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Strategy for Improving Smoking Cessation Services in Primary Health Care

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ABSTRACT

Amidst the rising numbers of smokers in Indonesia and the increasing burden of smoking-related diseases on the country, the Smoking Cessation Services (SCS) still fail to operate optimally. The aim of this research is to develop a more effective strategy for the SCS model based on the challenges encountered during its implementation. The research method employed qualitative study with a case study approach. The research location was in Depok City, chosen as a national exemplary of SCS. Research period from February to May 2024. Data collection was conducted through in-depth interviews and observations at Community Health Centers who involved in SCS including health professionals, health promotors, and managers. The findings indicate that the SCS is not yet optimal due to insufficiently trained staff, low patient turnout, and failure to achieve the target quit rate. The services still focus on counseling and have not yet incorporated pharmacotherapy. The research concludes that short-term alternative strategies include follow-up calls to patients, establishing telecommunication groups with patients, and reaching out to new patients through schools, while long-term strategies such as program integration and building a telemedicine information system could be implemented to enhance patient visits.

1. Introduction

It is estimated that during 2019, the Social Security Organizing Agency (BPJS) for Health covered 10.5 - 15.5 trillion Rupiah or around 56-59% of the total healthcare costs for smoking-related diseases, which reached 17.9 - 27.6 trillion (Meilissa et al., 2022). Another study mentions the macroeconomic losses due to cigarette consumption in Indonesia in 2015 reached nearly 600 trillion (Kasri et al., 2020). This is due to various non-communicable diseases caused by smoking behavior or exposure to smoke among non-smokers. The highest cause is cardiovascular diseases including stroke and ischemic heart disease, followed by diabetes, and cancer. Studies also reveal that the increased number of cigarettes sticks further increases the certainty of cancer cell emergence (Hartono et al., 2019). Additionally, significant losses due to smoking occur because cigarette consumption disrupts child growth and development, including causing stunting (Bella et al., 2023).

The Basic Health Research (Riskesdas) indicates an increasingly worrying prevalence of smokers reaching 33.8% in 2018 (National Institute of Health Research and Development, 2018). Furthermore, the prevalence of smokers among children aged 10-18 years increased from 7.2% (2013) to 9.1% in 2018 (National Institute of Health Research and Development, 2018). Ironically, according to data from the Central Statistics Agency (2019), cigarettes are

the second-largest consumption after rice in poor households (Central Bureau of Statistics, 2019). The use of electronic cigarettes has also increased tenfold from 0.3% (2011) to 3.0% in 2021 (Centers for Disease Control & World Health Organization, 2021). Cigarettes are still easily accessible, including to children.

One simple method to promote smoking cessation is the ABC method. The abbreviation ABC stands for ask (inquiring to identify smokers), brief advice (providing brief advice on every visit to quit smoking or to continue cessation conditions), and cessation support (smoking cessation support). This effective smoking cessation service method is also part of the MPOWER strategy long developed by the World Health Organization (WHO) to control smoking prevalence (World Health Organization, 2008).

Indonesia already implemented SCS firstly in hospitals involving multidisciplinary specialists since 2008. This service then evolved into a Quitline for smoking cessation, which started in 2016. In support of the Healthy Living Community Movement (GERMAS), SCS has also been applied in community health centers. The implementation of SCS in Depok City began in 2021, facing various challenges identified in this study. These services can be utilized by smokers for free as they are funded by the Government. Depok City is one of the cities that already has 38 SCS at Community Health Services. Depok City is also one of the national exemplary cities in efforts to control cigarette consumption, including implementing Smoke-Free Areas and SCS.

Despite being part of the national exemplary, SCS in Depok City has not yet operated optimally. Preliminary study results, SCS encountered implementation obstacles. SCS is still part of the development unit, not open every day, still has few patients, they already have serious illnesses, and the target for beginner smokers to quit smoking is not achieved. Furthermore, the number of adult and adolescent smokers continues to increase in Depok City.

