Azrin, 2020). The characteristics of diabetes mellitus are metabolic disorders as a result of the effects of insulin resistance or insufficient insulin in the body. The main sign is blood sugar levels above normal limits, if blood sugar levels are excessive, hyperglycemia will occur, while if blood glucose levels decrease below normal due to excess insulin levels, it will cause hypoglycemia. Thus, if an individual experiences diabetes mellitus, complex self-management is required in order to achieve blood sugar levels within normal limits and avoid various potential complications of DM (Carrizzo et al., 2018). Health promotion is an approach that aims to improve public health through various preventive, educational, and intervention efforts that encourage individuals and communities

to adopt a healthy lifestyle (Purwaningsih). In the context of diabetes, health promotion efforts can involve various strategies and activities to increase awareness, knowledge, and healthy behaviors that can help prevent and manage diabetes.

Research conducted by Vitniawati et al. (2024) showed an increase in public knowledge from 12.8% to 25.6% and encouraged the activation of Posbindu for the elderly in Cileunyi Kulon Village. Iswahyuni et al. (2024) studied the effect of health education through blood sugar screening, education, and diabetes gymnastics on adolescents at SMK Batik 2 Surakarta with results showing positive changes in student knowledge and attitudes. Ardila et al. (2024) studied diabetes health promotion in adolescents through power point and leaflet-based socialization which increased student understanding from pre-test 59% to post-test 86%. These three studies emphasize health promotion based on education with simple media, but are different from community service at the Brawijaya Class III Hospital in Surabaya which combines patient and community education with the use of information technology (health applications) and cross-sector collaboration, which has not been found in previous studies.

Brawijaya Class III Hospital Surabaya is experiencing problems related to health promotion efforts, especially in dealing with the increasing prevalence of diabetes which creates serious challenges for the health system and society as a whole, both for the hospital and patients. Lifestyle factors, unhealthy eating habits, and lack of physical activity are the main triggers for the increase in diabetes incidents. Therefore, joint efforts are needed from various parties to overcome this problem through public health promotion. The selection of Brawijaya Class III Hospital Surabaya as the location for this community service is based on strategic considerations and the urgent need to overcome diabetes cases in this area. This hospital plays an important role as a referral facility that serves the people of Surabaya and its surroundings, making it a strategic place to implement health promotion programs. In addition, the high number of diabetes cases in Surabaya shows a gap in the public's understanding of a healthy lifestyle and effective diabetes management. The support of competent health workers and adequate infrastructure at Brawijaya Class III Hospital Surabaya is an important capital in implementing health promotion programs to increase awareness, knowledge, and healthy living behavior in the community in preventing and managing diabetes.

## **METHODS**

The study of the problem of public health promotion efforts in overcoming diabetes through community service programs at the Brawijaya III Hospital, Surabaya, using a fishbone diagram illustrates the relationship between the problem and all the causal factors that influence the problem. The fishbone diagram helps determine the root cause of the problem with a structured approach and gets ideas that can provide solutions to solving a problem so that public health promotion efforts in overcoming diabetes through community service programs at the Brawijaya III Hospital, Surabaya, can be implemented optimally, categorized using 5m, namely Measurement, Machine, Man, Method, Material with the following description:

1. Human/HR
  - a. Lack of Public Awareness about Diabetes
  - b. Lack of Participation in Diabetes Prevention Programs..
  - c. Lack of public awareness about diabetes and health promotion efforts.
2. Process
  - a. Ineffectiveness of Existing Health Promotion Programs
  - b. Effectiveness of education programs for patients and the community.
  - c. Diabetes prevention and early detection strategies

3. Environment
  - a. Environmental factors that influence diet and lifestyle.
  - b. Availability of healthy food and sports facilities around the hospital.
4. Measurement
  - a. Lack of accurate data and information about the prevalence of diabetes in the community.
  - b. Inability to effectively measure the impact of health promotion programs
5. Machine
  - a. Limited availability of medical technology for diabetes
  - b. Limited medical facilities in hospitals for diabetes-related counseling and services
6. Funds/Budget
  - a. Budget for community health promotion programs
  - b. Source of funding for medical equipment and program development

