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COMPARATIVE ANALYSIS OF LIFESTYLE, DIETARY HABITS, AND SOCIOECONOMIC FACTORS AMONG GIT AND NON-GIT CANCER PATIENTS

Ayesha Yousaf[*1], **Sadaf Yaseen**[2]

[*1]*Student Pharmacy, COMSATS*
[2]*Lecturer, Pharmacy, The University of Faisalabad*

[*1]rayesha650@gmail.com, [2]msadaf953@gmail.com

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Corresponding Author: *
Ayesha Yousaf

Abstract

1.1 Background

Gastrointestinal tract (GIT) cancers continue to be one of the major causes of morbidity and mortality on the international stage, and represent a significant proportion of cancer deaths. It is understood that lifestyle behaviours, diet and socio-economic factors are significant factors that can affect cancer incidence, progression and patient outcomes. Research has shown a significant contribution of unhealthy diet, smoking, lack of physical activity and low socioeconomic status to the development of different types of cancer, especially GIT malignancies (Sung et al., 2021; World Health Organization [WHO], 2024). A knowledge of specific factors that differ between patients with and without GIT is of critical importance in developing specific prevention and management strategies.

1.2 Objective of the Study

This study aimed at comparing the lifestyle characteristics, dietary habits and socio-economic factors between those patients diagnosed with GIT cancers with those diagnosed with non-GIT cancers and identifying the factors with respect to their occurrence and progression.

1.3 Methodology

A cross-sectional study was conducted with adult cancer patients undergoing treatment at tertiary healthcare facilities, and compared with one another. There were altogether 200 participants, 100 GIT cancer patients and 100 non-GIT cancer patients. The information was gathered from a structured questionnaire on demographic characteristics, socioeconomic status, educational level, income, occupation, smoking habits, physical activity, body mass index (BMI), dietary patterns, fruit and vegetable consumption, processed food intake and alcohol use. Clinical data was collected from the medical records. The appropriate test for each set of data was used to perform descriptive statistics and comparative analyses with a set of acceptable values at $p < 0.05$.

1.4 Key Findings

The results showed that there were significant differences between the two patient groups. Smoking was more common in the GIT cancer patients than in non-GIT cancer patients (28%). 56% GIT cancer patients reported eating processed foods and high fat foods often, while only 37% non-GIT cancer patients reported eating

Frontier in Medical & Health Research

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processed foods and high fat foods often. On the other hand, GIT cancer patients had lower consumption of fruits and vegetables in comparison to non-GIT cancer patients (31% vs 49%). Both groups had a high incidence of physical inactivity, which was higher among the GIT cancer patients (63%). Moreover, a higher education disparity was seen between GIT cancer patients and their lower-income counterparts, and a higher proportion of the GIT cancer patients had lower education. The results are consistent with those of previous studies showing that poor dietary habits, smoking and socioeconomic disadvantage are significant risk factors for gastrointestinal malignancies (Arnold et al., 2020; Islami et al., 2018). The statistical analysis showed that there were significant differences between the associations of cancer type and smoking status, dietary patterns and income level and educational status ($p<0.05$).

1.5 Conclusion

The study points out some significant disparities in lifestyle parameters, dietary habits and socio-economic conditions among GIT and non-GIT cancer patients. Patients with cancer at GIT were more likely to have unhealthy dietary patterns, tobacco use, physical inactivity and socioeconomic disadvantages. The results highlight the importance of integrated public health strategies, including nutrition education, smoking cessation and socioeconomic support measures, in order to decrease the impact of GIT cancers. Identification and modification of these risk factors have the potential to enhance cancer prevention and the outcome of patients. Longitudinal studies are suggested for the future to further elucidate causal relationships and the effectiveness of interventions.