Cases in Java Island also found that many healthcare personnel still smoke (Misnaniarti et al., 2023). Cigarettes contain nicotine, which is an addictive substance, making it difficult for users to quit even after being educated about its future adverse effects (Hartono et al., 2019). If left unchecked, the number of smokers, including child smokers, will become even more worrying, compounded by the future adverse health effects. The aim of this research is to develop a more effective strategy for the SCS model based on the challenges encountered during its implementation.

2. Method

This research is a qualitative study with a case study approach. The scope of the research includes evaluating the barriers of SCS and alternative strategies that can be implemented. The research was conducted in Depok City, where there are 38 Community Health Centers providing SCS. Data for this study was collected from two healthcare services locations: Puskesmas Kemirimuka located in the city center, which has the highest patient visits, approximately 10-15 patients per week, and Puskesmas Pancoran Mas with the least visits (6-8 patients per week). The research period lasted from January to March 2024.

Data collection was obtained through in-depth interviews with the healthcare professionals (doctors, nurses, midwives, pharmacists), health promotion officers, and managers in both Puskesmas. Observations were also conducted to observe and evaluate the

SCS process flow. Data validation was carried out through source triangulation among informants and triangulation between interview and observation results.

The research procedure began with the development of in-depth interview guidelines addressing the identified problem gaps with designated informants. These guidelines were also developed based on research findings related to SCS in various countries. Research variables were established using a systemic approach to address management issues, comprising input, process, and output. Input components examined in this study include personnel, facilities and infrastructure, methods, and funding for SCS. Process components consist of planning, the actual execution process of SCS, monitoring, evaluation, and follow-up. Output components highlight aspects such as the number of visits, patient revisit rates, progress in reducing smoking, cessation of smoking behavior, and the magnitude of the quit rate. Alternative strategies for unachieved output were sought.

Data obtained from in-depth interviews and observations were then transcribed and data reduction was performed. Reduction involved creating matrices of interview and observation results, supplemented with regulations and guidelines from the Ministry of Health. Data reduction and analysis were conducted using NVivo application, while data analysis was done using Microsoft Visio. The flow model was not only created but also further refined based on confirmation from informants. Gap data on problems and barriers in SCS were presented in interview excerpts and displayed with observation photos validated through triangulation. Follow-up actions from the flow were presented in solution tables and narratively.

3. Result and Discussion

The characteristics of research informants are presented in Table 1. There are personnel who have held their positions for less than a year. Interviews were conducted with the manager, who is responsible for policymaking. Most informants are young and productive.

Table 1. Informant Characteristics

Informant	Age (Years)	Gender	Position	Years in Position	Education Level
if1	26	Woman	Doctor	3 weeks	Doctor
if2	44	Woman	Pharmacy	14 years	Pharmacist
if3	49	Woman	Manager	18 years	Doctor
if4	30	Woman	Nurse	4 years	Nurse
if5	25	Woman	Health promotion	10 months	Public Health
if6	24	Man	Health promotion	3 years	Academic
if7	37	Woman	Midwife	3 years	Midwifery
if8	25	Woman	Pharmacy	1 month	Pharmacy
if9	47	Woman	Doctor	8 months	Doctor
if10	57	Woman	Manager	2 years	Doctor
if11	56	Woman	Nurse	33 Years	Academic

Source: Primary Data, 2024

3.1 Input

3.3.1 Health Personnel

According to the explanation of most informants, they have an issue of the shortage of personnel and inexperienced personnel who are not yet familiar with SCS.

"The limitation of personnel is still a problem." (if6) (if11)

"I don't know much here yet because I'm still new." (if8) (if9)

"We hope the Health Department provides additional team personnel" (if5)

Health personnel have not received much training related to SCS. All personnel hope to receive training. They also expect health cadres to receive persuasive training too.

