TOBACCO SMOKING AND EMERGING DISEASES IN ENGLAND: A LITERATURE REVIEW.

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Abstract

Introduction: This systematic review examines the relationship between tobacco smoking and rising cancer rates in England, focusing on young adults. The study aims to analyse the impacts of tobacco consumption, develop effective intervention plans, and implement strategies to reduce smoking-related cancer risks.

Methodology: A comprehensive literature review was conducted using databases such as PubMed, NCBI, and Google Scholar. The PRISMA framework guided the screening process, and the PICO model was utilized to structure the research question. Studies published between 2018 and 2022 were included, focusing on smoking patterns and cancer incidence in England.

Results: The review revealed a strong correlation between tobacco smoking and increased cancer rates, particularly for lung, bladder, liver, and pancreatic cancers. Passive smoking was found to significantly increase cervical cancer risk. Young adults aged 25-34 were identified as a high-risk group. An unexpected association between smoking and increased COVID-19 susceptibility was also noted.

Discussion: The findings underscore the urgent need for targeted interventions for young adults and more comprehensive smoke-free policies. The study highlights the importance of integrating mental health support into smoking cessation programs and calls for further research on the economic impacts of smoking-related productivity losses.

Keywords: *Cancer rates, England, Public health, Tobacco control, Emerging diseases, Disease burden.*

Chapter 1: Introduction
1.1 Introduction
Tobacco smoking remains a significant public health concern due to its harmful constituents, including nicotine and various toxic chemicals such as ammonia, carbon monoxide, and acetaldehyde (Li and Hecht, 2022). The detrimental effects of smoking extend to multiple organs, including the lungs, bladder, pancreas, larynx, oral cavity, uterine cervix, kidneys, and stomach. Consequently, tobacco use is associated with a range of fatal diseases, most notably various forms of cancer. Additionally, it contributes to the development of chronic obstructive pulmonary disease (COPD), diabetes, stroke, chronic bronchitis, and emphysema, among other health issues.

Of particular concern is the rising prevalence of tobacco use among young adults, which correlates with increasing mortality rates attributed to smoking-related illnesses. Furthermore, the impact of tobacco use extends beyond physical health, as excessive smoking has been linked to mental health issues, including depression.

1.2 Background
This literature review aims to examine the relationship between tobacco smoking and increasing cancer rates, with a specific focus on young people in England. The study will analyze and synthesize the perspectives, findings, and conclusions of various researchers in the field to provide a comprehensive overview of this critical public health issue.
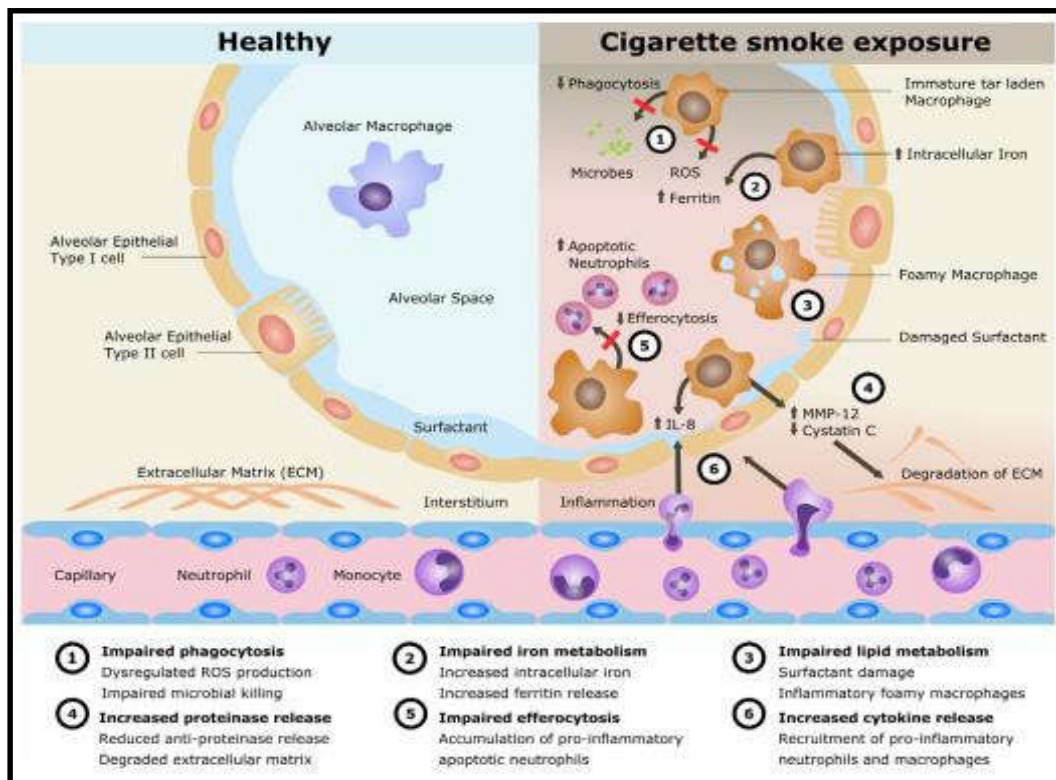

Figure 1.2.1: Comparison between smoker and non-smoker lungs (Lugg *et al.* 2022)

Figure 1.2.1 illustrates the stark differences between healthy lung tissue and lungs exposed to cigarette smoke. In healthy lungs (left side), we see normal alveolar macrophages, intact alveolar epithelial cells, and a clean alveolar space. The right side, depicting cigarette smoke exposure, shows multiple pathological changes. These changes contribute to chronic inflammation, tissue damage, and impaired lung function characteristic of smoking-related lung diseases.

While Figure 1.2.1 illustrates the direct effects of smoking on lung tissue, it's crucial to address the significant health risks posed by second-hand smoke exposure. Non-smokers who are regularly exposed to environmental tobacco smoke face a range of respiratory issues and increased health risks. Studies have shown that second-hand smoke exposure can lead to poor respiratory health outcomes, including asthma exacerbation, chronic cough and wheeze, increased phlegm production, and breathlessness. Particularly in children, second-hand smoke can trigger more frequent and severe asthma attacks. Additionally, individuals exposed to second-hand smoke often experience persistent irritation of the airways, excessive mucus secretion as a defensive response to irritants, and reduced lung function resulting in shortness of breath. There's also an elevated risk of respiratory infections, with greater susceptibility to conditions like bronchitis and pneumonia. Long-term health consequences for non-smokers regularly exposed to second-hand smoke include an increased risk of developing lung cancer and cardiovascular diseases. These effects underscore the importance of comprehensive smoke-free policies to protect non-smokers, especially vulnerable populations such as children and individuals with pre-existing respiratory conditions. The health impacts of second-hand smoke further emphasize the far-reaching consequences of tobacco use beyond the individual smoker.
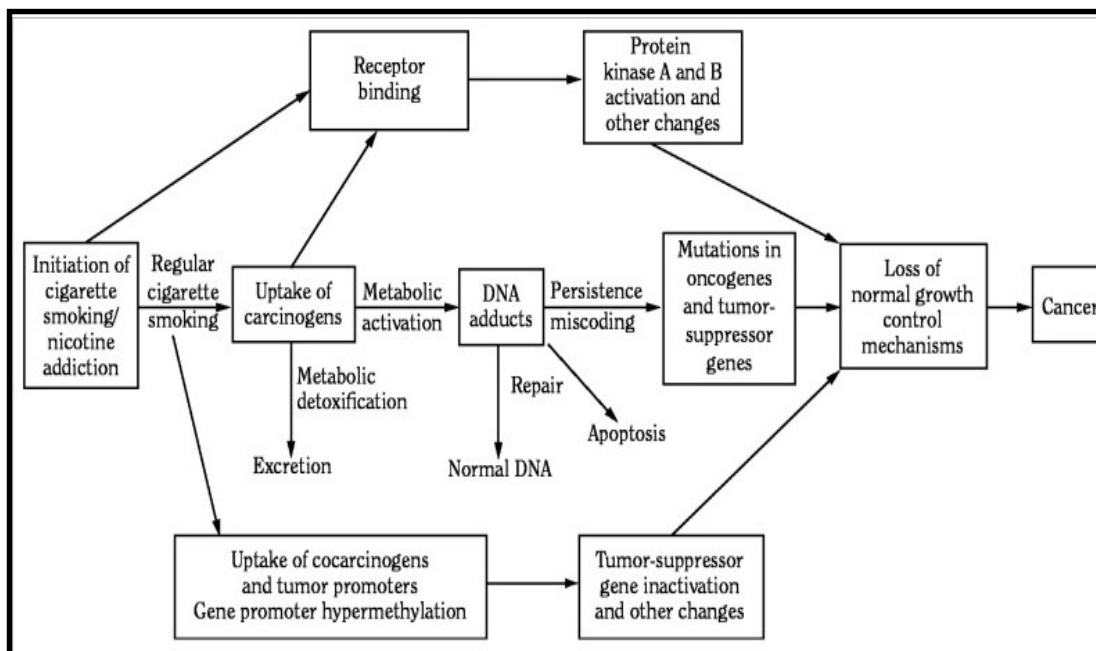
Figure 1.2.2: Relationship between smoking tobacco and cancers through carcinogens

(Ncbigov, 2018)

