

Systematic Review: Pengendalian Tembakau dan Penyakit Arteri Koroner

Systematic Review: Tobacco Control and Coronary Artery Disease

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Submitted: 18-12-2023

Accepted: 06-03-2024

Published: 30-06-2024

Citation:

Santoso, A. F., Farida, B., Ninda, G. F., Hibatullah, F. N., Sari, N. M. W., Saleem, H. T., Martini, S., & Mahmudiono, T. (2024). Systematic Review: Tobacco Control and Coronary Artery Disease. *Media Gizi Kesmas*, 13(1), 539–548. <https://doi.org/10.20473/mgk.v13i1.2024.539-548>

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ABSTRAK

Latar Belakang: Prevalensi konsumsi rokok di Indonesia telah mencapai tingkat yang mengundang keprihatinan. Saat ini, lebih dari satu per tiga (36,3%) populasi Indonesia tergolong sebagai perokok. Organisasi Kesehatan Dunia (WHO) menempatkan Indonesia sebagai pasar rokok terbesar ketiga di dunia, setelah China dan India. Bahkan, prevalensi perokok dewasa laki-laki di Indonesia merupakan yang tertinggi (68,8%) di dunia sehingga konsumsi tembakau membawa banyak dampak negatif terhadap kesehatan. Pengendalian tembakau adalah salah satu cara untuk melindungi individu dari dampak penggunaan tembakau

Konsumsi tembakau membawa banyak dampak negatif salah satunya adalah penyebab utama penyakit tidak menular (PTM), seperti penyakit arteri koroner (CAD). Pengendalian tembakau merupakan salah satu upaya yang dapat dilakukan untuk mencegah terjadinya penyakit tidak menular, yaitu penyakit jantung koroner. Penyakit arteri koroner merupakan kondisi patologis yang timbul akibat akumulasi aterosklerosis di dalam pembuluh darah yang mengalirkan darah ke jantung, menyebabkan penyempitan pada arteri koroner tersebut.

Tujuan: Mengidentifikasi tembakau sebagai penyebab utama penyakit tidak menular seperti penyakit arteri koroner dan kebijakan pengendalian tembakau pelaksanaan pengendalian tembakau dan kejadian penyakit arteri koroner dengan menggunakan penggunaan artikel yang diterbitkan secara sistematis.

Metode: Tinjauan pustaka dengan menggunakan PRISMA sebagai pedoman. Artikel diperoleh dari database seperti PubMed dan Google Scholar dengan kata kunci spesifik yang relevan “tembakau dan penyakit arteri koroner”, “tembakau dan penyakit tidak menular”, “pengendalian tembakau”, dan “kebijakan tembakau”. Artikel dibatasi hanya untuk studi asli pada tahun 2019 hingga 2023

Hasil: Upaya pengendalian dan pencegahan tembakau yang dapat dilakukan terkait PTM menurut 30 artikel adalah pengendalian media dengan peringatan bergambar secara masif; larangan periklanan, promosi, dan sponsorship; pengendalian harga tembakau melalui kenaikan cukai, pajak, dan harga jual; pembatasan area merokok, dan terapi berhenti merokok di fasilitas kesehatan yang dilindungi asuransi. Terapi penggantian nikotin bisa menjadi pilihan untuk berhenti merokok pada pasien CAD.

Kesimpulan: Mengingat terbatasnya penelitian mengenai terapi berhenti merokok, khususnya pada pasien CAD, maka perlu dikembangkan berbagai metode terapi yang lebih mudah, terjangkau, dan aman.

Kata kunci: Pengendalian tembakau, Penyakit arteri koroner, Penyakit tidak menular.

ABSTRACT

Backgrounds: The prevalence of cigarette consumption in Indonesia has reached a level that is cause for concern. Currently, more than one-third (36.3%) of Indonesia's

population is classified as smokers. The World Health Organization (WHO) ranks Indonesia as the third-largest cigarette market in the world, after China and India. In fact, the prevalence of adult male smoking in Indonesia is the highest (68.8%) in the world, so tobacco consumption has many negative impacts on health, one of which is the main cause of non-communicable diseases (NCDs), such as coronary artery disease (CAD). Tobacco control is one of the efforts that can be made to prevent non-communicable diseases, namely coronary heart disease. Coronary artery disease is a pathological condition that arises due to the accumulation of atheroma in the blood vessels that supply blood to the heart, causing narrowing of the coronary arteries.