"Here, only one doctor has been trained in SCS and it was conducted online" (if3)

"We haven't received any training yet." (if2) (if5) (if6)

"Training should not only be for health personnel but also for cadres." (if7)

Health Centers lack specialized personnel for SCS. Furthermore, existing personnel, some of whom are still new, lack adequate training. Similar conditions occur in Vietnam, which faces barriers such as inadequate training and limited time for SCS due to not being a national priority agenda (Shelley et al., 2014). The implementation of smoking cessation efforts should be uniform and integrated at the national level. This recommendation has not been implemented in Indonesia yet. Best practices in developed countries, essential capabilities for SCS team personnel include psychological abilities, knowledge, pharmacotherapy, motivational abilities, and cultivating positive patient testimonials (Gould et al., 2017). These are skills that SCS team personnel should possess.

3.3.2 Facilities

The facilities available for providing SCS are adequate. SCS already has a place for counseling with patients, a CO-analyzer, and educational tools. These facilities are in accordance with the UBM service standards organized at the Puskesmas. However, there are still some pre-facilities perceived by the personnel to be lacking. These include a shortage of co-analyzer straws, facilities for SCS-specific drugs or Nicotine Replacement Therapy (NRT), insufficient leaflets to be distributed to the public, and facilities for social media education. The equipment has not been calibrated yet because it is still relatively new since 2021. NRT plays a significant role in supporting the success of smoking cessation by alleviating the symptoms associated with nicotine withdrawal. However, it is not yet widely available at health centers, including those in Depok.

"The facilities are good, but there is still a shortage of co-analyzer straws." (if6)

"Perhaps regarding those leaflets, sometimes we have to procure them ourselves and haven't been facilitated yet." (if6) (if7)

"There has been no calibration because the equipment is still new or once a year." (if2) (if11)

Medications are also not widely available. The availability of drugs is more focused on vitamins and patient's disease. For example, medications for hypertensive and diabetic smokers. There is no medication to encourage patients to quit smoking.

"If there are drugs, it's mostly vitamins." (if5) (if7) (if8)

"If the patient has high blood pressure, they use amlodipine; if the side effects are high sugar, then metformin, limipirin, and others, such as cough medicine." (if9)

Source: Primary Data, 2024

Figure 1. Waiting Room (Left) and Patient Screening Room (Right)

3.3.3 Funding

Funding for SCS comes from the Regional Revenue and Expenditure Budget as well as from the central government. This funding is mostly used for activities outside the building, such as screening at schools.

"The SCS activities themselves are usually funded from operational costs, usually in Puskesmas, it's from the Health Operational Assistance, and there is only one activity, and that is UBM screening at schools." (if3) (if4) (if10)

Regarding funding, operational SCS primarily rely on funding from local governments or central funding. Funding sourced from the community may render SCS inadequate (Darmawan & Azni, 2022). Therefore, sustainability issues in funding become one of the future challenges. Alternative funding through cigarette tax for SCS operations has been practiced in other countries (World Health Organization, 2016). Indonesia has Regional Health Tax Budgets and local cigarette taxes that could be additional funding sources for SCS operations both inside and outside the facility. Such as procurement of pharmacotherapy, supplementary counseling services, and patient flow digitization. This requires strong commitment from the Governments.

3.2 Process

The SCS only takes place on 2 working days per week. The service runs from 07:00 to 14:00. The SCS process begins with patient registration. Patients then undergo screening by nurses related to smoking behavior and patient conditions. After that, patients are tested using a co-analyzer to determine the level of CO in their lungs. The higher the CO level, the more cigarettes the patient has inhaled. Patients receive counseling from health promotion officers and further treatment diagnosis by doctors if needed. Counseling is done by playing videos and explaining leaflets about the dangers of smoking. Meanwhile, pharmacy staff only wait for the doctor's diagnosis results to determine if medication is needed. Afterward, patients are allowed to go home with a commitment to return to the SCS at least 6 times for monitoring and evaluation until they can successfully quit smoking. This process applies equally to conventional cigarette users and electronic cigarette users.

> *"Here, the SCS is on Tuesdays and Thursdays, so it's only twice a week, from 08:00 to finish at 14:30, from Monday to Thursday until 11:30 and on Saturday until 13, and most of the patients at are adults." (if3)*

> *"There is a Co analyzer examination to determine whether the CO levels are high or not, then I show the video." (if5)*

Based on observations, health personnel have been very clear and have smiled when administering patient. The patient waiting area is quite spacious, and patient screening is carried out at the nurse station (Figure 1). The screening conducted for patients includes descriptions of smoking conditions, addiction levels, and commitments to quit smoking. All screening standards have been adjusted according to regulations from the Ministry of Health. However, registration forms for screening processes are still manual and have not been digitized.