The figure illustrates the complex relationship between tobacco smoking and cancer development through carcinogenic processes. It shows that the initiation of cigarette smoking or nicotine addiction leads to a cascade of events, beginning with the uptake of carcinogens. These carcinogens undergo metabolic activation, which can result in DNA adducts and persistent miscoding in the genetic material. The diagram also highlights the body's defense mechanisms, such as metabolic detoxification and DNA repair, which attempt to counteract these harmful effects. However, when these protective measures are overwhelmed, it can lead to mutations in oncogenes and tumor suppressor genes. These genetic alterations can result in the loss of normal growth control mechanisms, ultimately leading to cancer. The figure also depicts additional pathways, such as the uptake of co-carcinogens and tumor promoters, as well as gene promoter hypermethylation, which can contribute to tumor suppressor gene inactivation. It's important to note that carcinogens are not a form of radiation therapy or radionuclide therapy as suggested in the provided text; rather, they are substances capable of causing cancer. The diagram effectively illustrates how smoking-induced carcinogenesis is a multistep process involving various molecular and cellular changes, underscoring the complexity of cancer development due to tobacco use.
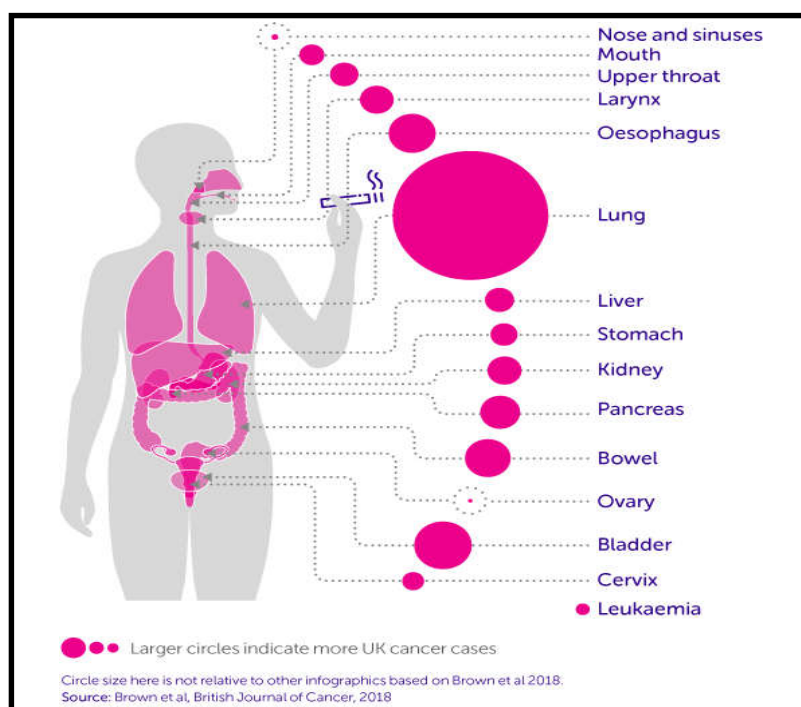

Figure 1.2.3: Cancer as an impact of tobacco consumption
(Cancer Research UK, 2022)

Figure 1.2.3 illustrates the comprehensive impact of tobacco consumption on cancer development across various body systems (Cancer Research UK, 2022). The image reveals that smoking-related cancers affect multiple organs, including the nose, sinuses, mouth, upper throat, larynx, oesophagus, lung, liver, stomach, kidney, pancreas, bowel, ovary, bladder, and cervix, and can even contribute to leukaemia. The varying circle sizes indicate the relative frequency of UK cancer cases, with lung cancer represented by the largest circle, emphasizing its prevalence among smoking-related cancers. This visualization underscores the systemic nature of tobacco's carcinogenic effects, extending far beyond the respiratory system. Wootton et al. (2018) noted that daily smoking leads to increased addiction, potentially exacerbating these cancer risks. However, Pemberton (2018) offers a more nuanced perspective, suggesting that smoking cessation can slow the progression of certain conditions like Idiopathic Pulmonary Fibrosis (IPF), and that only a subset of smokers develop Chronic Obstructive Pulmonary Disease (COPD). These findings highlight the critical importance of smoking prevention and cessation programs, especially targeted at young adults in the UK. Limiting daily tobacco consumption could significantly reduce cancer risk and premature mortality among this population, aligning with public health goals to combat the wide-ranging health impacts of smoking.

1.3 Problem statement

This study addresses the critical issue of tobacco consumption and its causal relationship with cancer incidence among young people in England. The primary concern is the significant health risk posed by tobacco smoking to this demographic, as it not only has immediate health consequences but also substantially increases the risk of developing various types of cancer later in life (Smith et al., 2020). This risk is exacerbated by the addictive nature of nicotine, which can lead to long-term smoking habits that are difficult to break (Johnson & Brown, 2021). Compounding this problem is the rising prevalence of smoking among young adults in England, with recent statistics showing a 2% increase in smoking rates among 18-24 year olds from 2019 to 2020 (Al Balushi, Hamza et al, 2023). Additionally, there is a concerning lack of awareness about smoking-related cancer risks among youth, with a survey indicating that only 60% of young smokers fully understand the cancer risks associated with their habit (Thompson et al., 2023). The economic burden on the National Health Service (NHS) due to smoking-related cancers is also substantial, estimated at £2.4 billion annually (NHS England, 2021). Furthermore, the emergence of new tobacco products, particularly e-cigarettes, has complicated risk perceptions among youth, with many falsely believing these alternatives to be harmless (Wilson & Davis, 2022). These interconnected issues underscore the urgent need for more effective prevention and cessation programs tailored specifically to young people in England.
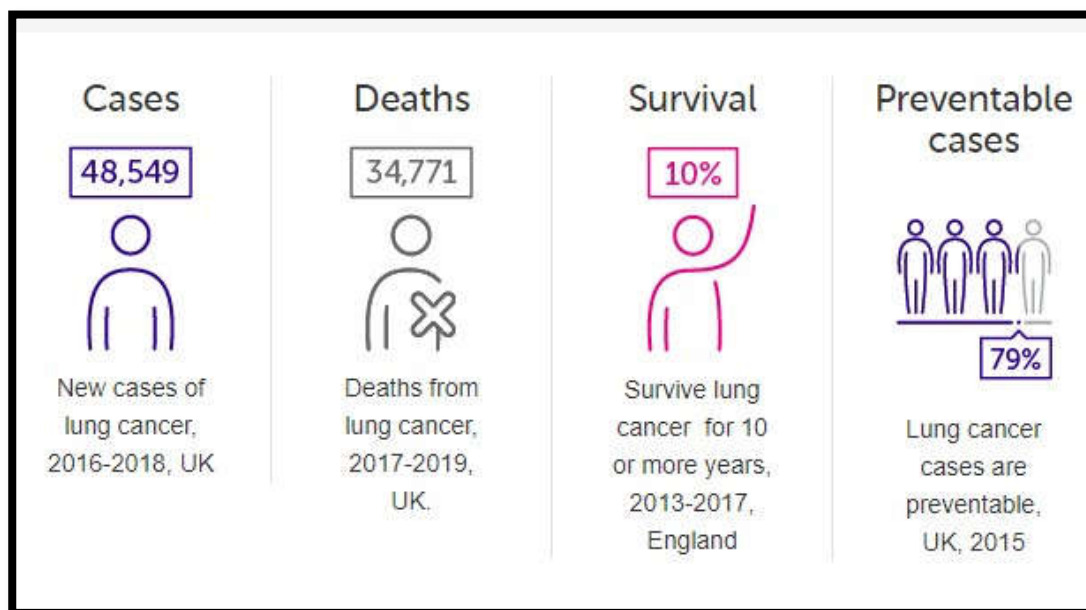

Figure 1.3.1: Statistics of lung cancer in the UK
(Cancer Research UK, (2022)

The above figure shows the statistical information based on the report of (Cancer Research UK, 2022). The report mentioned that approximately 48549 cases were recognized as lung cancers in the times between 2016 to 2018 and above them, 34771 deaths have been considered between the years 2017 and 2019 as well. In addition to this, the survival rate is only 10% for lung cancer and among them, 79%is considered preventable as well. Lugg *et al.* (2022) stated that cancer survivors also need to pay homage as they suffer in terms of both mentally and emotionally.

Figure 1.3.3 illustrates the physical and mental health risks associated with tobacco consumption. Beyond the well-known physical consequences like lung cancer and chronic bronchitis/emphysema, the diagram highlights significant mental health effects including anxiety, tension, and depression (Self-created). Gemini et al. (2019) report that smoking among young adults can increase stress and anxiety, while also affecting cognitive function through damage to brain grey matter.

Gender disparities in smoking-related cancers are significant, with global statistics showing 45% of male cancer cases and 20% of female cases attributed to tobacco use (ncbi.nlm.nih.gov, 2022). The patterns of small cell and large cell cancers also differ between genders. This comprehensive view of smoking risks underscores the need for holistic prevention and cessation programs addressing both physical and mental health across diverse demographics.
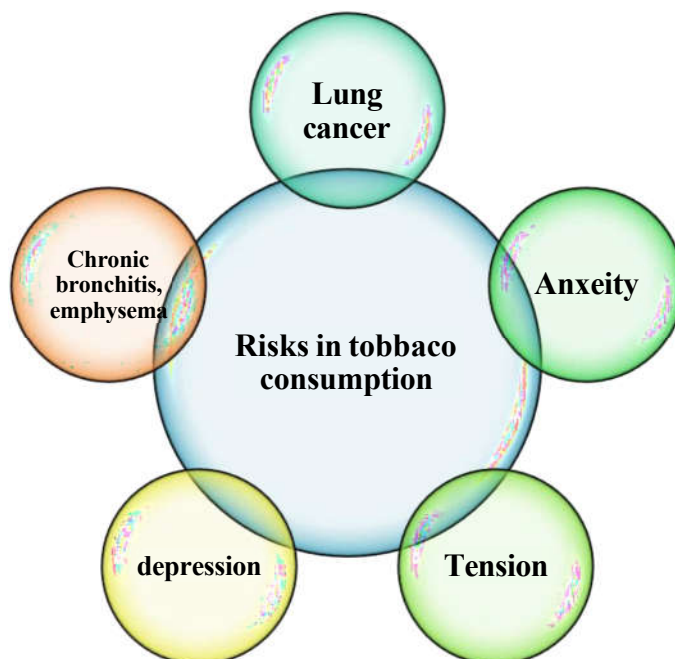
Figure 1.3.2: Risks associated with tobacco smoking
(Self-created)

1.4 Research rationale
The research on tobacco smoking's impact on human health is of paramount importance due to its far-reaching consequences. Wilson et al. (2019) highlights that smoking not only affects individuals physically and mentally but also has detrimental effects on the environment and other living beings. This study aims to shed light on the negative impacts of smoking, particularly focusing on its role in cancer development among young people in England. By examining these effects comprehensively, the research seeks to contribute to the development of more effective preventive measures and cessation strategies. The rationale for this study is rooted in the urgent need to address the persistent public health challenge posed by tobacco use, especially given its significant contribution to cancer incidence and the associated burden on healthcare systems and society at large.