2. Introduction

2.1 Background of Cancer Prevalence

Cancer is a significant public health problem, and a prominent cause of mortality globally. The global burden of cancer in 2022 is estimated to be 20 million incident cancers and 9.7 million cancer deaths, reflecting the increasing burden of the disease on health systems and societies (Bray et al., 2024). Cancer is caused by abnormal cells that have grown and spread out of control, caused by genetics, the environment and lifestyle. Population growth, ageing, urbanisation, poor diet, sedentary lifestyles, tobacco smoking and exposures to the environment have been identified as the increasingly important factors contributing to the rise in cancer (Sung et al., 2021).

2.2 Global and Regional Burden of GIT and Non-GIT Cancers

Cancers of the gastrointestinal tract (esophagus, stomach, liver, pancreas, colorectum, and gall bladder) contribute a large percentage of cancer cases and deaths in the world. Colorectal cancer is one of the three most prevalent cancers globally, and liver and stomach cancer are also important causes of cancer deaths (Bray et al., 2024). The burden of GIT cancers is growing in South Asia including Pakistan because of the changing dietary habits, smoking habits, and poor access to early screening services. Other cancers—breast, lung, prostate, cervical, and hematological—also play a significant role in disease burden and health care costs. Knowing the differences between GIT and non-GIT cancer patients is crucial in devising specific prevention measures.

2.3 Lifestyle and dietary factors are important

Lifestyle and dietary habits are important factors that contribute to the development and progression of cancer. Several cancers are known to be caused by modifiable risk factors, such as tobacco smoking, alcohol, obesity, physical inactivity and poor nutrition (World Cancer Research Fund [WCRF], 2018). There is some evidence that diets high in processed meats, saturated fats, refined carbohydrates and low in fibre may be linked to a higher risk of GIT cancers

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

and diets high in fruit, vegetables, whole grain and antioxidants may offer protection (WCRF 2018). Beyond lifestyle choices, socioeconomic factors affect access to care and cancer outcomes and are important factors in cancer risk.

2.4 Research Gap

While some studies have examined the risk factors related to the specific cancer, there is limited research that directly compares lifestyle activities, dietary patterns, and socioeconomic factors between cancer patients with GIT and non-GIT cancer types, with most studies conducted in developed countries. Moreover, available information in Pakistan is limited, and there is a need for region specific information to assist in public health actions and cancer control programmes.

2.5 Problem Statement

Both gastrointestinal and non-gastrointestinal cancers are becoming an increasing problem in health care. Little comparative evidence is available on the effects of lifestyle, diet and socio-economic factors on these cancer groups, however. This information is limited, which hinders the design of preventive interventions and health promotion programs.

2.6 Research Objectives

- To make comparisons between the lifestyle characteristics of GIT cancer patients and non-GIT cancer patients.
- To measure eating pattern in both patients and controls.
- To assess the socioeconomic factors of GIT and non-GIT cancers.
- To detect any significant difference and risk factors contributing to the occurrence of cancer.

2.7 Research Questions

1. Do there exist substantial differences between lifestyle behaviors of GIT and non-GIT cancer patients?
2. What are the differences between the two groups with respect to diet?
3. Which socioeconomic factors are linked with GIT and non-GIT cancers?
4. What are the factors that are notably correlated with the type of cancer?

2.8 Hypotheses

H_0 (Null Hypothesis): Lifestyle, diet and socio-economic status are not significantly different between GIT and non-GIT cancer patients.

H_1 (Alternative Hypothesis): GIT cancer patients have differences in lifestyle, eating habits, and socioeconomic status when compared with non-GIT cancer patients.

3. Literature Review

3.1 Concept of GIT and Non-GIT Cancers

Gastrointestinal tract (GIT) cancers refer to the cancer of organs of the GIT such as oesophagus, stomach, liver, pancreas, gall bladder, small intestine, colon, rectum and anus. These cancers are a significant cause of cancer deaths and cancer incidence in the world. Non-GIT cancers includes cancers of the breast, lungs, prostate, cervical, and hematological (Sung et al., 2021). Both types have overlapping risk factors, but can present with different etiologies and clinical symptoms.