> *"We have guidelines from the Ministry of Health for primary healthcare." (if3) (if1)*

> *"Sometimes, things are written by hand, and then the names are not clearly visible." (if8)*

The group that is most reluctant to return is from the age group of children to young adults. Meanwhile, the group that visits the most is the adult and elderly group who have experienced complications such as coughing, hypertension, and diabetes.

> *"The patients are uncooperative, impatient, that's the difficult part." (if1) (if4)*

Monitoring and evaluation for counseling improvement efforts are rarely carried out. Evaluations are rare due to the other busy services. Additionally, there is a lack of follow-up plans implemented from the evaluation results. There are other challenges in providing counseling to patients who do not show a significant decrease in their co-analyzer test results on their next visit.

> *"There is an evaluation in the SCS; we have a monthly meeting, then there is a monthly report, so all activities will be evaluated, both the obstacles and the action plan." (if4) (if7)*

Patient screening processes are not only conducted inside but also outside the building. Outside the buildings that have been carried out are at school locations. Screening processes

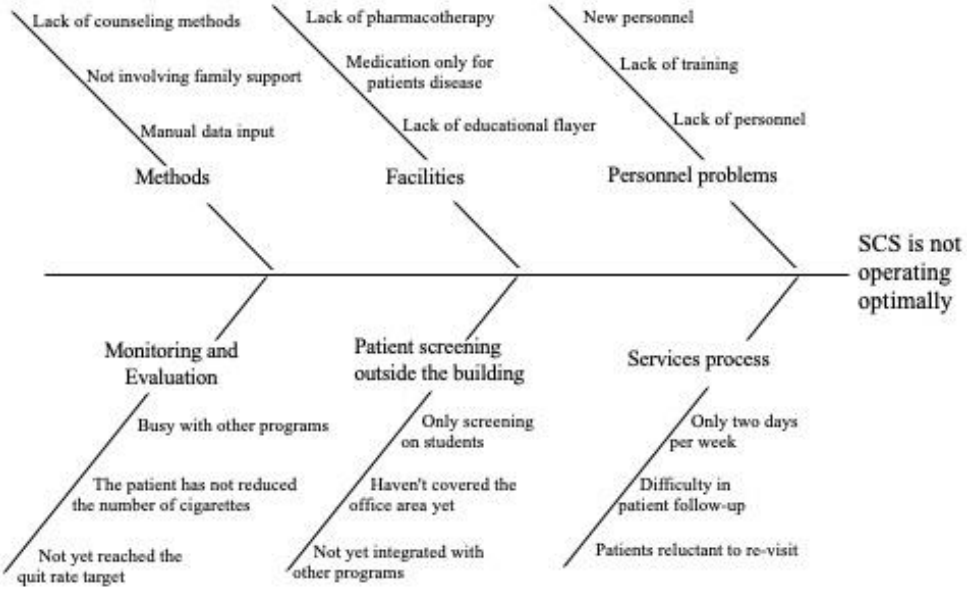
have been carried out on students using a co-analyzer. Unfortunately, there is still no follow-up on the screening results.

> *"Maybe the targets are in schools, such as junior high schools and high schools that are at risk for smoking cases." (if10)*

The patients are uncooperative and the limited number of visits and returning for further SCS have similar conditions with the other regions in Indonesia (Agus et al., 2021; Darmawan & Azni, 2022; Sari et al., 2021). The addictive effects of nicotine are one of the strong reasons for patients' reluctance to visit. Patients may experience lethargy, especially heavy smokers, when attempting to quit (Sari et al., 2021). The healthcare system in the SCS should be built on adequately trained healthcare personnel, collaboration among healthcare providers, effective funding, adequate communication and education capabilities, support from various stakeholders including families and peers, and adequate pharmacological therapy (Jenssen et al., 2019; Levy et al., 2017; Pipe et al., 2022). Spouses play a crucial role in reinforcing smoking cessation efforts, but research reveals a lack of SCS' involvement process in providing patient support (Ayuningtyas et al., 2021).