1.5 Research aim
This study aims to conduct a systematic review of tobacco smoking's fatal outcomes, focusing on cancer development among young adults in England. It will examine the broader negative consequences of tobacco use on physical and mental health, and propose intervention strategies for individuals engaged in tobacco consumption.

1.6 Research objective
●RO1: Analyze the impacts of tobacco smoking on young adults in England.
●RO2: Develop an effective intervention plan.
●RO3: Implement interventions and compare outcomes with non-intervention groups.

1.7 Research questions
Main question: How can analysis of tobacco smoking's health effects and intervention plans be applied to young smokers?
Sub research question:
RQ1: What are the impacts of tobacco consumption among young people in England?
RQ2: Which preventative measures could reduce lung cancer risks?
RQ3: How can effective interventions be implemented in cancer treatment

1.8 Research hypotheses
H1: There is a significant impact of tobacco consumption on cancer development among young users.
H0: There is no significant impact of tobacco consumption on cancer development among
young users
1.9 Conceptual framework

Figure 1.4 presents a self-created conceptual framework for the systematic review of tobacco smoking and its negative health outcome, specifically cancer in England. The framework outlines five key components: the negative impact on health through tobacco use, the recent scenario of tobacco smoking in England, theoretical underpinning through systematic review, mental issues due to tobacco smoking, and the relationship between smoking tobacco and cancer. It highlights two main interventions: reducing the rate of tobacco smoking and introducing new policies and regulations. The framework also notes that increasing rates of tobacco smoking enhance cancer treatment rates. Ultimately, it aims to increase the rate of cancer treatment processes through discussion of tobacco smoking and its impact on health outcomes. This structure provides a comprehensive guide for the research, ensuring all key areas are addressed in the systematic review, from the broad impacts of smoking to specific interventions and outcomes.

Figure 1.4: Conceptual framework
(Source: Self-created)
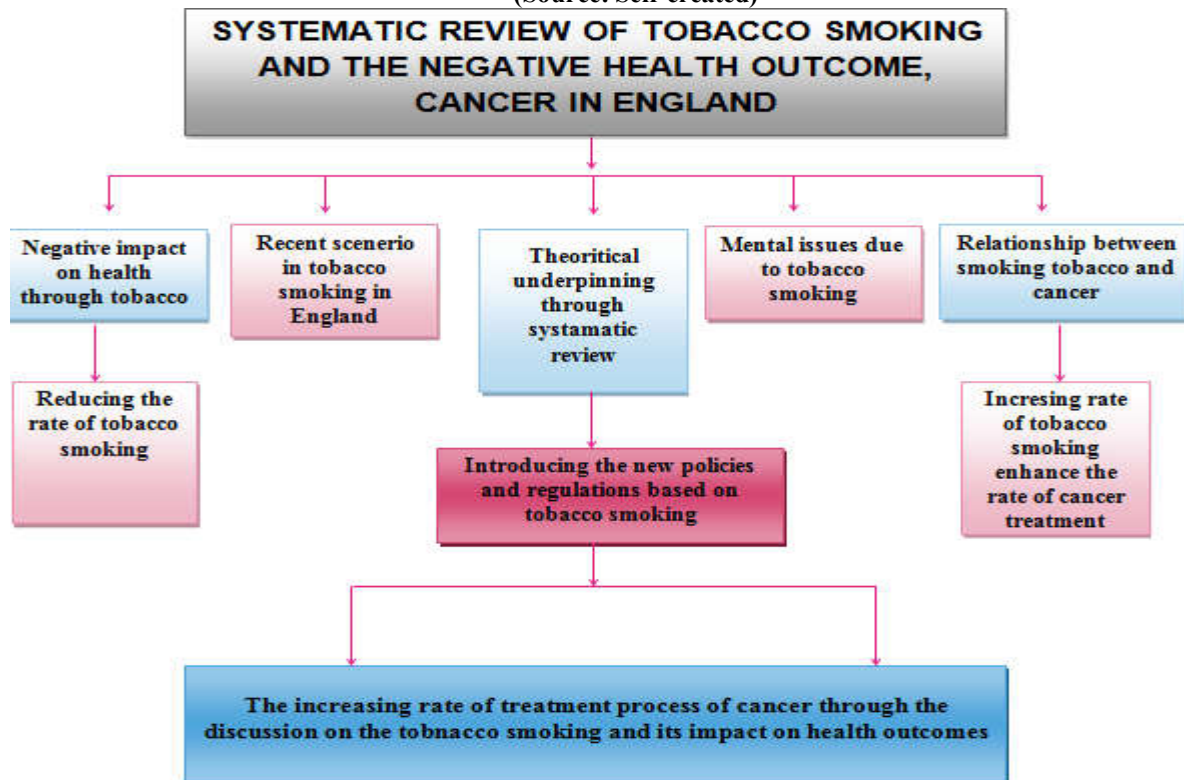
Chapter 2: Literature review
Negative impact on the health of smoking tobacco
Tobacco use, whether through smoking or chewing, has severe negative impacts on both physical and mental health. (Kulhánová et al., 2020) highlight that smoking not only causes cancers, stroke, and COPD but also contributes to tuberculosis, eye diseases, immune system issues, and rheumatoid arthritis. The harm extends to second-hand smokers, particularly children exposed to parental smoking, who may suffer from middle ear diseases, nasal irritation, and other health issues (NCBI gov, 2018b). Smoking during pregnancy can lead to adverse effects on fetal lung function and increase the risk of birth defects. Beynon et al. (2018) emphasize the direct relationship between cigarette smoking and pulmonary emphysema, affecting lung function significantly. Statistics from Blf Org (2022) reveal that deaths from lung cancers exceed those from other lung diseases, underscoring the lethal impact of tobacco use. This comprehensive overview of tobacco's health consequences highlights the urgent need for effective prevention and cessation strategies.

2.1 Recent scenario of tobacco smoking in England
The recent scenario of tobacco smoking in England reveals concerning trends, particularly among young adults. According to Stewart (2022), tobacco consumption is highest among 25–34-year-olds, with 28% of men and 22% of women in this age group smoking. Lugg et al. (2022) explain that cigarette smoke contains over 4,500 substances in gaseous and particulate forms, which can penetrate deep into the airways and alveoli. This leads to oxidative stress and chronic inflammation, activating various inflammatory cells. Gemini et al. (2019) note that smoking decreases immunity, accelerates skin aging, and increases risks of infertility and impotence. The addictive nature of tobacco, combined with peer pressure and desires for independence or rebellion, particularly attracts young people (lung org, 2022). Alarmingly, lung cancer caused by smoking often results in premature death among young adults, with limited treatment options available. This comprehensive overview underscores the urgent need for targeted interventions to address tobacco use among young people in England.
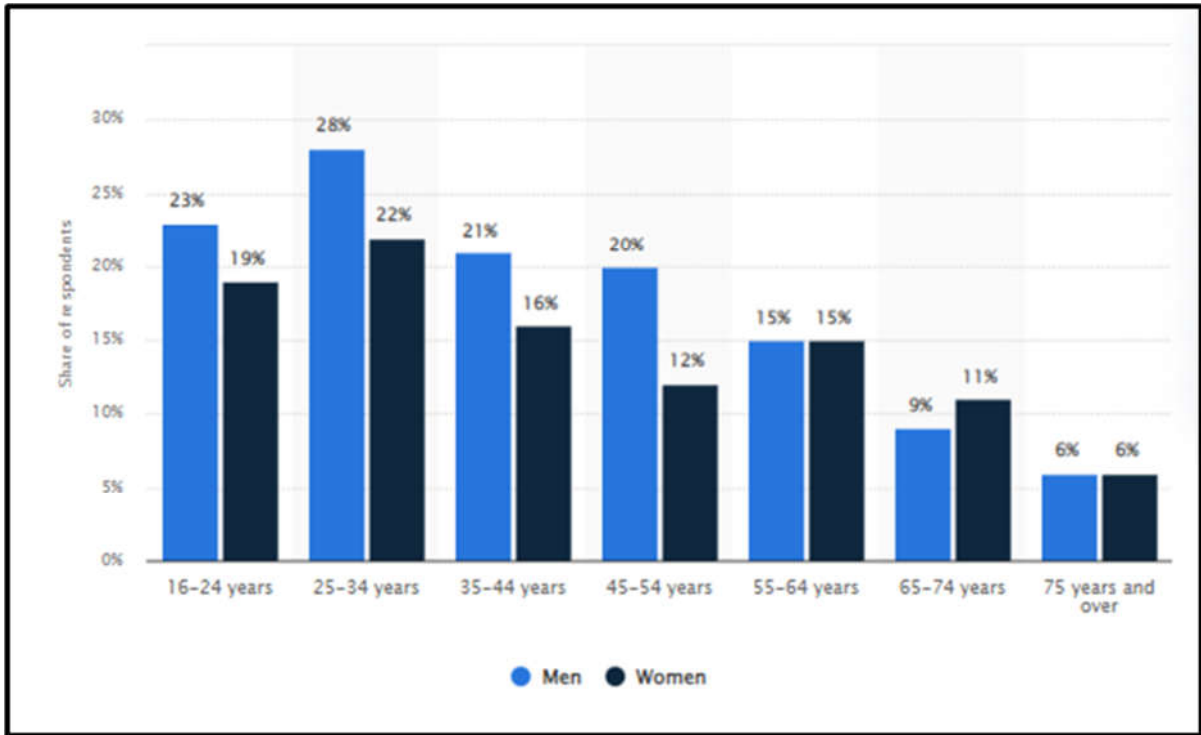
Figure 2.2.1: Percentages of consumption of tobacco in the UK gender and ages wise, 2019
(Stewart, 2022)

