



REVIEW ARTICLE

Effectiveness of Fidelity Implementation of Non-Communicable Disease Prevention Promotive Program: Literature Review

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ARTICLE INFO	ABSTRACT
Received: May 13, 2024	<p>Non-communicable diseases (NCDs) are a significant global health burden. Preventive promotion programs are an important effort to overcome this problem. This study aims to evaluate the effectiveness of fidelity programs in improving healthy behaviours and lowering the risk of NCDs. Method: A systematic approach to identifying relevant literature. Searches were conducted on PubMed, Google Scholar, and ScienceDirect databases. They are using Boolean AND and OR with the keywords "fidelity program", "preventive promotive program", "non-communicable diseases", "implementation", and articles of the last five years (2018-2023). Results: Of the 550 articles identified from Pubmed (35 Articles), Google Scholar (412 Articles), and ScienceDirect (103 Articles). As many as 74 relevant articles were found, and after the sorting process, as many as 15 articles were included in this review. Conclusion: Implementing promotive and preventive programs for non-communicable diseases requires serious attention, including communication, resources, disposition, bureaucratic structure, leadership, and collaboration.</p>
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INTRODUCTION

Non-communicable diseases (NCDs) have become one of the leading causes of death in the world, including in Indonesia. NCDs, such as diabetes, hypertension, and heart disease, are closely related to behavioural risk factors, such as unhealthy diet, lack of physical activity, and smoking habits

(Maliangkay et al., 2023; Primiyani et al., 2019). Therefore, efforts to reduce the prevalence and impact of NCDs must be carried out through promotive and preventive programs.

Promotive and preventive programs are strategies designed to increase public awareness about healthy lifestyles and prevent the emergence of diseases. This approach involves a variety of interventions aimed at educating the public, improving access to health services, and facilitating healthy behaviour change. The implementation of the program is expected to contribute to reducing the burden of NCDs in the community (Yanti et al., 2019).

The implementation of a health program depends not only on good design but also on fidelity, i.e. the extent to which the program is implemented according to the initial plan. A high fidelity serves as an indicator of the quality and effectiveness of the program. However, there are often challenges in maintaining fidelity, such as lack of resource support, coordination between health workers, and low community participation in these programs (Aisyah Amini & Shofi Nilamsari, 2023; Febriyeni et al., 2022).

Various studies have shown that the success of promotive and preventive health programs is greatly influenced by the high level of fidelity in their implementation. For example, programs that involve community participation and are supported by strong policies tend to have better outcomes (Devy Febrianti et al., 2023; Febriyeni et al., 2022; Yanti et al., 2019). Therefore, an analysis of how fidelity is implemented in health programs must be done to understand the key factors influencing the program's success.

This literature review analyses various factors contributing to implementing fidelity of the promotive and preventive programs for non-communicable diseases. This research is expected to provide deeper insights into how these programs can be scaled up to achieve their health goals optimally and encourage further collaboration between stakeholders to combat non-communicable diseases.

MATERIALS AND METHODS

This study uses a systematic approach to identify relevant literature. Searches were conducted on PubMed, Google Scholar, and ScienceDirect databases. Using boolean AND and OR with keywords used include "fidelity program", "preventive promotive program", "non-communicable disease", and "implementation". Inclusion criteria include research published in the United Kingdom or Indonesia in the last five years (2018-2023) and focus on implementing fidelity programs. Exclusion criteria include not having a research journal or being in Indonesian or English.

RESULTS

Of the 550 articles identified from Pubmed data (35 Articles), Google Scholar (412 Articles), and ScienceDirect (103 Articles). Seventy-four articles were found that were relevant to the research question. At the screening stage, 35 duplicates were found; at the eligibility stage, 24 were issued because they did not meet the inclusion and exclusion criteria, and 15 articles will be reviewed.

From these 15 articles, six aspects of the study were obtained, namely the communication aspect (Juhairiyah et al., 2023; Mahardika & Utami, 2019; Maliangkay et al., 2023; Rasmussen et al., 2023; Strid et al., 2022), Resource Aspects (Juhairiyah et al., 2023; Mahardika & Utami, 2019; Maliangkay et al., 2023; Odawara et al., 2022; Partovi et al., 2022), Aspects of disposition (Juhairiyah et al., 2023; Mahardika & Utami, 2019), Aspects of the bureaucratic structure (Juhairiyah et al., 2023; Mahardika & Utami, 2019; Maliangkay et al., 2023; Partovi et al., 2022), Leadership Aspects (Meiriana et al., 2019; Suranta Ginting et al., 2024), and collaboration aspects (Anita et al., 2023; Meiriana et al., 2019; Naja et al., 2023; Partovi et al., 2022; Stewart et al., 2023; Suranta Ginting et al., 2024).