3.3 Output

Although they have not received training, personnel have tried to follow the algorithmic guidelines for smoking cessation efforts (4T), which are ask, assess, assist, and advise, and follow-up. The algorithm focuses on counseling and motivation, with little information on additional therapy efforts (NRT), and the algorithm does not explain much about the patient referral mechanism. The problems with SCS implementation obstacles are shown in Figure 2.



Source: Primary Data, 2024

Figure 2. Fish Bone Analysis

Pharmacotherapy is crucial but has not been sufficiently emphasized in implementation according to this study. SCS involving pharmacists are increasing efficiency (Saba et al., 2014).

This is because pharmacists can recommend nicotine replacement therapy (NRT) to patients. This effectiveness can only be optimal if pharmacy staff have been trained in NRT. Studies also show that the effectiveness of SCS is enhanced with not only counseling but also pharmacological therapy and strong family support (Kassim et al., 2016; Thomas D & George, 2017).

Furthermore, management needs to pay attention to training new staff before any transfer or the retirement of existing pharmacy staff. Emphasizing SCS solely on counseling is insufficient, especially when dealing with smoking behavior. Health education effects tend to be short-lived compared to the addictive effects of nicotine. Comprehensive counseling is essential, including health, psychological, group, and programmed counseling. These programs include direct smoking cessation efforts. Heavy smokers may opt for gradual reduction in smoking or extending intervals between smoking sessions before ultimately quitting. Nevertheless, comprehensive counseling alone is still insufficient, and ongoing monitoring of patients is necessary. For instance, measuring body weight, nicotine levels, serologic diagnosis to prevent cancer (Hartono et al., 2019). Non-pharmacological therapies that can be applied include acupuncture, hypnotherapy, and programmed behavior therapy.

3.4 Problems in SCS Output

Not all output has reached the target (Table 2). Among them are the low number of patient visits and patients' reluctance to return for follow-up visits. It cannot yet be confirmed whether patients who have visited have reduced their smoking behavior. Meanwhile, the output of patients who have truly quit smoking has not been achieved, especially at this research location.

Table 2. Output Challenges

No	Expected Output	Real Condition	Explanation
1	Increased patient visits	Few patients visit	The number of patients visiting so it is still small, not in accordance with our enthusiasm for the regional regulation target (if10)
2	Patient re-visit	Still problematic	Difficulty in bringing patients to come again (if6) The target for counseling is 6 times, it's only once or twice, it's not complete (if3)
3	Reduce the Number of Cigarettes	Not yet certain	The CO has dropped but we haven't checked again this year (if5 (if11)
4	Quit Rate	Not yet achieved	The most difficult thing is to assess whether they have really stopped smoking, it's not yet visible, right (if7)

Source: Primary Data, 2024

3.5 Follow -up Strategy

Short-term strategies that can be implemented are the increasing number of patient visits. It can be made through follow-up calls, direct patient visits to homes, snowball patient information, and visits to smokers' homes based on PIS PK data (Table 3). More effective effort is to further cooperation with schools and workplace to reduce the prevalence of child and adult smokers. A medium-term strategy is to integrate surprise inspections for compliance

with No-Smoking Areas with SCS. The long-term strategy is telemedicine implementation. Table 3 show about strategy to increase the number of patient visits.