Objectives: The aim of this study is to identify tobacco as the main cause of non-communicable diseases such as coronary artery disease and tobacco control policies

Methods: The method of this study is a literature review using PRISMA as a guide. Articles obtained from databases such as PubMed and Google Scholar with specific relevant keywords “tobacco AND coronary artery disease”, “tobacco AND Non-communicable disease”, “tobacco control”, and “tobacco policy”. Article restricted to only original study within 2019 until 2023.

Results: Tobacco control and prevention efforts that can be carried out regarding NCDs according to the 30 articles are controlling media by a massive pictorial warning; prohibition advertising, promotion, and sponsorship; controlling the price of tobacco by increasing the excise, tax, and selling price; restriction on smoking area, and smoking cessation therapy in a health facility that covered by insurance. Nicotine replacement therapy could be the choice for smoking cessation in CAD patients.

Conclusions: Since limited research on smoking cessation therapy, especially in patients with CAD, it is necessary to develop various therapeutic methods that are easier, affordable, and safe.

Keywords: Coronary Artery Disease, Non-Communicable Diseases, Tobacco Control.

INTRODUCTION

Approximately two-thirds of the 52.8 million global deaths in 2010 were attributed to non-communicable diseases, with ischemic heart disease, stroke, chronic obstructive pulmonary disease, lung cancer, and diabetes ranking among the top ten causes of death. (Reitsma *et al.*, 2021). Most fatalities resulting from non-communicable diseases (NCDs) take place in low- and middle-income countries experiencing an epidemiological health transition, primarily due to swift urbanization. (Kuijpers *et al.*, 2020). Coronary heart disease is one of the NCDs that causes the most deaths in the world. Smoking was a major preventable risk factor for atherosclerosis. Exposure to cigarette smoke can result in the activation of atherosclerotic predisposing mechanisms, consist thrombosis, insulin resistance, dyslipidemia, vascular inflammation, abnormal blood vessel growth, and angiogenesis, and result in loss of homeostatic function and endothelial regeneration (Mammoto and Mammoto, 2019). Cigarettes contain more than 4,000 components, carbon monoxide (CO) and nicotine were included in these components. CO plays a role in the process of arthero-thrombosis, CO plays more role in morphological changes in the myocardium caused by hypoxia (Kjeldsen, Thomsen and Astrup, no date). In 2011, the United Nations

General Assembly endorsed a political declaration that commits member states to undertake measures for the prevention and control of non-communicable diseases (NCDs). Additionally, countries reached a consensus on specific targets related to risk factors associated with NCDs, including tobacco consumption, harmful alcohol use, salt intake, obesity, elevated blood pressure, elevated blood glucose and diabetes, as well as insufficient physical activity. (Kontis *et al.*, 2014)

The problem of tobacco consumption has now become a global issue that covers almost all aspects of life, especially the health aspect because of the impact of health losses it causes (Dharmasisya and Dharmasisya, no date). At this time tobacco products in the form of cigarettes have been mass-produced and used in various crowded locations, which is even more worrying that cigarette products are currently favored by women and teenagers, and even children (Reitsma *et al.*, 2021). Tobacco consumption is one of the preventable predisposing factors of death in the world. Globally, tobacco killed almost 6 million people a year and became the risk for 6 of 8 dead causes (Gravely *et al.*, 2017). Tobacco consumption in Indonesia steadily increased. besides the distinctive taste, it turns out that tobacco contains many toxins that can harm health, whether the smokers or those surrounding (Dharmasisya and Dharmasisya, no date)

In view of the increasingly wide spread of tobacco consumption and the increasing risks and deaths caused by tobacco consumption, the WHO Framework Convention on Tobacco Control (FCTC) was approved in 2003 and entered into force in 2005. Although tobacco use causes 5 million deaths annually, a series of proven effective tobacco control interventions protect only 5% of the world's population (Konfino *et al.*, 2014). The WHO FCTC is a science-backed accord that mandates 180 parties (comprising 179 countries and the European Union as of March 2017) to enact diverse control measures aimed at reducing both the supply and demand of tobacco. (Gravely *et al.*, 2017). This is expected to reduce the number of NCDs and deaths caused by NCDs, especially coronary artery disease (CAD). Therefore, looking at the problems above, this article will discuss how the influence of tobacco control policies on the number of NCDs, especially coronary heart disease. Considering the context of the issue, the problem addressed in this study is formulated to identifying tobacco as the main cause of non-communicable diseases such as coronary artery disease and tobacco control policies using a systematic use of published articles.