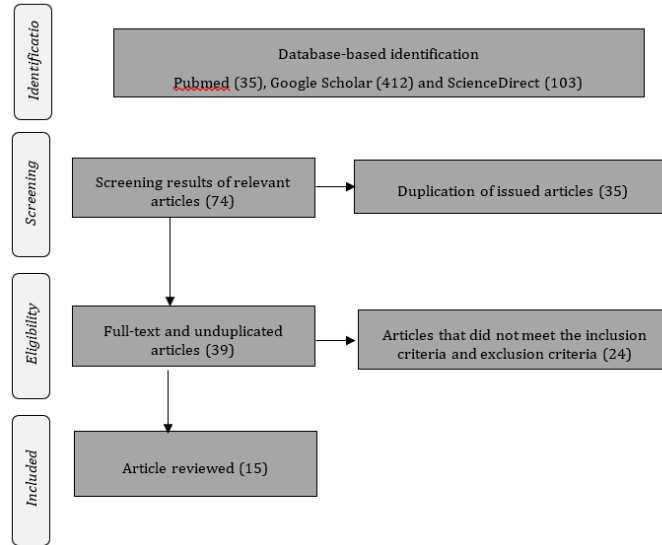


Figure 1. Flow Chart PRISMA

Table. 1 Grid Synthesis

No	Author	Metode	Results
1	(Partovi et al., 2022)	This paper utilised a qualitative approach with the conventional content analysis method to explore the challenges facing programs for preventing and controlling non-communicable diseases in Iran. The study interviewed 46 senior managers from medical sciences universities across Iran who were involved in the prevention and control of NCDs using semi-structured interviews, and the data was analysed following Graneheim and Lundman's approach.	The study conducted with 46 senior managers involved in the prevention and control of non-communicable diseases (NCDs) in Iran identified six main categories of challenges hindering the implementation of NCD programs: financing, human resources, infrastructure and inputs, legal, executive, administrative, inter-sectoral collaboration, and management and policy-making. The biggest challenge highlighted by the senior managers was financing, indicating a need for more innovative measures and strategies to strengthen Iran's healthcare system in preventing NCDs, such as empowering human resources, enhancing collaboration across sectors, and utilising evidence-based studies in policy-making and decision-making processes.
2	(Naja et al., 2023)	Community-based interventions were identified as effective methods for reducing non-communicable diseases (NCDs) in developing countries. These interventions involve engaging community members in health education and	Community-based health promotion interventions reduce non-communicable diseases (NCDs) in developing countries. These interventions involve engaging community members in health education and awareness programs, providing access to healthy foods and exercise facilities, and promoting healthy lifestyles. Effective health promotion interventions for reducing NCDs in developing countries include education, improving access to healthcare and

		awareness programs, providing access to healthy foods and exercise facilities, and promoting healthy lifestyles.	healthy food, promoting physical activity, improving water and sanitation, reducing tobacco and alcohol use, and working with communities to develop culturally appropriate strategies.
3	(Gupta et al., 2023)	The study applied the Conceptual Framework for Implementation Fidelity to assess implementation fidelity and factors moderating it across four core intervention components: patient goal setting, education topic coaching, primary care visits, and referrals to address social determinants of health (SDH).	Content adherence was high for three of the four core intervention components, with nearly 80.0% of patients setting at least one goal, having at least one primary care visit, and receiving at least one education session. The implementation site moderated adherence to various components, such as goal setting, educational coaching, number of successful CHW-patient encounters, and the percentage of patients receiving all four intervention components, highlighting the challenges in implementing complex evidence-based interventions in different settings.
4	(Odawara et al., 2022)	The study utilized qualitative methods such as interviews and focus group discussions with 15 SMEs and 20 public health nurses to gather data on health promotion activities for preventing non-communicable diseases in Japanese SMEs.	The results of the paper are presented by the Implementation Mapping (IM) task, where the program-use outcomes, performance objectives, determinants, and change objectives were identified for each implementation stage (adoption, implementation, and maintenance). The study developed sixteen strategies for implementing health promotion activities to prevent non-communicable diseases (NCDs) in Japanese small- and medium-sized enterprises (SMEs) by using the IM framework, the Consolidated Framework for Implementation Research (CFIR), social cognitive theory, and behavioural change taxonomy.
5	(Strid et al., 2022)	The study incorporates a pre-post implementation design with a control group in central Sweden's primary health care (PHC) setting. A mix of qualitative and quantitative methods.	The results of the "Act in Time" study aim to provide insights into the implementation process and effectiveness in influencing healthcare professionals (HCPs) and organisational change towards a proactive health promotion practice in primary health care (PHC). The study is supported by grants from the Research Committee in Region Orebro County, Sweden, without involvement in the design, data collection, analysis, interpretation, or manuscript writing.
6	(Stewart et al., 2023)	A mixed-methods evaluation approach was used to assess the implementation fidelity of the Stay One Step Ahead (SOSA) intervention.	Parents in intervention wards were significantly more likely to receive home safety advice from children's centre staff than those in control wards at 12 months follow-up. However, this effect was not significant at 24 months follow-up. Parents in intervention wards were more likely