## RESULTS

### Community Service Assessment Results Area

Community service activities were carried out at the Brawijaya III Hospital in Surabaya in the study area of community service results related to community health promotion efforts in overcoming diabetes in patients. The study of community service related to health promotion efforts in overcoming diabetes in patients involved various aspects to increase public understanding and awareness. The community service team has implemented an education program that involves counseling in various levels of society, from elementary education to adult communities. In this activity, information related to healthy eating patterns, the importance of exercise, and stress management as a risk factor for diabetes has been conveyed comprehensively.

### Problem Assessment

The study of issues related to public health promotion efforts in managing diabetes in patients involves a deep understanding of the factors that influence the increasing prevalence of diabetes. One of the main problems that needs to be studied is the lack of public awareness of the risk factors and symptoms of diabetes. Limited knowledge about the importance of a healthy lifestyle and good diet can be a barrier to preventing diabetes. In addition, limited access to health services and information about diabetes is also a serious problem. Public understanding of the importance of routine check-ups and early detection of diabetes needs to be improved so that patients can immediately get the right intervention. Economic and social factors can also affect prevention efforts, because not all levels of society have the same access to health services and health information.

Public health promotion efforts in tackling diabetes must detail educational strategies that address these aspects. Community-level outreach campaigns need to be increased to raise awareness of the importance of diabetes prevention through healthy lifestyles. Collaboration with related parties, such as health institutions, local governments, and community organizations, is also key to creating an environment that supports diabetes prevention efforts.

In addressing the issue of limited access, health promotion efforts can also involve the use of information technology and social media to disseminate information about diabetes widely. School and workplace health programs can also be effective means of conveying diabetes prevention messages to the community. By detailing these issues and designing appropriate health promotion strategies, it is hoped that it can increase public understanding of diabetes, reduce risk factors, and effectively address the prevalence of this disease in the community.

The following are strategies implemented by Brawijaya Class III Hospital Surabaya to

promote health to the community:

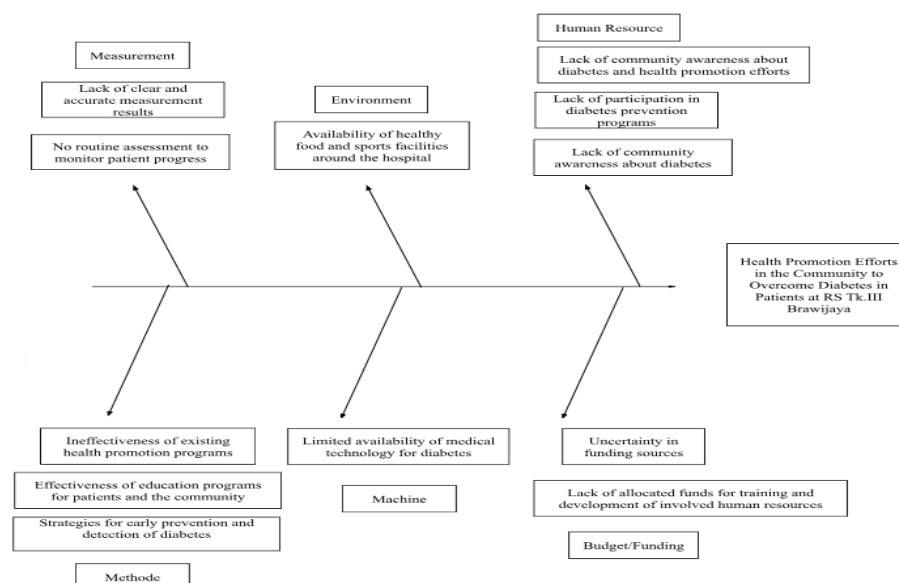
Improving Innovative, Excellent and Quality Health Services		
	2023	2024
Promotion of superior hospital service products digitally through online media and media social (website, WA, facebook, Instagram)	Promotion of Phacoemulsification's superior services, Urology Endoscopy, Rikkes Unit, (Medical Check Up) and CT-scan, Dental Panoramic through (Website, WA, Facebook, Instagram)	Promotion of superior services Phacoemulsification, Urology Endoscopy, Rikkes Unit (Medical Check Up), Oncology Surgery/Chemotherapy, Dental Panoramic and Hemodialysis through (website, WA, Facebook, Instagram)
Developing the Hospital SIM to be integrated comprehensive and optimal.	Developing, improving and integrating the Hospital SIM in the context of implementing the use of Electronic Medical Records, namely the addition of data processing devices and supporting network infrastructure for services.	Addition of processing devices data and network infrastructure supporting SIMR services