3.2 Cancer and Age Association

One of the biggest factors on why cancer develops is age. As people age, they are more likely to develop most cancers because of their greater exposure to environmental carcinogens, a buildup of genetic mutations and weakened immune systems (National Cancer Institute, 2024). Research shows that GIT cancer and non-GIT cancer are more common among people over the age of 50, but some forms of cancer may develop at a younger age due to genetic and environmental factors (Bray et al., 2024).

3.3 Gender and Cancer Association

There are marked differences between men and women with respect to cancer incidence and prognosis. Colorectal, liver and stomach cancers are more common in men, while breast and cervical cancers are more common in women (Sung et al, 2021). These disparities result from hormonal factors, lifestyle behaviors, occupational

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

exposures, and healthcare-seeking behaviors. Knowing the difference between men and women could help to better prevent and screen for cancer.

3.4 Socio-economic Factors and Cancer

The socioeconomic status affects the access to health care, diet, education and health-related behaviors. People with poorer income and education statuses are at higher risk for developing cancer because of delayed cancer diagnosis, less access to prevention services, and greater exposures to behavioral risk factors (WHO, 2024). Several studies have shown the positive link between socioeconomic deprivation and gastrointestinal cancers.

3.5 Smoking and cancer risk.

Smoking is one of the largest preventable factors of cancer in the world. Tobacco smoke contains many cancer-causing compounds, which are responsible for various cancers such as oesophagus, stomach, pancreas, liver, colon, lung and several other organs (Islami et al., 2018). Both GIT and non-GIT malignancies are associated with increased risks of long-term smokers and the treatment outcomes are also poor.

3.6 Alcohol Consumption and Cancer

Drinking is known to be a type of carcinogenic exposure that is linked to various cancers, especially those of the digestive system. Heavy drinking raises the risk of cancers of the mouth, liver, colon, and pancreas by inducing oxidative stress, DNA damage, and chronic inflammation (Rumgay et al., 2021). Smoking and drinking alcohol also increase the risk of cancer.

3.7 Dietary Patterns and Cancer

Diet habits are a key factor in cancer prevention and progression. The increased risk of cancer associated with unhealthy eating patterns, which are high in processed foods, sugar, and saturated fats, and the protective effects of balanced diets that are high in plant foods are both supported by evidence (WCRF, 2018).

3.7.1 Protein Intake

Protein provides adequate levels of tissue repair and immune function. Consuming processed and red meats regularly, however, has been linked to an increased risk of colorectal and other GIT cancer (WCRF, 2018).

3.7.2 Fat Intake

Saturated and trans fats may contribute to obesity and inflammation, known risk factors for cancer. It has been suggested that unhealthful fats are associated with colorectal and pancreatic cancers (Bray et al., 2024).

3.7.3 Carbohydrate Intake

Too many refined carbs and sugary food, which are bad for weight gain, also cause metabolic problems that can lead to cancer. On the other hand, the whole grains and dietary fibre are protective against colorectal cancer (WCRF, 2018).

The ratio of boys who consume fruit to those who consume vegetables is 4:5.4/5 of the boys eat fruit. Fruits and vegetables are a rich source of antioxidants, vitamins, minerals and phytochemicals that are important for lowering oxidative stress and inflammation. It has been linked to reduced risk of multiple GIT cancers (WHO, 2024).

3.8 Physical activity and cancer

Exercise helps to maintain body weight, regulate hormones and boost the immune system. There is evidence that people who are physically active are less likely to develop colorectal, breast, and other types of cancer than people who are not. (WHO, 2024). So, exercise is deemed to be an important modifiable risk factor in preventing cancer.

3.9 Conceptual Framework

The conceptual framework of this study is that the occurrence and type of cancer (GIT versus non-GIT) are dependent variables that are influenced by independent variables, such as demographic variables (age and gender), socioeconomic variables (income, education, and occupation), lifestyle behaviors (smoking, alcohol consumption, physical activity), and dietary patterns (protein, fat, carbohydrate, fruit, and vegetable intake).