METHODS

Research Design

This study was systematic review following PRISMA guidelines, articles obtained from several scientific databases namely PubMed, and Google Scholar as a source our article search. "tobacco AND coronary artery disease", "tobacco AND Non-communicable disease", "tobacco control, "tobacco policy", are the search terms used to find relevant publications. In addition, we are also assisted by the Publish or Perish software which is used to help search and analyze, and select articles in the required database. Following are the keywords used to search the relevant articles "tobacco AND coronary artery disease", "tobacco AND Non-communicable disease" "tobacco control"

Eligibility Criteria

The eligibility criteria for this study encompass both inclusion and exclusion criteria. The inclusion criteria consist of the following: 1) Scientific journals in the form of literature, 2) Utilization of reputable sources such as PubMed and Google Scholar, 3) Open access availability of scientific journals, 4) Usage of the English language in scientific journals, and 5) Publication within the timeframe of 2019-2023 in Asia and Europe to narrow the research scope. Researchers employed the PICO (Population, Intervention, Comparison, and Outcome) method developed by FN. Meanwhile, exclusion criteria encompass: 1) Duplicate articles, 2) Articles lacking complete text, 3) Articles published before 2019, 4) Removed for

not open access, 5) Systematic Review articles 6) Title content "Systematic Review" 7) Irrelevant study type 8) Irrelevant study outcome and 9) Irrelevant exposure as indicated in the provided table.:

Table 1. PICO Summary

Component	Information
Population or problem	Who are the subjects? · Male and female, Age 20-65 years, Coronary Heart Patients What problems and diseases wanted to study? · Tobacco control and coronary heart disease
Intervention or exposure	What was the expected condition of the patient? Active smoking as a cause of coronary heart Coronary heart patients can control tobacco use
Comparison	How do smokers compare with non-smokers? Studies using case-control and cross-sectional
Outcome	What were the expected results? It was found that efforts can be made to control tobacco use in people with Coronary Artery Disease.

Data Extraction

The article search and filtered in the form of duplication of articles and articles of the type of systematic review that would be issued, followed by abstract screening and research methods in the form of case-control and cross-sectional with the prevalence or odds ratio in articles conducted by AF and RB articles that are relevant and following what the researcher hopes will be included. From PoP software by searching on Google Scholar and PubMed we found 400 articles each (a total of 800 articles) based on the keywords "tobacco AND coronary artery disease", "tobacco AND Non-communicable disease", "tobacco control, "tobacco policy". Then we issued articles that were duplicate articles (10 articles) and articles that were not open access (390 articles), then we issue 94 articles with the title systematic review and which use the systematic review method. Furthermore, the selection of articles based on the inaccessible full text was issued as many as 137 articles and 169 articles that were accessible, then the screening process was carried out again, and found 154 articles that were issued because they did not include the information needed by researchers regarding the research methods used and the results obtained from each of these articles and produced 15 relevant articles. The strategy of extracting and identifying articles uses a PRISMA flow chart.