			to receive home safety advice from any practitioner source (children's centre staff, health visiting teams, or family mentors) and two or more of these sources than parents in control wards at 12 and 24 months follow-up.
7	(Suranta Ginting et al., 2024)	Education campaigns through mass media, social media, and community events to disseminate important information about healthy lifestyles, disease prevention, and the importance of early detection.	Positive behavioural changes observed in the community include increased consumption of healthy foods, decreased smoking and excessive alcohol consumption, and increased physical activity. Improved public health outcomes, including increased awareness of the importance of regular health check-ups, leading to early detection of non-communicable diseases and more effective management.
8	(Rasmussen et al., 2023)	Data collection methods included a survey of 398 employees, a focus group of four employees, and two-day field visits, with subsequent separate data analysis and integration through triangulation.	The study found that the policy component of the smoke-free workplace intervention had high implementation fidelity despite some compliance issues. However, the smoking cessation support component had low implementation fidelity, indicating a need for better communication, compliance, and enforcement strategies to improve implementation in this area.
9	(Juhairiyah et al., 2023)	The study utilized a quantitative approach with an analytic observation design and a cross-sectional approach. Data was collected through primary sources by conducting interviews using a questionnaire with 49 questions focusing on communication, disposition, resource, bureaucratic structure, and policy context variables.	The study found that the four factors of communication, disposition, resource, and bureaucratic structure together affected the implementation of close contact tracing of COVID-19 in Banjar Regency by 51.8%. After introducing the policy context variable as a moderator, the effect increased to 55.7%. In the partial variable test, it was observed that there was no significant effect on the resource factor alone. However, after considering the interaction of the moderator variable in the policy context, there was a significant p-value of 0.036 on the resource variable, indicating its importance in the implementation process.
10	(Kühn et al., 2022)	The observational study was based on data from a three-wave survey of 312 participating physicians in the ARena program and attendance documentation.	The study demonstrated high fidelity to the implementation program, with overall high persistence of participation in the intervention components across the three arms, delivery of 96.4% of planned quality circles, and 84% of practices receiving a performance-based additional bonus payment at least once. Participants' views on the implementation were associated with the degree of intervention fidelity, where views on participant responsiveness and context affected additional bonus payment, and views on participant responsiveness, context, and culture of shared