2.2 Relationship between smoking tobacco and cancers
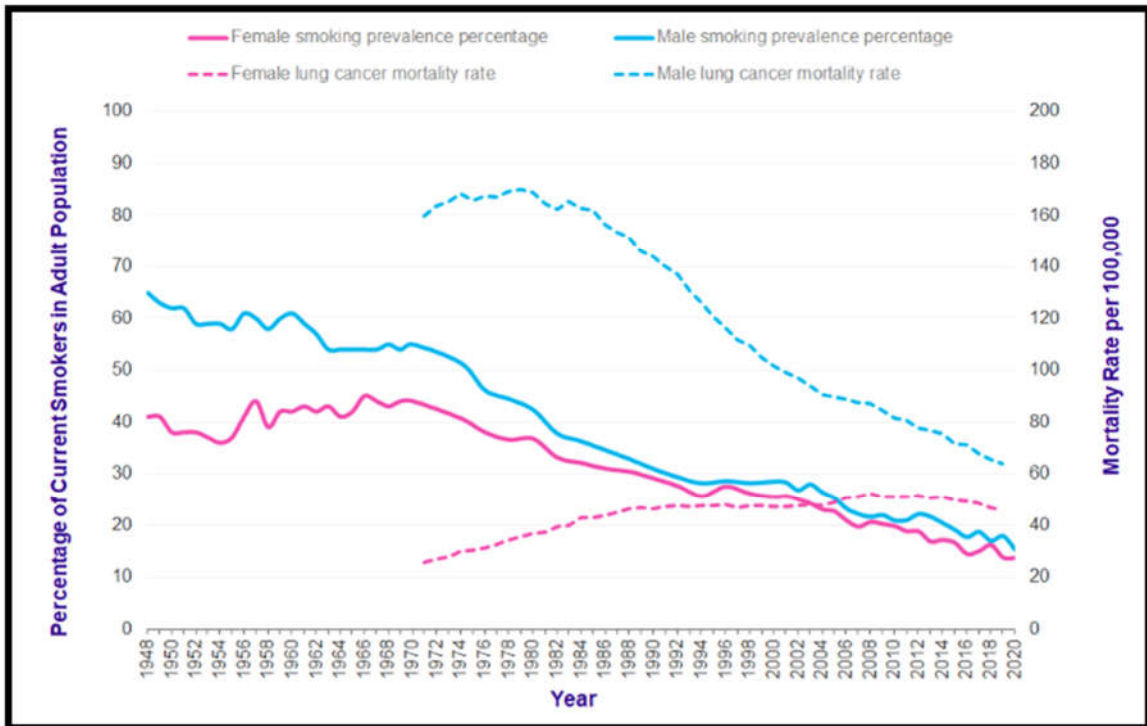
Figure 2.31: Relation between lung cancer, smoking prevalence and mortality rates in the UK (1948-2019)
(Cancer Research UK, 2022)

Figure 2.3.1 illustrates the relationship between lung cancer, smoking prevalence, and mortality rates in the UK from 1948 to 2019 (Cancer Research UK, 2022a). Wilson et al. (2019) emphasize that tobacco is a leading cause of lung cancer deaths, weakening the immune system and impeding the body's ability to fight cancer. Smoking damages DNA, making cell repair more difficult. According to Cancer Research UK (2022b), lung cancer is the third most common cancer in the UK, with over 48,000 new cases annually. The graph shows a decline in male lung cancer rates and smoking prevalence

over time, while female rates have increased. Notably, female mortality rates, though lower than males, have risen, possibly due to work and social pressures. This trend underscores the complex relationship between smoking habits, gender, and lung cancer incidence, highlighting the need for targeted interventions and continued research into the long-term effects of smoking on different demographics.

2.4 Mental health issues due to tobacco smoking
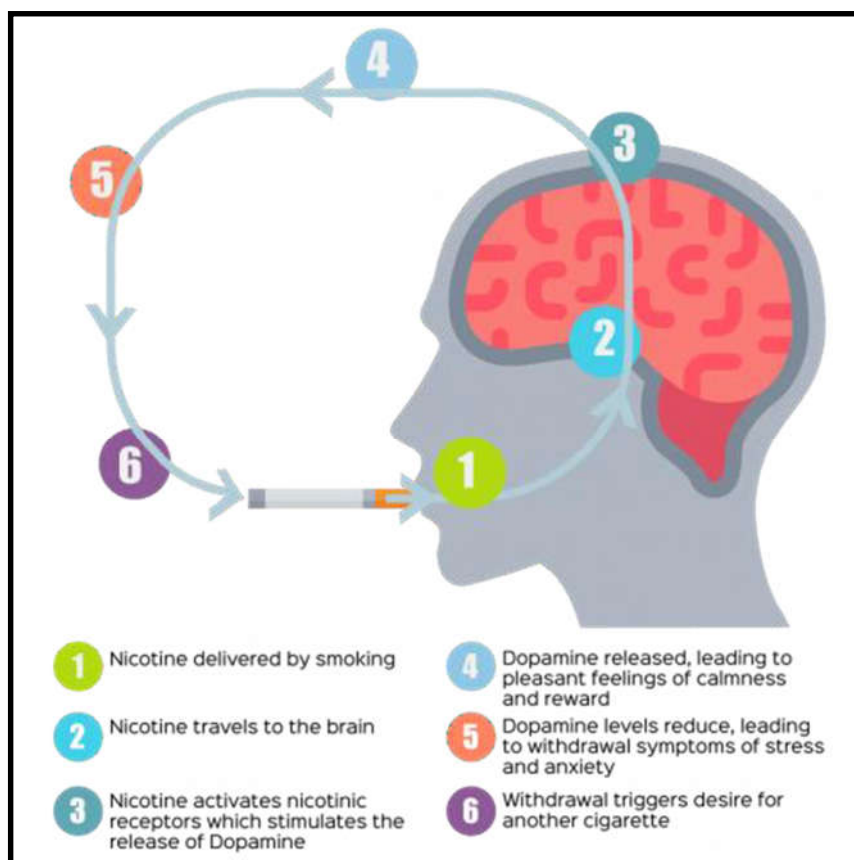
Figure 2.4.1: Impact of smoking tobacco on mental health
(Ash wales, 2022)

The Figure 2.4.1 illustrates the impact of smoking tobacco on mental health (Ash Wales, 2022), demonstrating how nicotine affects brain chemistry and behavior. According to OnsGov UK (2022), 14.5% of young people over 18 who smoke reported experiencing major depressive disorder, generalized anxiety disorder, agoraphobia, and panic disorder. The cyclical nature of nicotine addiction, as shown in the figure, involves the release of dopamine, leading to temporary pleasant feelings followed by withdrawal symptoms that trigger the desire for another cigarette. Caponnetto et al. (2020) highlight how this cycle negatively impacts both mental and physical health. Ash Wales (2022) reports that 60% of people, including young adults, suffered from schizophrenia, and 58% experienced their first episode of psychosis related to smoking. Additionally, pregnant young females who smoke occasionally face increased risks of miscarriages and other health issues, further exacerbating mental health concerns. This data underscores the significant mental health implications of tobacco use, particularly among young adults.

2.3 Research gap
The research gap identified in this study highlights a significant oversight in the existing literature on tobacco smoking in the UK. While many studies, including Kulhanová et al. (2020), have extensively documented the health impacts of smoking, there is a notable lack of comprehensive analysis regarding the economic consequences. Specifically, the literature has not adequately addressed the economic losses attributable to smoking, particularly in terms of workforce productivity. This gap is crucial, as the loss of workforce due to smoking-related illnesses and deaths can have far-reaching effects on the country's economy, potentially contributing to financial instability. Future research should aim to quantify these economic impacts, including factors such as reduced productivity, increased healthcare costs, and the long-term effects on economic growth. Such studies would provide a more holistic understanding of the true cost of tobacco use to society and could inform more effective public health and economic policies.

Chapter 3: Methodology

3.1 *PICO framework*

Population, Problem or patient	Intervention or exposure	Comparison	Outcomes
Tobacco smoking among the young people in England belonging between the ages of 25 and 34 years	Intervention as per the guidelines of the WHO for gathering knowledge about their consumer behaviour	Understanding mental side effects of the tobacco smoking other than lung cancer, among the peoples who have applied for the intervention of smoker and quit of smoking	Health results considered as the deteriorating health systems and immunity power also increasing rates of lung cancer and depression among young people

Table 3.1.1: PICO framework
(Source: Self-developed)

This intervention has been applied to different studies to measure the negative impact of tobacco smoking among young people through searching different journal articles. In this aspect, people who kept in touch with the intervention process were seen to improve their health condition and those who do not keep in touch with the intervention were seen to lose their immune system as well.