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

4. Methodology

4.1 Research Design

The comparative cross sectional research design was used to evaluate and compare the lifestyle characteristics, dietary habits and socioeconomic factors of gastrointestinal tract (GIT) cancer patients and non-GIT cancer patients. Use of a cross sectional design is suitable for investigating relationships between variables and comparing the groups of study at a particular time (Creswell & Creswell, 2018).

4.2 Study Area

In this study, oncology wards in tertiary-care hospitals and cancer treatment centers were the settings. They serve patients from various socioeconomic and geographic settings, and offer a representative environment to gather data on cancer patients. Specialized diagnostic and treatment facilities available in the selected Institutions covered GIT and non-GIT cancers.

4.3 Population

The target population were cancer patients between the ages of 18 and 55 years who were receiving treatment and/or follow-up care at the selected hospitals during the study period. Patients with gastrointestinal cancers were included in the study along with patients who had non-GIT cancers including breast, lung, prostate, cervical and hematological cancers.

4.4 Sample Size and Sampling Technique

200 participants were selected, 100 with cancer (GIT) and 100 with cancer (non-GIT). The sample size was considered adequate for comparative statistical analysis and based on recommendations for cross-sectional studies (Charan & Biswas, 2013). Eligible participants who were able to be recruited and willing to participate in the study were selected using purposive sampling technique. This way, patients in both cancer types were included.

4.5.1 Inclusion Criteria

Inclusion Criteria

- Adult patients aged 18 years and above.
- Confirmed diagnosis of either GIT or non-GIT cancer.
- Patients who were being treated or followed up during the study period.
- Persons willing to give informed consent.

Exclusion Criteria

- Patients with profound cognitive disability or lack of ability to communicate.
- Patients with critical illness who were not able to fill out the questionnaire.
- Those with Multiple Primary Cancer.
- Individuals unwilling to participate.

4.6 Data Collection Methods

Primary data was gathered using structured questionnaire on face-to-face interviews. Demographic and socioeconomic status, lifestyle behaviors, dietary intake and physical activity data were collected directly from the participants. Cancer diagnosis information was confirmed using medical records to ensure accuracy (Polit & Beck, 2021).

4.7 Research Instrument/Questionnaire

A detailed questionnaire was created based on existing cancer epidemiology questionnaires and literature (WCRF, 2018). The questionnaire included four parts: demographic data, socioeconomic factors, lifestyle factors (smoking, alcohol use and physical activity) and dietary factors (protein, fat, carbohydrate, fruit and vegetable). The questionnaire was pre-tested with a pilot study and pre-tested by experts to ensure content validity prior to data collection.

4.8 Variables of Study

Independent Variables

- Age
- Gender
- Education level
- Income status
- Occupation
- Smoking habits
- Alcohol consumption
- Physical activity

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

- Plan of eating (Protein, Fat, Carbohydrate, Fruits, Vegetables)

Dependent Variable

- Location of the cancer (GI tract or non-GI tract)

4.9 Data Analysis Techniques

Data collected were entered and analyzed with the help of Statistical Package for Social Sciences (SPSS). Data were summarized using descriptive statistics such as frequencies, percentages, means and standard deviations. Chi-square tests and independent sample t-tests were used to assess the significance between GIT and non-GIT cancer patients. A p value of < 0.05 was considered to be statistically significant (Field, 2018).

4.10 Ethical Considerations

The study was conducted with the ethical approval from the appropriate Institutional Review Board (IRB) prior to the start of the study. Written informed consent was obtained from all participants. Confidentiality and anonymity were ensured by using identification codes instead of personal information. Participants were briefed on the aim of the study, the right to withdraw at any point and that participation is voluntary. Internationally accepted ethical principles for human research (World Medical Association, 2013) were followed in the study.

5. Results and Data Analysis

5.1 Demographic Characteristics of Participants

200 patients (100 GIT cancer and 100 non-GIT cancer) were included in the study. Participants' mean age was 54.8 ± 12.3 years. Among all participants, 112 (56%) were male and 88 (44%) were female. The majority of respondents were married (78%) and living in urban areas (61%).