#### SIMRS

The evaluation also identified several challenges, such as high levels of awareness but lack of implementation of lifestyle changes by some patients. Additional strategies are needed to ensure sustainable adoption of lifestyle changes. This evaluation provides a basis for continuing to improve and optimize health promotion efforts in managing diabetes in hospitals, ensuring that a holistic and sustainable approach is implemented to support community health.

#### Problem Analysis

In Analyzing Problems Related to Public Health Promotion Efforts in Overcoming Diabetes in Patients of Brawijaya Hospital Level III, Surabaya. The author uses a fishbone diagram which is the result of an analysis based on a preliminary survey that has been conducted, as follows:





## DISCUSSION

### Intervention Plan

Intervention plans for public health promotion efforts to address diabetes in hospitalized patients can involve a variety of strategies and activities. Here are some steps that can be taken:

No	Issue	Priority	Intervention
1	Education and extension		<ol style="list-style-type: none"> <li>Disseminate information about diabetes, its causes, symptoms, and possible complications.</li> <li>Hold regular education sessions for patients and their families regarding diabetes management, including aspects of nutrition, exercise, and stress management.</li> <li>Form a support group or discussion forum for diabetes patients to exchange experiences and knowledge.</li> </ol>
2	Routine check-ups and early detection		<ol style="list-style-type: none"> <li>Conduct regular diabetes screening programs for local communities.</li> <li>Facilitate easy and affordable access to blood sugar screening services and other diabetes tests.</li> </ol>
3	Healthy Promotion	Lifestyle	<ol style="list-style-type: none"> <li>Promote a healthy lifestyle through regular exercise and promotion of a balanced diet.</li> <li>Invite the public to reduce consumption of sugar and high-fat foods.</li> <li>Collaboration with related parties to create an environment that supports a healthy lifestyle, for example by providing sports facilities in public areas.</li> </ol>
4	Collaboration with Local Communities		<ol style="list-style-type: none"> <li>Build partnerships with local communities, non-governmental organizations, and educational institutions to raise awareness about diabetes.</li> <li>Involve volunteers in health promotion and education activities.</li> </ol>
5	Promotional Development	Material	<ol style="list-style-type: none"> <li>Create health promotion materials that are easy to understand, engaging, and relevant, both in print and digital form.</li> <li>Utilize social media, websites, and other information technologies to disseminate diabetes-related information.</li> </ol>
6	Involvement of Health Workers		<ol style="list-style-type: none"> <li>Train health workers, including doctors, nurses, and other health workers, in providing information and support to patients with diabetes.</li> <li>Facilitate counseling to help patients manage stress and psychological burden associated with diabetes.</li> </ol>
7	Monitoring and Evaluation		<ol style="list-style-type: none"> <li>Implement a monitoring system to measure the effectiveness of health promotion programs.</li> <li>Conduct regular evaluations to assess the impact of the program and identify areas for improvement.</li> </ol>