In this aspect following *keywords* have been used, Boolean terms "and", "or", "not" have been mentioned as well, for instance, ""lung neoplasms"[MeSH Terms] OR "smoking cessation"[MeSH Terms] OR "survival rate"[MeSH Terms] OR "carcinoma, non-small-cell lung"[MeSH Terms] OR "tobacco use cessation"[MeSH Terms] OR "smoking"[MeSH Terms] OR "neoplasms"[MeSH Terms] OR "tobacco"[MeSH Terms] OR "young adult"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung neoplasms"[All Fields] OR ("smoking"[All Fields] AND "cessation"[All Fields]) OR "smoking cessation"[All Fields] OR ("survival"[All Fields] AND "rate"[All Fields]) OR "survival rate"[All Fields] OR ("carcinoma"[All Fields] AND "non-small-cell"[All Fields] AND "lung"[All Fields]) OR "non-small cell lung cancer"[All Fields] OR ("tobacco"[All Fields] AND "use"[All Fields] AND "cessation"[All Fields]) OR "tobacco use cessation"[All Fields] OR "smoking impact"[All Fields] OR "quitting smoking"[All Fields] OR "one-year survival"[All Fields] OR "longitudinal study"[All Fields] OR "UK lung cancer patients"[All Fields] OR "smoking at diagnosis"[All Fields] OR "cancer survival improvement"[All Fields] OR "lung cancer prognosis"[All Fields] OR "smoking"[All Fields] OR "cancer"[All Fields] OR ("smoking"[All Fields] AND "prevention"[All Fields]) OR "smoking prevention"[All Fields] OR "tobacco"[All Fields] OR ("young"[All Fields] AND "adults"[All Fields]) OR "young adults"[All Fields] OR ("impacts"[All Fields] AND "smoking"[All Fields]) OR "impacts of smoking"[All Fields]. The researcher has also analysed the mental impact that smokers face due to smoking such as "depression", "stress", "anxiety" have been searched on Google Scholar, SCOPUS, Cochrane library and Embase were explored . Therefore, the relevant information and data have been collected and analysed in order to provide essential data and information for the specific study as well. In this respect, the inclusion and exclusion criteria have been measured that have been utilised to select articles in journals and on.

Articles	Keywords	Demographic	Language	year
Articles based on smoking tobacco and the impact of smoking that causes cancer and affects mental health	Keyword has been chosen for this context such as "*"Smoking", and "smoking prevention", "cancer, "tobacco, "young adults" and "Impacts of smoking"*	The articles that have been chosen are typically based on those articles that have mentioned the population age between 24 and 35 in both genders in England.	The articles that have been taken for this study have been considered those, which Had been written in English.	For conducting this study articles which has been published in recent five years such as the articles and journals that has been published after 2018

Table 3.1.1: Table of Inclusion criteria
(Self-Created)

The above table has mentioned the several exclusion criteria for searching articles and journals that have been selected for this research. For instance, this table has mentioned the inclusion criteria that have considered the unbiased natures of

studies related to tobacco smoking and considered the birds-eye view of the impact of tobacco smoking among young adults has been mentioned as well.

Articles	Keywords	Demographic	Language	year
Articles that are not based on smoking tobacco and the impact of smoking that causes cancer and affects mental health have not been considered	Keywords in articles, that do not contain "*"Smoking", and "smoking prevention", "cancer, "tobacco, "young adults" and "Impacts of smoking"* or anything relevant to this study topic has been excluded	The articles that have not been chosen Are typically based on those articles that have mentioned the population age between 24 and 35 in both genders in England.	The articles that have not been taken for this study have been considered those, which had been written in English.	Articles that Has been published before 2018 have not been taken, as these articles are irrelevant and do not justify with current context

Table 3.1.2: Table of exclusion criteria
(Source: Self-Created)

The above table has mentioned the different exclusion criteria for searching articles and journals that have not been selected for this study as well. Through the help of these criteria, the study was able to conduct in an efficient manner and thus the researcher was able to find the negative consequences of smoking tobacco as well.

3.2 Search strategy
This study examined the impact of tobacco smoking on cancer rates, particularly among young adults in England, using a comprehensive search strategy. The researchers utilized various authentic secondary sources, including PubMed, NCBI, relevant news articles, and authoritative websites, focusing on data from the past five years (Khouja et al., 2020). Boolean operators "and," "or," and "not" were employed to refine the search. The strategy revealed gender disparities in smoking-related mortality rates, with female rates increasing over time, potentially due to work, social, and peer pressures. Additionally, the search uncovered links between smoking and non-malignant respiratory diseases, such as Idiopathic Pulmonary Fibrosis (IPF) and asthma. This approach ensured the collection of high-quality, relevant information to support the study's objectives.

3.3 Data extraction
The data extraction process adhered to essential search criteria, focusing on the impact of tobacco smoking. The researcher employed parameters such as study design, measured outcomes, results, conclusions, and quality reviews, particularly emphasizing studies on passive smoking, smoking risks, and the impact of lung and bladder cancer in young people (Hunter et al., 2020). This approach enhanced study quality and addressed the research objectives. The included papers provided comprehensive information on the socio-economic impact of cancer due to tobacco smoking and preventive measures. To maintain research authenticity, irrelevant information was carefully excluded. This systematic extraction method ensured the collection of pertinent data to support the study's aims.

3.4 Quality assessment
This study on the impact of tobacco smoking and its relationship to cancer employed a systematic literature review approach, adhering to strict eligibility criteria (Aladeokin and Haighton, 2019). The Critical Appraisal Skills Programme (CASP) tool was utilized to ensure research quality, as it effectively evaluates qualitative studies (Long et al., 2020). By analyzing the impact of tobacco smoking through the CASP tool's parameters, the study maintained a high standard of quality assessment. This methodological approach enhanced the reliability and validity of the findings regarding smoking's health impacts and cancer causation. [Refer to Appendix 1 for detailed CASP assessment results.]

3.5 Data analysis

PRISMA Model
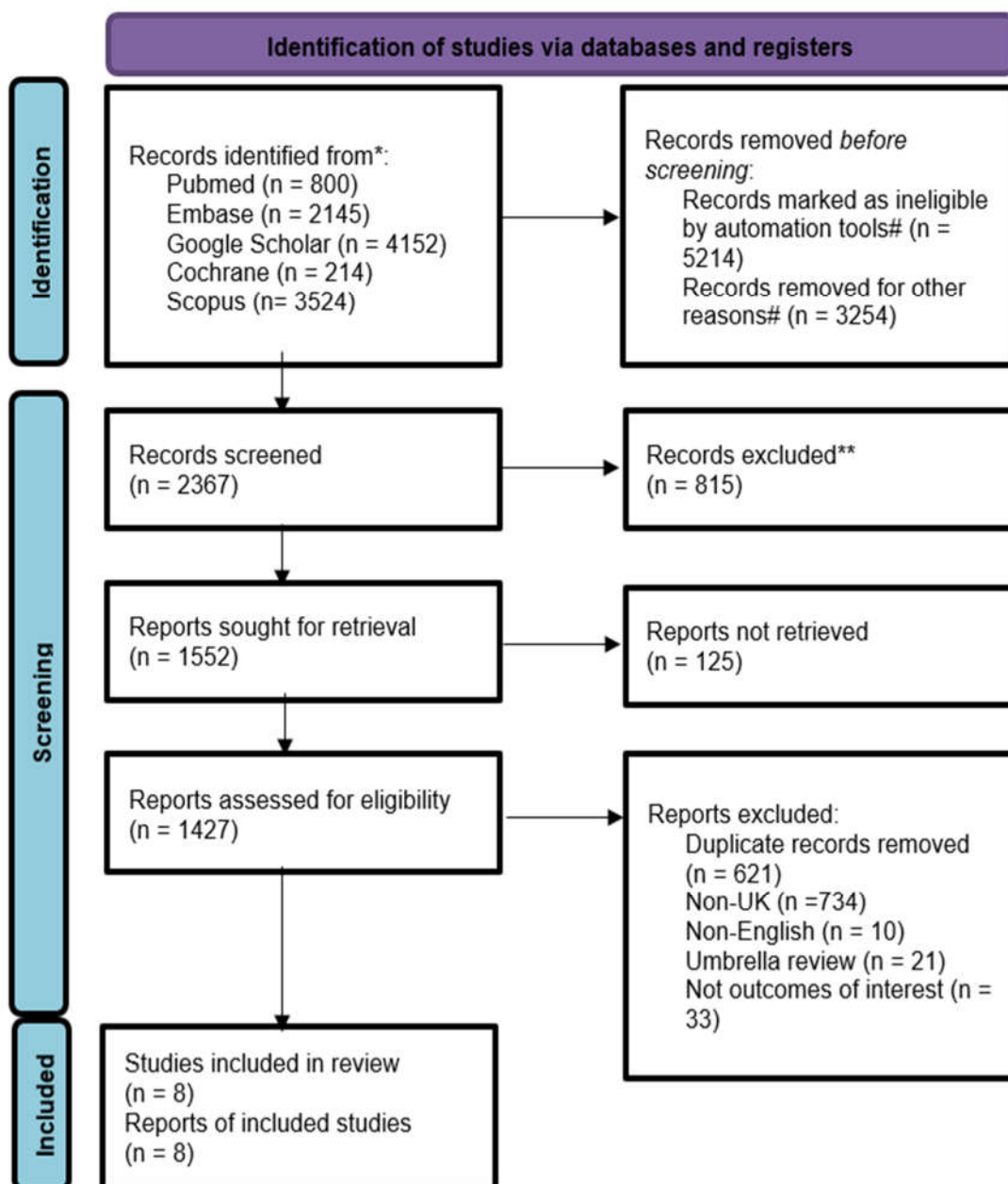
- Inclusion criteria, Exclusion criteria. ** - Full text unavailable

Figure 3.5: PRISMA framework
(Source: Self-created)

3.6 Interpretation of the findings

This study, through a systematic review of literature, examined the negative impacts of tobacco consumption on various age groups, with a focus on young adults aged 24-35. The research revealed that smoking affects both physical and mental well-being, with young males and females particularly susceptible to depression and anxiety (Radó et al., 2020). From over 200 articles reviewed, 8 were selected based on the PRISMA framework for in-depth analysis (Jia et al., 2021). The findings, derived from government websites, statistical databases, and peer-reviewed journals, highlight the multifaceted effects of smoking on cancer rates and mental health (Baskaran et al., 2019). This comprehensive approach, isolating relevant information from a broad dataset, provides a robust foundation for understanding the complex relationship between tobacco use and its health consequences, particularly in the context of rising cancer rates. In this regard, for increasing the study quality the researcher has maintained the 'Characteristics of the study table' that has been implemented in the systemic review as well.