			decision-making affected quality circle attendance.
11	(Saarijärvi et al., 2022)	The study utilized a mixed methods design, combining qualitative and quantitative.	Out of the 67 adolescents randomised to the intervention group, only 59 were included in the analysis and results after eight dropped out before the first implementation step. Six out of eight components of the transition program were delivered to the extent that they adhered to the program theory or achieved a high level of fidelity, with components involving peer support having a low attendance rate by the participating sample (32.2%).
12	(Guerbaai et al., 2023)	The study utilized a mixed-methods convergent/triangulation design to investigate the influence of implementation fidelity on unplanned transfers from nursing homes.	A higher overall fidelity score to the INTERCARE model was associated with a decreasing rate of unplanned hospital transfers post-intervention (OR: 0.65 (CI = 0.43-0.99), p = 0.047). Higher fidelity to advance care planning within the INTERCARE model was linked to lower rates of unplanned transfers (OR = 0.24 (CI 0.13-0.44), p < 0.001), while lower fidelity to communication tools like ISBAR was associated with higher rates of unplanned transfers (OR = 1.69 (CI 1.30-2.19), p < 0.003).
13	(Anita et al., 2023)	The method used in this study, a case study using a qualitative method of descriptive design; data is compiled by conducting structured interviews	The results of this study show that the implementation of the Posbindu PTM program at the Muara Pinang Inpatient Health Center, Empat Lawang Regency, is by the stages that have been set by the Minister of Health, starting from the registration stage, interviews, height and weight measurement, blood pressure checks and also the identification of NCD risk factors.
14	(Mahardika & Utami, 2019)	This study uses a descriptive qualitative approach. Data collection was carried out using observation, interview, and documentation techniques.	The research results on implementing prevention programs for non-communicable diseases have yet to be maximised. This happens due to problems with Resources, Communication, Disposition, and Bureaucratic Structure.
15	(Meiriana et al., 2019)	This research is qualitative and uses a case study strategy. The research subjects were 18 informants who were selected using purposive techniques. Data analysis was carried out based on inductive logic obtained from in-depth interviews.	The health centre limits the participation of proteins because of doubts about controlling to come every month routinely. The health centre held prolonged activities that were not routinely carried out, namely gymnastics and home visits. It is necessary to procure training to improve officers' skills and update knowledge. Patient compliance needs to increase awareness by regularly conducting educational activities in the health centre area. Puskesmas are expected to be more able to carry out promotive and preventive activities.

DISCUSSION

There are six aspects of the study obtained, namely the communication aspect, Resource Aspects, Aspects of disposition, Aspects of the bureaucratic structure, Leadership Aspects, and collaboration aspects

Communication

Effective communication is the key to the successful implementation of health programs. Various studies have supported this. The "Act in Time" research shows that effective communication can drive a change in more proactive health promotion practices in primary healthcare (Strid et al., 2022). Other research highlights the importance of better communication strategies to improve adherence to workplace interventions, signalling that communication problems often hinder program success (Rasmussen et al., 2023). In addition, effective communication between various parties is the key to success (Juhairiyah et al., 2023). Obstacles in implementing non-communicable disease prevention programs are often related to communication problems, where the inability to convey information clearly can hinder the program's effectiveness (Mahardika & Utami, 2019). Good communication and regular education to patients are essential to increase patient awareness and compliance (Meiriana et al., 2019)

Communication is key in implementing health programs, including NCD prevention programs. Delivering clear and effective information to all stakeholders, including health workers, the community, and the government, can increase awareness and understanding of NCDs. Lack of good communication can result in information gaps that hinder public participation (Herawati & Sofiatin, 2021).

Resources

Based on various studies, the availability and management of resources are crucial factors in successfully implementing health programs. Resource constraints are often a major challenge, whether it's a non-communicable disease (NCD) program or health promotion in the workplace.

The research results consistently show that adequate financing is essential to run the program effectively. Budget constraints can hinder the implementation of program activities, such as training, provision of medical equipment, and health campaigns. Competent human resources are a valuable asset in the implementation of health programs. Health workers who are trained and have sufficient knowledge will be able to provide quality and effective services. Optimal utilization of resources through the right strategy can overcome limitations (Juhairiyah et al., 2023; Mahardika & Utami, 2019; Maliangkay et al., 2023; Odawara et al., 2022; Partovi et al., 2022)

Resources, both human and financial, greatly influence the success of program implementation. The availability of training for health workers and an adequate budget can support the effectiveness of promotive programs (Bhatt et al., 2023; Patil et al., 2022). Without sufficient resources, health programs tend not to run optimally, causing the expected results not to be achieved (Mak et al., 2022).

Disposition

Dispositions, which include the attitudes, motivations, and behaviours of individuals involved in health programs, play a crucial role in successful implementation. Research shows that a positive and supportive disposition can promote program success, while a negative disposition can hinder achieving program goals. The results of the study provide a clear picture of the importance of disposition in the context of health programs (Juhairiyah et al., 2023; Mahardika & Utami, 2019). Both studies show that positive and proactive attitudes from health workers and related parties can increase program effectiveness. Individuals with a positive attitude towards the program are more excited and motivated to perform their tasks well. A less supportive disposition can hinder the

success of the program. Negative attitudes, lack of motivation, or resistance to change can hinder the program's implementation and reduce its effectiveness.