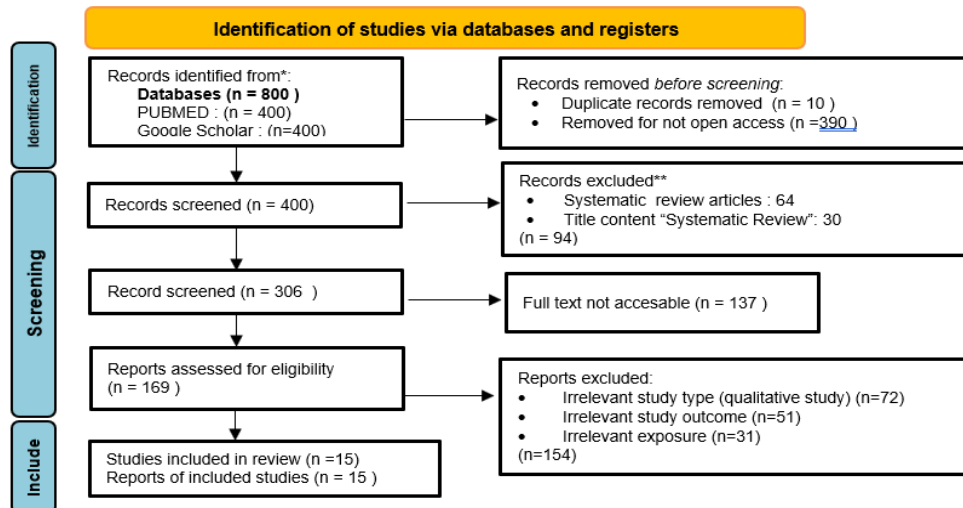


Figure 1. PRISMA Flowchart

RESULTS AND DISCUSSION

The support for the World Health Organization Framework Convention on Tobacco Control (WHO-FCTC) indicates a global consensus on the critical necessity to address the alarming tobacco epidemic. Countries endorsing this convention recognize the negative impacts of tobacco use on health, socioeconomic well-being, and the environment (Wallerich *et al.*, 2023). Among nations in the Asia Pacific region, Indonesia stands as the sole country that has not yet ratified the agreement, despite facing a substantial domestic tobacco burden. The considerable influence of tobacco companies on policy decisions and public perceptions points to an uneven distribution of power within the government system and the broader network (Astuti, Assunta and Freeman, 2020). Significant advancements in decreasing the prevalence of tobacco use have been noted in countries across various regions and developmental stages. However, notable gaps persist in the implementation of tobacco control measures. Nations now have a significant and pressing opportunity to enact robust, evidence-based policies that can expedite the reduction of smoking prevalence, leading to substantial health benefits for their populations (Reitsma *et al.*, 2021).

Tobacco as a risk factor for non-communicable diseases

From the results of the extraction, the results as shown in Table 2 show that smoking is a risk factor for NCD in developing countries as in India and Bangladesh for both men and women. This can also happen in Indonesia, which is one of the countries in Southeast Asia which has almost a quarter of the global population. Smoking behaviour among men is higher in this region and while women usually consume chewing tobacco. In a research endeavour that examined the occurrence and patterns

of community-based risk factors, clinical features, treatment strategies, and results among hospitalized patients in China, it was found that the prevalence of strokes attributed to smoking was 48% (Wang *et al.*, 2020). Stroke can be fatal to sufferers because in addition to causing paralysis it can also lead to death. Stroke is one of the third most common causes of death in the world as in Indonesia, Stroke ranks as the third primary cause of death, following diabetes mellitus and hypertension, with a mortality rate of 138,268 individuals, constituting 9.7% of total deaths. (Dian Saraswati and Penelitian dan Pengembangan Biomedis dan Teknologi Dasar Kesehatan, 2021)

The results of research in Bangladesh (Table 2) which are developing countries show that the prevalence of smoking as a risk factor for Non-Communicable Diseases contributed 83% (Reitsma *et al.*, 2021). In another study in Bangladesh showed that the incidence of smoking which plays a role as a risk factor for non-communicable diseases in men is greater than that which occurs in women (Martinez *et al.*, 2017; Riaz *et al.*, 2020). Smokers also have a 1.48 times greater risk of suffering from non-communicable diseases (Bam, Chand and Shah, 2021; McCuistian *et al.*, 2022). This condition can also occur in Indonesia, where the population aged over fifteen years who smoked reached 28.69% in 2020 that lower than the previous year which reached 29.03% (Nargis, 2023). The total population in Indonesia is around 270 million people with a proportion of 2/3 being in the productive age of which 17% are teenagers aged 10-19%. In 2019, the number of teenagers (ages 13-15) using tobacco products decreased, while the number of teenagers smoking cigarettes increased (Veronica Pia Arevalo *et al.*, 2023). The increasing number of smokers can be a big problem if left unchecked for years because of the risk of increasing morbidity due to non-communicable diseases, reducing productivity, and indirectly affecting life expectancy.