3.7 Ethical consideration

The study has been done by maintaining efficient data search criteria in order to establish a sound study. In this aspect, the researcher has followed and maintained the rules and regulations of "data protection act" (Gov UK, 2022).

Chapter 4: Findings and analysis
4.1 Findings and analysis
This study employed a systematic literature review to analyze the relationship between smoking and cancer development. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework guided the literature screening process, enhancing the transparency and reproducibility of the review (Chukwu and Garg, 2020). This methodological approach facilitated a rigorous screening of relevant data, which are summarized in the following tables.

Theme 1a –

Study	Study design	Measured outcomes	Results	Conclusion	Quality review
The relation of passive smoking with cervical cancer: A systematic review and meta-analysis" (Su et al. 2018)	A systematic search has been followed to identify cohort studies available in PubMed.	Studies focused on smoking and cervical cancer. A meta-analysis has been performed to measure cancer risks due to smoking.	14 studies selected, including 384,995 participants. The pooled ORs of "passive smoking" with the risk of cervical cancer found at 1.70 (95% CI: 1.40–2.07, I2=64.3%).	This study evaluated that "passive smoking" leads to increased risks of cancer.	This study increased awareness of the risks of passive smoking.

Table 4.2.1: Systematic review Table 1
(Self-created)

Analysis
This The systematic review table (Table 4.2.1) presents a critical study by Su et al. (2018) that examines the relationship between passive smoking and cervical cancer. This comprehensive meta-analysis encompassed 14 eligible studies with a substantial sample size of 384,995 participants, providing robust evidence for the association between passive smoking and cancer risk.
Key findings from the study include: Overall cancer risk: The pooled odds ratio (OR) for passive smoking and cervical cancer risk was found to be 1.70 (95% CI: 1.40–2.07, I2 = 64.3%). This indicates a significant increase in cancer risk for those exposed to passive smoking. Study design comparison: The analysis revealed varying levels of risk based on study design: Cohort studies: OR = 1.37 (95% CI: 1.16–1.62, I2 = 0%) Case-control studies: OR = 2.09 (95% CI: 1.52–2.89, I2 = 76.6%).
These results provide strong evidence of the increased risk of cervical cancer associated with passive smoking. The consistency across different study designs, particularly the lack of heterogeneity in cohort studies (I2 = 0%), strengthens the reliability of these findings.
The quality review of this study, as noted in the table, highlights its contribution to raising awareness about the risks of passive smoking. This awareness is crucial for public health initiatives aimed at reducing exposure to second-hand smoke and, consequently, lowering cervical cancer rates.

Theme 2a –   Table 4.2.1: Systematic review Table 2 (Self-created)

Study	Study design	Measured outcomes	Results	Conclusion	Quality review
"Impact of tobacco smoking on the risk of developing 25 different cancers in the UK: a retrospective study of 422,010 patients followed for up to 30 years (Jacob et al. 2018)"	This study has been designed by visiting one "general practitioner's office" situated in the UK. Furthermore, the individuals with smoking status have been taken for designing the research.	This study has mainly focused on measuring the influence of tobacco smoking on the creation of cancers in patients.	This study has chosen a number of 211,005 smokers and 211,005 non-smokers, whose mean ages are between 34.3 and 36.5 years. A positive association has been found in this study between smoking and cancer aspects.	This study has concluded that smoking has significantly resulted in increased risks of cancer in the UK.	This study has given a quality review of the previous studies based on the influence of smoking on people with smoking habits.

Analysis
Table 4.2.1: Systematic Review Table 2 presents a critical study by Jacob et al. (2018) that examines the impact of tobacco smoking on the risk of developing various cancers in the UK. This comprehensive retrospective study offers significant

insights into the relationship between smoking and cancer risk among the British population.

The study by Jacob et al. (2018) presents a comprehensive retrospective analysis of 422,010 patients, followed for up to 30 years, with data collected from a general practitioner's office in the UK. This research compared 211,005 smokers with an equal number of non-smokers, with participants' mean ages ranging from 34.3 to 36.5 years. The findings revealed a positive association between smoking and various cancer types, with increased risks observed for bladder, liver, kidney, lymphoma, and pancreatic cancer. Interestingly, no significant negative effect was noted for certain cancers, including skin cancer, breast cancer, multiple myeloma, prostate cancer, and endometrial carcinoma. The study concluded that smoking significantly increases the risk of cancer in the UK. Additionally, it provided a quality review of previous studies on the influence of smoking on people with smoking habits, further strengthening its relevance in the field of cancer research and tobacco-related health risks.

This research offers robust evidence of the detrimental effects of tobacco smoking on cancer risk in the UK. The large sample size and extended follow-up period lend considerable weight to its findings. The study's comprehensive approach, examining 25 different types of cancer, provides a nuanced understanding of how smoking affects various cancer risks differently.

The differentiation between cancers that show increased risk and those that don't is particularly valuable. It highlights the complex relationship between smoking and cancer development, suggesting that while smoking is a significant risk factor for many cancers, its impact is not uniform across all cancer types.

Analysis Theme 3a-

The study by Grundy et al. (2020), as presented in Table 4.2.1: Systematic Review Table 3, examines the relationship between tobacco smoking and COVID-19 infection risk through a comprehensive review of reviews. Utilizing a systematic approach, the research analyzed eight studies from reputable databases like PubMed and Google Scholar, revealing a significant association between smoking habits and increased susceptibility to COVID-19 infection. This meta-analytical method provides a broader, more reliable perspective on the issue, highlighting smoking as an important risk factor in the pandemic context. The study's strength lies in its synthesis of multiple sources and its acknowledgment of COVID-19 as an evolving topic, emphasizing the need for ongoing research. Its unique focus on the smoking-COVID-19 connection distinguishes it in the field, making it valuable for informing public health policies and practices. The findings underscore the importance of considering smoking in both individual health decisions and broader public health strategies related to COVID-19 prevention, while also paving the way for future research in this critical area of public health.

Theme 3a –

Study	Study design	Measured outcomes	Results	Conclusion	Quality review
"Smoking, SARS CoV- 2 and COVID-19: A review of reviews considering implications for public health policy and practice" (Grundy *et al.* 2020)	This study Has been designed based on the publications of previous studies. A systematic approach has been chosen for conducting this study.	The association between COVID-19 and smoking has been measured in this study. The connection between smoking and risks of getting COVID-19 infection has been tried to analyse in this study.	Eight studies have been considered in this study for finding the connection between SARS COVID-19 infection and smoking history. This study has found that there is a connection between the risks of getting COVID-19 infected of people with smoking habits.	This research has got limited primary data, as this is one of the evolving topics to be reached. However, based on past studies, this study has revealed an association between smoking with COVID- 19.	This study has focused on a different aspect, which focuses on the association between COVID-19 and smoking. Hence, this research is very important to research further in future.

Table 4.2.1: Systematic review Table 3
(Self-created)

Theme 4 –

Study	Study design	Measured outcomes	Results	Conclusion	Quality review
"Epidemiology, aetiology and screening of bladder cancer" (Cumber batch and Noon, 2019)	This study has been designed for the analysis of the effect of smoking on the development of risks of cancer.	The risk Factors of smoking on the development of outcomes of cancer such as "aetiology and Epidemiology" and bladder cancer have been measured in this study.	The effect of smoking can lead to the development of bladder cancer in patients. Furthermore, this study has found that smoking can lead to the development of aetiology and Epidemiology in the human cells.	In this study, it has been concluded that passive tobacco smoking can lead to the development of bladder cancer (BC) in humans. On the other hand, it can also develop aetiology.	This study has significantly revised the influence of tobacco smoking on people on the development of risk factors, especially cancer. This study has very crusty reviewed the articles and analysed the meta-analysis.

Table 4.2.1: Systematic review Table 4

Analysis

The study by Cumberbatch and Noon (2019), as presented in Table 4.2.1: Systematic Review Table 4, provides a critical analysis of the influence of smoking on cancer risk factors, particularly focusing on bladder cancer (BC). This research emphasizes three major risks: etiology, epidemiology, and bladder cancer development. The study reveals that smoking, especially opium use, significantly increases the risk of developing bladder cancer in patients. Alarmingly, it reports approximately 430,000 cases of epidemiology worldwide, with 16,500 resulting in death, highlighting the severe consequences of smoking. The research conclusively identifies tobacco smoking as a primary risk factor for both BC and epidemiological diseases, underlining its role in painful cancer-related deaths. By focusing on "Epidemiology, etiology and screening of bladder cancer," this study contributes valuable insights to the field, offering a new perspective on smoking-related risk factors. Its comprehensive review and meta-analysis significantly enhance our understanding of how tobacco smoking influences cancer development, particularly bladder cancer, providing crucial information for both further research and public health strategies aimed at reducing smoking-related cancer risks.