The disposition or attitude of the program implementers towards implementation greatly affects the final result. A positive attitude towards the program and a commitment to achieving public health goals can encourage more proactive behavior in the implementation of the program (Ramani-Chander et al., 2023). Conversely, scepticism or apathy can hinder the efforts made in the program (Jeet et al., 2017).

Bureaucratic Structure

The bureaucratic structure, which includes rules, procedures, hierarchy, and division of tasks within an organization, has a significant role in successfully implementing health programs. Research shows that a good bureaucratic structure can facilitate program implementation, while a rigid or inefficient structure can be an obstacle.

The study results show that 1) the rigid bureaucratic structure can hinder the flexibility and adaptation of programs to changing conditions. Too convoluted bureaucracy can slow down the decision-making process and program implementation. 2) Clear policies and procedures are essential to provide clear guidance for health workers in implementing the program. Ineffective procedures can lead to confusion and reduce efficiency. 3) Coordination between various levels of bureaucracy is very important to ensure the smooth implementation of the program. Lack of coordination can lead to duplication of efforts and inefficiencies. 4) Good budget planning and proper allocation of resources are essential to support the program's implementation. A supportive bureaucratic structure can facilitate the planning and budgeting process (Juhairiyah et al., 2023; Mahardika & Utami, 2019; Maliangkay et al., 2023; Partovi et al., 2022).

A clear and efficient bureaucratic structure can facilitate the implementation of health programs. In many cases, complex bureaucratic structures lead to delays in decision-making and program implementation (Donohue et al., 2023). It is important to identify and reduce bureaucratic barriers that can hinder program effectiveness (Novikova et al., 2023).

Leadership

Leadership plays a very crucial role in the successful implementation of health programs. Both at the community level and in health facilities such as health centres, effective leadership can drive positive change and improve health outcomes (Meiriana et al., 2019; Suranta Ginting et al., 2024).

Effective leaders can motivate members to change their behaviours for healthier, for example, by adopting an active lifestyle or eating a nutritious diet and helping to identify and mobilise the resources needed to support the implementation of health programmes (Suranta Ginting et al., 2024).

Strong leadership in the Health Center can ensure that health programs run regularly and effectively. Competent leaders can provide training and guidance to healthcare workers to improve their skills and knowledge and facilitate an effective decision-making process in the face of various challenges in program implementation (Meiriana et al., 2019).

Strong and visionary leadership is important in implementing promotive and preventive programs. Leaders who can inspire and motivate staff and other stakeholders to actively participate in the program can improve overall performance (Nittari et al., 2019; Novikova et al., 2023). Good leadership also includes creating healthy collaboration between the parties involved.

Collaboration

Collaboration emerged as a key factor in the successful implementation of health programs. Whether it's collaboration between sectors, communities, or various programs within one institution, good cooperation has been proven to increase the effectiveness and reach of programs.

Cross-sectoral collaboration, such as health, education, and social, is essential to address complex health issues such as non-communicable diseases (NCDs). This cooperation allows for a wider utilization of resources and a more comprehensive approach (Partovi et al., 2022). Actively involving the community in the planning and implementation of health programs has proven to be effective. Collaboration with communities makes health programs more relevant to community needs and increases program participation and sustainability.(Naja et al., 2023; Stewart et al., 2023; Suranta Ginting et al., 2024). Good coordination between various units or programs within one institution, such as the Health Center, is very important to ensure the smooth implementation of the program. This collaboration allows for more efficient utilization of resources and avoids duplication of efforts (Anita et al., 2023; Meiriana et al., 2019).

Collaboration between institutions, sectors, and communities is a determining factor in successfully implementing health programs. Good cooperation can facilitate the exchange of resources, ideas, and best practices that support promotive and preventive programs (Novikova et al., 2023; Oli et al., 2022). Health programs that involve multiple stakeholders tend to be more effective in achieving disease prevention goals(Novikova et al., 2023).

CONCLUSION

Implementing promotive and preventive programs for non-communicable diseases requires serious attention, including communication, resources, disposition, bureaucratic structure, leadership, and collaboration. Increasing the effectiveness of this program will have a direct impact on NCD prevention and control efforts, as well as improving overall public health. The involvement of all parties and consistent government and community support is needed to achieve this goal.

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