Table 3. Strategy to Increase the Number of Patient Visits

No	Opportunity	Explanation	Challenges
1	Direct services with drug therapy and family support	Complete services plus providing explanations to families to motivate patients to make re-visits	It hasn't been implemented yet, but it has the potential to be implemented
2	Service by telephone	Patients cell phone numbers registered to be called to come back visit or given telephone counselling for 15-20 minutes.	but usually, no response when trying to call (if5)
3	Creation of WhatsApp patient groups	Counselling to patients is delivered in group	I'm afraid that this passive group (if5)
4	Home visits to patients who have come to visit	Visit the patient's home who have visited at least once to obtain further services	Limited staff to visit patients' homes
5	Home visits using PIS PK data	Home visits based on PIS PK data to attract potential patients	Constraints on limited staff
6	Screening at school locations	Develop collaboration with the school to reduce child smoking prevalence	Screening has been carried out with a co-analyzer but there is no follow-up (if1) (if10) (if5)
7	Development of screening locations	Develop collaboration on screening locations not only with schools	Might be to offices, cafes, sub-districts, gathering activities (if3) (if6) (if10)
8	Cross-program collaboration	Hypertension screening for prospective brides and grooms	Haven't tried it yet
9	Integration with the Smoke Free Area program	Inspection results have to visit SCS	There is a smoke free village that could be tried, but it has not been implemented yet (if3)
10	Giving rewards	Rewards are given to patients who make repeat visits	Still thinking about how to give a prize (if5) (if10)
11	Digitization services	The use of digital platform tools such as telemedicine and massive social media publications	There is already an untapped Instagram (if10) Need a party to develop the technology (if7)

Source: Primary Data, 2024

A comprehensive SCS service model is not widely implemented in Indonesia, including in the study area, as the focus remains more on strategies to increase patient visits. Long-term alternative strategies proposed in this study include integration with other programs. For example, targeting patients from other clinics such as premarital counseling clinics, tuberculosis patients, or even Smoke-Free Areas program. Integrating smoking cessation efforts with tuberculosis control services may offer opportunities and standardizing perioperative care including smoking cessation may not require additional resources (Pipe et al., 2022). The integration between SCS and TB control improves smoking cessation effectiveness (Thanomsat et al., 2022).

Another long-term alternative proposed the use of technology, including telemedicine. This requires long-term investment, staff training, and adequate internet networks. The use of technology has been mentioned in smoking cessation service guidelines in developed countries. At least, mobile phones provide a unique opportunity for interactive cessation programming (Pipe et al., 2022). Hence, short-term strategies involving technology such as follow-up calls, creating WhatsApp groups, and leveraging more massive social media use can be attempted as initial efforts to increase patient visits.

This research has yet to show tangible efforts to increase the patient quit rate as they are still hindered by the challenge of increasing patient visits. Indeed, several efforts such as not solely emphasizing counseling, enhancing screening, and pharmacotherapy, play crucial roles in increasing the patient quit rate. The issue of declining quit rates is still prevalent in SCS in the UK, with a decrease from 53% to only 15% (Bauld et al., 2010), yet many developing countries like Indonesia have yet to reach that target. In essence, SCS should not merely sustain the current problematic conditions. Short-term to long-term roadmaps are crucial to achieving increased quit rates, especially among young smokers.

The strengths of this research lie in its focus on delving into the management of existing SCS in primary healthcare services, thereby assessing their operational evaluation. Additionally, this research provides applicable alternative strategies that can be implemented by primary healthcare services, for implementation in both the short and long term. However, its limitation lies in not extensively exploring the patient's perspective. This can be addressed in future research, particularly focusing on essential factors that influence patients' reluctance to visit SCS.

4. Conclusion

This research concludes that the implementation of SCS has not yet reached it optimally. This can be seen from the inadequate training provided to personnel, the limited number of patients returning for follow-up visits, and the failure to achieve the target quitting rate. The biggest obstacle perceived by personnel is attracting more patients to visit SCS. This study provides several alternative strategies to increase patient visits. Short-term strategies include conducting follow-up calls, creating patient WhatsApp groups, and attracting new patients based on family (PIS-PK) data. Meanwhile, long-term strategies that can be implemented include program integration and the development of information systems such as telemedicine applications. This research advises the healthcare personnel to choose strategies that can be applied in SCS. Primary healthcare services can also involve intern doctors to assist SCS for patients and recruitment activities. Patient recruitment from school locations can be enhanced not only by screening but also by further stages up to patient monitoring. The Health Department should strive for optimal funding for the sustainability of SCS to increase patient visits and even provide rewards to patients who have achieved targets.

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