Table 2. Tobacco Use as a Risk Factor for Non-Communicable Diseases

Writer	Aims	Method	Location	Results	
Hu et al (2022)	Examine the occurrence and changes over time in risk factors within the community, clinical features, treatment approaches, and outcomes for inpatients.	Cross-sectional	China	Stroke due to smoking	48%
Nargis (2023)	Estimating the proportion of older adults with multiple morbidities, their correlations and implications for non-communicable diseases	Cross-sectional	Indonesia	Smoking as a risk factor for NCD	45.50%
Reitsma et al (2021)	Illustrating the occurrence of risk factors for non-communicable diseases (NCDs) within the urban impoverished population.	Cross-sectional	Banglade sh	Smoking as a risk factor for NCD	Female =23.5% Male =60.4%
Riaz et al (2020)	Determine the frequency of non-communicable disease (NCD) risk factors and assess the association between these risk factors and socio-demographic factors among adults residing in urban slum areas.	Cross-sectional	Banglade sh	Smoking as a risk factor for NCD	35.70%
Faruque et al (2021)	Describing the prevalence of diabetes, moderate hyperglycemia, hypertension and NCD risk factors based on age, sex and wealth.	Cross-sectional	Banglade sh	Smoking as a risk factor for NCD	Female =41.3% Male=63.3%
Chauhan et al (2022)	Estimating the proportion of older adults with multiple morbidities, their correlations and implications for non-communicable diseases in India	Case control	India	Smokers are 1.48 times more likely to develop NCD	OR = 1.48
Ramvalho and Shah (2021)	Understanding the correlation between lung hyperinflation and coronary artery disease in individuals who smoke.	Cross-sectional	Pennsylv ania	Smokers are 1.48 times more likely to develop NCD	OR = 1.48

Tobacco as a Risk Factor for Coronary Artery Disease

One of the non-communicable diseases that causes death is coronary heart disease (CHD). Approximately 17.9 million individuals succumbed to cardiovascular disease (CVD) in 2019, constituting 32% of the total global mortality. Among these fatalities, 85% were attributed to heart attacks and strokes. (World Health Organization., 2003). Coronary Artery Disease (CAD) refers to a situation in which there is an accumulation of plaque in the coronary arteries, leading to the narrowing of these arteries. This narrowing results in the weakening of the heart muscle and can lead to complications such as disruptions in heart rhythm and heart failure. (Mini and Thankappan, 2017). WHO also notes that more than three-quarters of deaths occur due to cardiovascular disease in low- and middle-income countries. Nicotine is more involved in the process of arthero-thrombosis, nicotine is said to reduce levels of Nitric Oxide (NO) in the body. Other components in cigarettes cause an increase in free radicals, reactions with NO cause oxidative stress in cells. Decreased NO in the body

causes a protective effect on the vascular endothelium and a series of abnormalities occur, including endothelial dysfunction, pro-inflammatory effects on the vessel wall, prothrombic effects such as increased platelet reactivity, decreased endogenous fibrinolysis, and lipid peroxidation (Ambrose & Barua, 2004)

In a study that looked at the prevalence of artery-related disease, it was found that the prevalence of coronary heart disease was also significantly influenced by smoking history (Houehanou et al., 2021). This is supported by the results of other studies that present the fact that smoking behavior has a risk of 2.25 to 5.79 times for coronary heart disease (Bokma et al., 2018);Domingo et al., 2021)). Smoking behavior is one of the factors that can be controlled. However, various challenges are faced to raise public awareness in controlling or avoiding smoking behavior. In a study that looked at the mechanical relationship between smoking, microvascular pathology, and long-term health outcomes showed that after 4 years of observation smoking independently had a 2.2 to 4.54 times risk of death

or heart failure events with a risk of 2.79 to 5.99 times against adverse cardiovascular events (heart attack)(Haig et al., 2019) In the 2021 WHO Cardiovascular Disease Fact-Sheets, it is stated that most cardiovascular disease events can be prevented through managing risk factors related to behavior

such as tobacco use, excessive eating patterns that lead to obesity, lack of physical activity, and harmful alcohol use. Thus, smoking behavior needs to be controlled immediately so that life expectancy and community productivity can increase.