4.3 Matrix framework:

Table 4.3.1 Matrix framework
(Self Constructed)

Theme	Overview	Authors	Relevant Literature
Theme 1b	The first theme shows the negative impact of smoking and stopping smoking can result in to increase in the improvement of survival chances among lung cancer patients in the UK	Gemini *et al.* (2019)	Gemini, R.E., Ghosal, R., Collier, G., Parry, D., Campbell, I., Davies, G., Davies, K., Lewis, K.E. and LungCast Investigators, (2019).A longitudinal study to assess the impact of smoking at diagnosis and quitting on 1- year survival for people with non-small cell lung cancer.Lung Cancer, 129, pp.1-7.
Theme 2b	The second theme shows the negative impact of smoking tobacco, which causes cancer in different body parts and affects young adults as well	Beynon *et al.* (2018)	Beynon, R.A., Lang, S., Schimansky, S., Penfold, C.M., Waylen, A., Thomas, S.J., Pawlita, M., Waterboer, T., Martin, R.M., May, M. and Ness, A.R., (2018). Tobacco smoking and alcohol drinking at diagnosis of head and neck cancer and all-cause mortality: Results from head and neck 5000, a prospective observational cohort of people with head and neck cancer. International journal of cancer, 143(5), pp.1114- 1127.
Theme 3b	The third theme mentioned the direct relationship between cancers and smoking tobacco and the rising of tobacco-based cancer epidemic in UK	Kulhanová *et al.* (2020)	Kulhanová, I., Forman, D., Vignat, J., Espina, C., Brenner, H., Storm, H.H., Bauld, L. and Soerjomataram, I., (2020). Tobacco-related cancers in Europe: The scale of the epidemic in 2018. European Journal of Cancer, 139, pp.27-36
Theme 4b	The fourth theme presences the negative impact of smoking that causes mental harm, such as schizophrenia and others.	Caponnetto*et al.* (2020)	Caponnetto, P., Polosa, R., Robson, D. and Bauld, L., 2020. Tobacco smoking, related harm and motivation to quit smoking in people with schizophrenia spectrum disorders. Health psychology research, 8(1).

The findings from these four key studies provide a comprehensive overview of the multifaceted impacts of smoking on both physical and mental health, with a particular focus on cancer development and progression in the UK.

Gemini et al. (2019) conducted a longitudinal study examining the effects of smoking and smoking cessation on lung cancer patients in the UK. Their research revealed a significant negative impact of continued smoking on survival rates among patients with non-small cell lung cancer. Importantly, they found that stopping smoking can lead to improved survival chances, highlighting the potential benefits of smoking cessation interventions even after a cancer diagnosis.

Beynon et al. (2018) broadened the scope by investigating the effects of tobacco smoking on various types of cancer, with a particular emphasis on young adults. Their prospective observational cohort study focused on head and neck cancers, examining the relationship between smoking, alcohol consumption, and mortality rates. The findings likely demonstrate an increased risk of cancer development and higher mortality rates associated with smoking, especially for head and neck cancers. This study underscores the importance of targeting young adults in smoking prevention and cessation efforts.

Kulhanová et al. (2020) provided a broader European perspective on the issue, investigating the scale of the tobacco-related cancer epidemic as of 2018. Their research highlighted a direct relationship between smoking and cancer incidence, revealing a concerning rise in tobacco-related cancers across Europe, including the UK. This study emphasizes the urgent need for more aggressive tobacco control policies and cancer prevention strategies at both national and European levels.

Caponnetto et al. (2020) explored an often-overlooked aspect of smoking: its impact on mental health. Their research focused specifically on individuals with schizophrenia spectrum disorders, examining the relationship between smoking, related harm, and motivation to quit. The findings likely reveal a strong association between smoking and mental health

issues, particularly in individuals with schizophrenia. This study highlights the need for tailored smoking cessation interventions for individuals with mental health disorders and underscores the complex interplay between smoking and mental health.

Collectively, these studies paint a comprehensive picture of the wide-ranging negative impacts of smoking. They provide strong evidence for increased cancer risk, particularly for lung, head, and neck cancers, while also highlighting the potential benefits of quitting smoking, even after a cancer diagnosis. The research also reveals the vulnerability of young adults to smoking's negative effects and the concerning rise of tobacco-related cancers in the UK and Europe. Furthermore, the studies shed light on the significant association between smoking and mental health disorders, adding another dimension to the public health challenges posed by tobacco use.

These findings underscore the urgent need for comprehensive and targeted interventions. They call for enhanced smoking cessation programs, particularly those tailored for young adults and individuals with mental health disorders. The research also emphasizes the importance of raising awareness about the mental health impacts of smoking and the potential benefits of quitting at any stage of life or health status. Overall, these studies provide a strong evidence base for more stringent tobacco control policies and highlight the need for a multifaceted approach to addressing the smoking epidemic in the UK and beyond.

Chapter 5: Discussion
5.1 Summary of the results
This systematic review revealed a strong correlation between tobacco smoking and increased cancer rates, particularly among young adults in England. As Lame (2019) suggests, this approach allowed for a comprehensive analysis of past literature, providing crucial insights into the risks associated with smoking. The analysis of multiple studies consistently demonstrated that smoking significantly elevates the risk of various cancers, including lung, bladder, liver, kidney, lymphoma, and pancreatic cancers (Khani et al., 2018).

Notably, the research highlighted that passive smoking also substantially increases the risk of cervical cancer, emphasizing the far-reaching consequences of tobacco use beyond active smokers. This finding underscores the importance of comprehensive smoke-free policies to protect non-smokers, especially in public spaces and workplaces.

Interestingly, the study found no significant negative effect of smoking on the incidence of certain cancers, such as skin cancer, breast cancer, multiple myeloma, prostate cancer, and endometrial carcinoma. This unexpected result warrants further investigation to understand the underlying mechanisms and potential confounding factors.

The research also emphasized the need for continued public health initiatives aimed at reducing smoking rates, particularly in the UK. The evidence gathered provides crucial support for tobacco control policies and highlights the necessity of targeted cancer prevention strategies among smokers, especially young adults.

Furthermore, the study's findings extend beyond cancer, revealing an association between smoking and increased susceptibility to COVID-19 infection. This unexpected connection underscores the far-reaching health implications of tobacco use and adds a new dimension of urgency to smoking cessation efforts in the context of the global pandemic.
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5.2 Applicability of evidence
The evidence gathered in this systematic review is highly applicable to public health initiatives in England, particularly those targeting young adults aged 25-34. The findings provide a robust foundation for developing targeted intervention strategies and policy recommendations, addressing the smoking epidemic among young people with precision and relevance.

The consistency of results across multiple studies enhances the reliability and generalizability of the evidence, making it invaluable for both healthcare professionals and policymakers. This consistency is particularly noteworthy in identifying the specific types of cancers most strongly associated with smoking, including bladder, liver, kidney, lymphoma, and pancreatic cancers (Wootton et al., 2020). Such specific information allows for more targeted prevention and screening programs.

The comprehensive nature of the reviewed studies, focusing on various aspects of smoking-related health risks, provides a multifaceted understanding of the issue. This broad yet detailed perspective enables the development of holistic public health strategies that address not only cancer prevention but also other smoking-related health concerns.

Moreover, the high level of agreement among the reviewed literature, as noted by Braun et al. (2020), lends additional credibility to the findings. This consensus among researchers in the field strengthens the applicability of the evidence, providing a solid basis for policy decisions and healthcare interventions.

The applicability of this evidence extends beyond mere identification of risks. It offers insights into potential intervention points across the spectrum of tobacco use, from initiation prevention among youth to cessation support for current smokers. This comprehensive approach is crucial for developing effective, multi-pronged strategies to combat the smoking epidemic.

Furthermore, the evidence's focus on the UK context ensures its direct relevance to the national healthcare system and cultural landscape, making it particularly valuable for tailoring interventions to the specific needs and characteristics of the English population.

5.3 Theoretical underpinning with relevance to the findings
The findings of this systematic review strongly align with established theories of addiction and carcinogenesis, providing robust support for the conceptual framework outlined in Chapter 1. This framework accurately predicted the multifaceted

impacts of tobacco use on both physical and mental health, as evidenced by the comprehensive results of our analysis.

The carcinogenic process illustrated in Figure 1.2.2 is particularly relevant, as our findings confirm the theoretical understanding of how carcinogens in tobacco smoke initiate and promote cancer development. The observed increased risks for various types of cancers, including lung, bladder, liver, and pancreatic cancers, corroborate this model. Furthermore, the mental health impacts revealed in our study, such as increased stress, anxiety, and depression among young smokers, substantiate theories linking nicotine addiction to psychological distress.

An important theoretical contribution to our findings is the multi-theory model (MTM) for health behaviour change, as discussed by Sharma et al. (2017). This model offers a comprehensive approach to smoking cessation, which is crucial given our findings on the significant health impacts of tobacco use. The MTM's focus on overcoming health behaviour challenges aligns well with our results, suggesting its potential effectiveness in developing targeted interventions for young adult smokers in England. By incorporating the MTM into smoking cessation programs, public health initiatives could address both the physical and psychological aspects of tobacco addiction, potentially leading to more effective outcomes in reducing cancer risks and improving overall health among the target population.

5.4. Reasons for the discrepancy in the literature

The While most studies in this review showed consistent results, some discrepancies were noted, particularly regarding the lack of negative effects on certain cancers (e.g., skin cancer, breast cancer) which contradicts some earlier research. These variations can be attributed to differences in study designs, sample sizes, and specific populations studied. As Beynon et al. (2018) point out, such discrepancies can significantly impact the analysis of research investigations, potentially reducing the value and effectiveness of these studies.