**Implementation**

This activity was conducted at the Brawijaya Hospital III Surabaya to collect data related to community health promotion efforts in overcoming diabetes in patients. The implementation of activities during this period can be described as follows:

No	Type of activity	Execution time
1	Process of submitting a permit application to the Brawijaya Class III Hospital in Surabaya	Thursday, July 06, 2023
2	Consultation with institutional supervisor online	Monday, July 17, 2023
3	Receiving recommendation letters from Bakesbangpol also delivered to the Brawijaya Class III Hospital in Surabaya	Tuesday, July 25, 2023
4	Consultation with institutional supervisor online	Thursday, July 27, 2023
5	Consultation with institutional supervisor online	Tuesday, August 01, 2023
6	Retrieval of approval response letter as well as coordinating implementation with land supervisors	Tuesday, August 01, 2023
7	Participating in health promotion strategy counseling activities for patients identification of data needs related to diabetes patients	Tuesday, August 01, 2023
8	Participate in the extension team activities to Identification of data needs related to health promotion strategies at the Brawijaya Class III Hospital, Surabaya	Wednesday, August 02, 2023
9	Participating in activities to identify data needs related to the Reporting of the proposed program which will take place at the Brawijaya Class III Hospital, Surabaya	Thursday, August 03, 2023
10	Consultation with institutional supervisor online	Thursday, August 07, 2023
11	Consultation with institutional supervisor online	Thursday, August 18, 2023
12	Discussion with the hospital team regarding problem identification, questionnaire results, problem priorities, & interventions to be carried out	Thursday, August 24, 2023
13	Consultation with institutional and land supervisors as well as finishing the report	Saturday, September 09, 2023

**Evaluation**

The evaluation was conducted to see the efforts of public health promotion in dealing with diabetes in patients at the Brawijaya Hospital Class III Surabaya, so that with the Evaluation, it can see the efforts of public health promotion in dealing with diabetes in patients (Witdiawati et al., 2019). Evaluation of field practices regarding efforts of public health promotion in dealing with diabetes in hospitals shows that there are effective steps to increase awareness and prevention of this disease (Agustini, 2014). During field observations, it was

seen that the medical team actively provided educational information to diabetes patients regarding the importance of a healthy lifestyle, a balanced diet, and regular exercise in managing diabetes (Rasdhian et al., 2023). This education program also involves the patient's family to support the necessary lifestyle changes (Kuntari et al., 2023).

## CONCLUSION

Conclusions should be clearly stated in relation to the hypotheses and new findings. Suggestions may be added, containing recommendations on the research or input that can be used directly by the reader.

Based on the results of activities that have been carried out at the Brawijaya Class III Hospital, Surabaya, the following conclusions can be drawn:

1. Hospital RS Tk. III Brawijaya Surabaya has not fully implemented the Health promotion strategy, with health promotion activities such as seminars, workshops, and health campaigns in the surrounding community to increase understanding of diabetes. In this case, collaboration with local government, local health institutions, and the community is the key to the success of this effort.
2. The application of information technology is also seen to help in monitoring and supporting diabetes patients through health applications, providing up-to-date information, and providing psychosocial support.
3. Some intervention plans or alternative solutions that need to be implemented are as follows:
  - a. Provide education to patients and their families about diabetes, including its causes, symptoms, and management and Provide information about the importance of a healthy diet, regular exercise, and stress management in controlling diabetes.
  - b. Implementing a routine health monitoring program for diabetes patients, including monitoring blood sugar levels, blood pressure, and weight and Developing an early warning system to identify potential diabetes complications.
  - c. Designing exercise programs that are appropriate to the physical condition of diabetes patients and involving patients in physical activities that are enjoyable and accessible to various fitness levels.
  - d. Conducting community outreach activities about diabetes, including prevention and early detection and creating educational materials that are easy to understand and accessible to all levels of society.
  - e. Create an app or digital platform to help patients manage diabetes, including blood sugar tracking, medication schedules, and food guides and Provide training to patients in using the technology.

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