Table 3. Tobacco Use as a Risk Factor for Coronary Artery Disease

Writer	Aims	Method	Location	Results
Houehanou <i>et al</i> (2021)	Determined the prevalence of coronary artery disease in stroke patients who were followed at the University Hospital Borgou-Alibori Department.	Cross-sectional	Nigeria	The prevalence of coronary artery disease is influenced by ex-smokers (p=0.044)
Ramalho and Shah (2021)	Identifying the factors that pose a risk for intracranial aneurysm (IA) in patients with Marfan syndrome (MFS) and describing the characteristics associated with these factors.	Case Control	Columbia	Smoking has a 5.79 times greater risk of developing coronary heart disease OR= 5.79
Kuijpers <i>et al</i> (2020)	Identifying factors linked to coronary artery disease (CAD) and ischemic stroke in aging adults with congenital heart disease (ACHD) patients.	Case Control	Dutch	Smoking has a 2.25 times greater risk of developing CHD OR = 2.25
Haig <i>et al</i> (2019)	Examined the mechanical relationship between smoking, microvascular pathology, and the long-term health outcomes among individuals experiencing acute ST-segment elevation myocardial infarction (MI).	Cohort	UK	Following a median follow-up duration of 4 years, smoking was identified as an independent predictor for both all-cause mortality or heart failure events (odds ratio: 2.20; 95% confidence interval: 1.07 to 4.54) and major adverse cardiovascular events (odds ratio: 2.79; 95% confidence interval: 2.30 to 5.99).

Tobacco Control Policy

The large amount of tobacco consumption that has the potential to reduce productivity and the level of public health is one of the reasons for the Indonesian government to pay more attention to tobacco control policies. In Indonesia, the number of smokers continues to increase even after the adoption of policies on tobacco control (Wibisana et al., 2008).Indonesia ranks third as the country with the highest number of smokers in the world, after China and India, where the highest prevalence of smokers in the world reaches 36.1% (Arevalo,2023). The level of cigarette production in Indonesia reached 260 billion cigarettes in 2010, then increased to 270 billion cigarettes in 2011 (Widea Pratiwi et al., 2018).WHO and its member countries to formulate a convention to control the problem of tobacco which lasted about 4 years. At the 56th World Health General Assembly in 2003, an

international treaty on tobacco control was agreed, known as the Convention on Tobacco Control (FCTC/Framework Convention on Tobacco Control). Despite playing an active role during the drafting of the convention, Indonesia did not sign the FCTC until the ratification period ended on 29 June 2004 (World Health Organization., 2003).Consumption of tobacco products that continues to increase in various circles of society in Indonesia threatens the health and quality of human resources. Based on the 2011 GATS data (Global Adult Tobacco Survey), the prevalence of smoking among adults in Indonesia is 34.8%, consisting of men (67.4%) and women (4.5%). As one of the countries that has not ratified the FCTC, Indonesia has experienced various losses, including the sharp increase in cigarette consumption among vulnerable groups such as pregnant women, children, and the poor. This is at risk of increasing morbidity and

mortality from diseases caused by cigarette consumption (Astuti et al., 2020). Efforts to control tobacco use are needed as an effort to reduce the number of smokers and prevent addiction to smoking habits, so that people avoid deadly non-communicable diseases. In addition, tobacco control is also a form of implementation of the state's obligation to protect the health of citizens to obtain the highest attainable health standard as stated in General Comment No. 14 of the Covenant on economic, social and cultural rights, particularly regarding the right to health (Human Rights, 2014).

The results of research conducted in the US with a simulation of the estimated prevalence rate in 2030 with an increase in tobacco production tax costs, the results obtained are 8.4%, which is quite a decrease from the prevalence in 2018 of 13.8% (Nargis, 2023). This is different from the study conducted by Timea R Partos, et al where increasing cigarette prices through tobacco taxes is an effective tobacco control measure, but is influenced by inflation rates and changes in income. in the results of the study, it was found that in 2014 the affordability of FM (Factory-Made) cigarettes was significantly 88.5%, but RYO (Roll-Your-Own) cigarettes were still high because of the unequal distribution of tax costs. Thus the price of RYO tobacco is much more affordable than FM cigarettes, and policy makers need to focus on closing the gap because there is no significant effect of increasing tax costs on smoking habits because there is still a gap in tobacco tax costs (Partos et al., 2019)

Another effort made to control tobacco use is the existence of pictorial health warnings that have been carried out by the Government of Nepal, the study's findings indicate the significance of encouraging smokers to quit, minimizing cigarette intake, and preventing relapse in individuals who have quit smoking. Evidence from the study has sparked policy changes that include increasing the size of pictorial health warnings to 90% and the release of no-smoking notices. Therefore, the warning message with the image needs to be improved (Bam et al., 2021)