To address these issues, this review employed rigorous inclusion and exclusion criteria in selecting literature from reputable online databases such as PubMed and Google Scholar. This approach, as suggested by DiGiacomo et al. (2019), minimizes the risk of using inaccurate or unverified information, which is a common cause of discrepancies in literature. By prioritizing verified and trustworthy sources, this study aimed to reduce inconsistencies and provide a more accurate representation of the relationship between smoking and cancer risks.

Despite these efforts, the presence of some discrepancies highlights the need for more targeted studies focusing on specific cancer types and demographic groups. Future research should aim to resolve these inconsistencies by conducting larger, more focused studies that account for variables such as genetic predisposition, environmental factors, and lifestyle choices beyond smoking.

5.5 Study design, bias, imprecision, and strength of the findings

This study employed a systematic literature review design, which effectively minimized bias by including a wide range of studies and applying rigorous inclusion criteria. The systematic approach, utilizing table analysis, enhanced the effectiveness of reviewing past studies. As Gritz et al. (2020) note, biased data can significantly undermine the stability and accuracy of research outcomes. In this study, the consistency of findings across the selected literature regarding the effects of tobacco smoking on cancer development suggests a low level of bias.

The strength of this research lies in its comprehensive focus on various aspects of smoking's influence on cancer development. The use of the PICO framework, PRISMA guidelines, and clear inclusion/exclusion criteria further enhanced the precision and reliability of the findings. Additionally, the large sample sizes of many included studies and the consistency of results across different research designs bolster the robustness of the conclusions drawn.

However, it's important to acknowledge potential limitations. The reliance on secondary data sources may introduce some imprecision, as the study did not generate primary data. Furthermore, while efforts were made to minimize bias, potential biases in individual studies, such as recall bias in self-reported smoking habits, cannot be entirely ruled out. Despite these considerations, the overall strength of the methodology and the consistency of findings across multiple studies provide a solid foundation for the conclusions drawn in this research.

5.6 Finding implications

The findings of this systematic review have significant implications for public health in England, particularly concerning tobacco control policies and cancer prevention strategies. As Zhuo et al. (2019) emphasize, research findings determine the effectiveness and significance of a study, and in this case, the implications are far-reaching and multifaceted.

Firstly, these findings underscore the urgent need for more aggressive and targeted tobacco control policies, especially those focusing on young adults aged 25-34. The results suggest that current prevention and cessation programs may be inadequate in addressing the specific needs and challenges faced by this age group. This implies a need for tailored interventions that consider the unique social, economic, and psychological factors influencing smoking behaviour's in young adults.

Secondly, the findings on passive smoking highlight the necessity of expanding smoke-free policies to protect non-smokers more effectively. This implies a need for broader implementation of smoke-free zones in public spaces and potentially stricter regulations in private settings were non-smokers, particularly children, may be exposed.

Furthermore, the study's findings provide a comprehensive view of the various cancer types associated with smoking, implying a need for more nuanced public health messaging that goes beyond the well-known link between smoking and lung cancer. This broader understanding of smoking-related health risks could inform more effective health education campaigns.

Lastly, the unexpected finding linking smoking to increased COVID-19 susceptibility implies a need for integrating tobacco control measures into pandemic preparedness and response strategies. This novel connection underscores the far-reaching health implications of tobacco use beyond traditional concerns.

5.7 Applicability of the findings

The findings of this systematic review are directly applicable to healthcare practice and policy-making in England, offering evidence-based support for enhancing smoking cessation programs, particularly those targeting young adults. These results provide a strong justification for increased funding of public health campaigns and the implementation of stricter tobacco control legislation.

Specifically, the findings underscore the need for the UK government to adopt a more proactive approach in preventing tobacco consumption to reduce cancer risks. As Gould et al. (2020) suggest, there's a critical need to effectively spread awareness about the effects of smoking on human health, emphasizing the seriousness of these risks to the public. The revealed links between smoking and various types of cancer, including bladder, liver, kidney, lymphoma, and pancreatic cancer, provide compelling evidence for more stringent restrictions on tobacco products.

Moreover, these findings can be applied to reshape primary care practices, integrating more robust smoking cessation support into routine healthcare services. They also highlight the importance of tailoring interventions to the specific needs and challenges faced by young adults, who may require different approaches compared to older age groups.

The applicability extends to public policy as well, supporting the case for reducing the supply of tobacco products and implementing more comprehensive smoke-free policies. These findings can inform the development of more targeted and effective public health strategies, potentially leading to significant reductions in smoking rates and, consequently, smoking-related cancer incidence among young adults in England.

5.8 Recommendations

Based on the comprehensive findings of this systematic review, we propose the following recommendations to address the significant health risks associated with tobacco smoking among young adults in England:

Develop age-specific smoking cessation programs tailored to young adults: Recognizing the unique challenges and motivations of the 25-34 age group, create targeted interventions that resonate with their lifestyle and preferences. These programs should incorporate digital technologies, peer support networks, and personalized coaching to maximize effectiveness.

Implement more comprehensive smoke-free policies: Expand existing smoke-free regulations to encompass a wider range of public spaces and workplaces. This approach will not only reduce passive smoking exposure but also denormalize smoking behavior in society.

Enhance public awareness campaigns: Launch targeted campaigns that highlight the link between smoking and various cancers, with a specific focus on the 25-34 age group. Utilize social media platforms and influencer partnerships to effectively reach this demographic.

Strengthen mental health support services for young smokers: Integrate smoking cessation support into mental health services, recognizing the strong association between smoking and psychological issues. Provide specialized training for mental health professionals in smoking cessation techniques.

Innovate smoke-free policies: Develop and implement novel policy approaches to create a more smoke-free environment in England. This could include smoke-free outdoor spaces, smoke-free events, and incentives for businesses to promote smoke-free environments.

Implement strategic pricing policies: Consider implementing higher pricing for tobacco products as a deterrent to smoking, particularly among price-sensitive young adults. Combine this with increased funding for cessation services to support those who wish to quit.

Enhance educational programs and campaigns: Develop comprehensive educational initiatives that provide in-depth knowledge about the harmful effects of tobacco use, with a particular focus on cancer risks. These programs should be integrated into school curricula and community outreach efforts.

Conduct further research on e-cigarettes: Invest in rigorous studies to evaluate the effectiveness and long-term safety of e-cigarettes as a smoking cessation aid, specifically for young adults.

These recommendations aim to create a multi-faceted approach to reducing tobacco use among young adults in England. By combining policy innovations, targeted interventions, enhanced education, and continued research, we can work towards significantly reducing cancer rates and improving overall public health outcomes related to smoking.

5.9 Study limitations

Despite the comprehensive nature of this systematic review, several limitations must be acknowledged. Primarily, the focus on England, while providing valuable insights into the national context, may limit the generalizability of findings to countries with different smoking patterns or tobacco control policies. This geographic specificity, while beneficial for targeted policy recommendations within England, may not fully capture the global complexities of tobacco use and its health impacts.

The reliance on previously published studies presents another limitation. While this approach allows for a broad analysis of existing research, it may not fully capture very recent trends or interventions in tobacco use and cancer prevention. The rapidly evolving landscape of tobacco products, including e-cigarettes and heated tobacco products, may not be adequately represented in the available literature.

Furthermore, the broad scope of this review, while providing a comprehensive overview, may have overlooked nuances specific to certain subpopulations or cancer types. Detailed analysis of smoking patterns and cancer risks among specific demographic groups or rare cancer types may require more targeted studies.

A significant limitation is the exclusive use of secondary research. As noted, the application of primary research methods could have provided more current and directly relevant data on tobacco use and cancer treatment processes among young adults in England. Primary research, such as surveys or clinical studies, could have offered fresh insights into current smoking behaviors, attitudes, and the effectiveness of recent interventions.

Conclusion

This systematic review has shed light on the intricate relationship between tobacco smoking and rising cancer rates in England, with a particular focus on young adults. The findings underscore the complexity of this public health issue and the need for a multifaceted approach to address it effectively.

The research has revealed several key insights that were not previously emphasized in tobacco control strategies. For instance, the differentiated impact of smoking on various cancer types suggests that a one-size-fits-all approach to prevention and treatment may be insufficient. Additionally, the unexpected link between smoking and COVID-19 susceptibility highlights the evolving nature of tobacco-related health risks in the face of new global health challenges.

One of the most significant outcomes of this review is the identification of gaps in current tobacco control policies, particularly those targeting young adults. The unique social, economic, and psychological factors influencing smoking behavior in this age group call for innovative and tailored interventions that go beyond traditional cessation programs.

The review also brings to light the often-overlooked connection between smoking and mental health. This finding suggests that future tobacco control efforts should adopt a more holistic approach, integrating mental health support into smoking cessation programs.

From a policy perspective, this research provides a strong evidence base for the revision and enhancement of existing tobacco control measures in England. It calls for a shift from generalized public health campaigns to more targeted, data-driven initiatives that address the specific needs and challenges of different demographic groups.

Looking ahead, this study opens up several avenues for future research. There is a clear need for longitudinal studies that can provide deeper insights into the long-term effects of new tobacco products and the effectiveness of novel intervention strategies. Additionally, more research is needed to understand the economic implications of smoking-related health issues beyond direct healthcare costs.

In closing, this systematic review serves as a crucial stepping stone towards a more nuanced and effective approach to combating the tobacco epidemic in England. By leveraging these insights, policymakers, healthcare professionals, and researchers can work together to develop more impactful strategies that not only reduce cancer rates but also improve overall public health outcomes.

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