From the results of article screening, a new alternative was found to reduce tobacco use as cigarettes, namely NRT, which is a method by using a medium to provide the nicotine needed by smokers without harmful tobacco burning in the hope that this alternative can reduce tobacco use. A California study examining changes in clients' smoking prevalence in smoking cessation services with the use of NRT showed that clients' smoking prevalence decreased from 54.2% to 26.6% at post-intervention (adjusted odds ratio [AOR] = 0.25, 95% CI = 0.13, 0.45 People who still smoked (active smokers) and those who quit smoking while on medication reported an increase in NRT/pharmacotherapy (11.9% vs. 25.2%; AOR = 3.02, CI = 1.24, 7.35) (Domingo et al., 2021)

Nicotine replacement therapy (NRT) is a pharmacotherapy that has been widely studied as an effort to stop smoking (Moore et al., 2009). The way NRT works is to replace the nicotine that was previously obtained from cigarettes. The three main mechanisms of action of NRT are reducing nicotine withdrawal symptoms, reducing the strengthening effect of nicotine and providing the effects previously obtained from cigarettes (Henningfield et al., 2005). The use of NRT is considered effective, well tolerated and has mild side effects (Moore et al., 2009). Nicotine replacement therapy has several preparations, namely transdermal nicotine, gum (gum), lozenges, sublingual tablets, inhalers and nasal sprays (Manchester, 2009). Nicotine Replacement Therapy is relatively safe to use in adolescents (12-18 years), pregnant and lactating mothers, even smokers who are accompanied by various diseases, such as cardiovascular disease, diabetes mellitus, and liver function disorders under the supervision of a doctor or other health worker (Manchester, 2009). As the results of the study show that NRT can be recommended as an alternative therapy to stop using tobacco in patients with coronary heart disease. Other tobacco users may also choose short-time NRT therapy as well as therapy for smokers.

Table 4. Tobacco Control Policy

Writer	Destination	Method	Location	Results	
Haig <i>et al</i> (2019)	Testing Tobacco Affordability In The UK Between 2002 And 2014, While Addressing The Gap	Cross-sectional	English	Cigarette Affordability Declining	91.5% to 87.8%
Dyer <i>et al</i> (2023)	Identifying E-Liquid Flavoring Effects of Electronic Cigarettes on Smoking Desire	Cross-sectional	UK	E-Liquid users have no effect on the average use of cigarettes	B = 0.18, CI = 0.44 to 0.79 p = 0.57
Bam, Chand and Shah, (2021)	Knowing The Effectiveness Of Illustrated Health Warnings On Cigarette Packaging In Nepal	Cross-sectional	Nepal	The effectiveness of smoking warnings	80.2%

Implication and limitations

It is hoped that this manuscript will serve as a material for consideration in developing a tobacco control strategy, contribute new knowledge, and provide further research ideas. The study found that development of smoking cessation efforts that can be used as an alternative to smoking cessation efforts by the community, namely NRT (Nicotine Replacement Therapy). Further studies that investigate the steps and mechanism of NRT for smoking cessation therapy in CAD patients are very open.

CONCLUSION

From the results of the study it was found that smoking is one of the risk factors for the incidence of Non-Communicable Diseases with a prevalence of 35-48%. In addition, smokers have a 2-6 times risk of suffering from coronary heart disease which can result in death. Several preventive measures that can be taken are increasing tobacco prices by imposing the same cigarette tax rates and pictorial health warnings that are predicted to reduce cigarette use. It is necessary to formulate policies and strict monitoring related to the massive use of tobacco/cigarettes.

Acknowledgments

We would like to acknowledge all participants who made this research possible. This research no received a specific grant from any funding agency, commercial or not-for-profit sectors.

Conflict of Interest and Funding Disclosure

There are no conflicts of interest and funding disclosure associated with this publication. This study received no specific grant from any funding agency, commercial or not-for-profit organizations.

Author contribution

A.F. conceived of the presented idea and design the methods, F.N made PICO's criteria for inclusion and exclusion of studies. B.F ,GF , N.M, H.T. and R.B were a assessed study quality and extracted relevant data independently in pairs, using a standardized data extraction and quality assessment criteria PICO (Population, Intervention, comparison and outcome) following PRISMA guidelines. B.F ,GF , A.F, and H.T. make a discussion of the results of data extraction T.M and S.M assessed the script and the method used.

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