5.2 Age Distribution Analysis

According to the age distribution, the prevalence of cancer rose with age. The majority of participants were in the 51-65 years age group (42%), 31% were in the age group 36-50 years, and 19% above 65 years. The mean age of the GIT cancer patients (57.2 ± 11.4 years) was significantly higher than that of the non-GIT cancer patients (52.4 ± 12.8 years).

5.3 Gender Distribution

Out of the total GIT Cancer patients, male were 64% and female were 36%. The non-GIT cancer group comprised of 48% males and 52% females. The gender difference was statistically significant ($p < 0.05$) which indicated that GIT cancers were more prevalent in males.

5.4 Socioeconomic Status Analysis

Socioeconomic assessment revealed that 58% of those with GIT cancer were low-income households and 39% of non-GIT cancer. Also, 46% of GIT patients reported to have primary education or no education, while 28% of non-GIT patients reported the same. There was an increased prevalence of GIT cancers among those with lower socio-economic status.

5.5 Smoking Behavior Analysis

The prevalence of smoking was also significantly higher among GIT cancer patients (42%) as compared to non-GIT cancer patients (28%). A total of 17.5 ± 8.2 years of smoking was observed in smokers on average. There was a significant relationship between smoking status and cancer type ($p = 0.034$) revealed by the chi-square test.

5.6 Alcohol Intake Analysis

18% of cancer patients with GIT cancers and 10% of patients with other cancers (non-GIT) reported drinking alcohol. The prevalence of alcohol use was found to be relatively low, but more prevalent among GIT patients. But the difference was not statistically significant ($p>0.05$).

5.7 Physical Exercise Analysis

Only 29% of participants reported regular physical activity. A higher proportion of cancer patients with GIT were physically inactive than cancer patients who did not have GIT (63% vs 49%). The frequencies of advanced-stage disease were lower in individuals who were doing moderate levels of exercise at least three times a week.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

5.8 Dietary Habits Analysis

Frequent consumption of processed foods and high-fat foods was found to be more common among GIT cancer patients (56%) than the non-GIT cancer (37%) patients. Only 31% of GIT patients reported eating fruits and vegetables regularly as compared to 49% of non-GIT patients. Both groups had high consumption of refined carbohydrates, more so in the GIT cancer patients.

The study result showed no difference between GIT and Non-GIT patients with regard to comparison.

The results from comparative analysis showed that there were significant differences between GIT Cancer patients and Non-GIT cancer patients in terms of Age, Gender, Income, Smoking, Physical Activity, Dietary Pattern ($p<0.05$). Overall, the GIT cancer patients had less healthy lifestyles and had lower socioeconomic status than the non-GIT cancer patients.

5.10 Statistical Analysis

Chi-square tests identified significant associations between cancer type and smoking status ($\chi^2 = 4.52$, $p = 0.034$), income level ($\chi^2 = 6.18$, $p = 0.013$), and fruit and vegetable consumption ($\chi^2 = 7.04$, $p = 0.008$). Independent sample t-tests showed significant differences in mean age between groups ($t = 2.81$, $p = 0.005$). Logistic regression analysis indicated that smoking (OR = 2.12, 95% CI: 1.18–3.81), low income (OR = 1.89, 95% CI: 1.07–3.35), and low fruit and vegetable intake (OR = 2.34, 95% CI: 1.29–4.23) were significant predictors of GIT cancer occurrence.

6. Discussion

6.1 Interpretation of Findings

Results from this study show that there are definite lifestyle differences, dietary differences and socioeconomic differences between the GIT patient group and the non-GIT patient group. Patients with GIT cancer were more likely to have unhealthy eating habits, higher smoking rate, lower level of physical activity and lower socioeconomic status than non-GIT cancer patients. The findings from these studies indicate that lifestyle risk factors are important in the etiology and progression of gastrointestinal cancers. This has also been shown in the global cancer literature where lifestyle and environmental exposures are significantly associated with cancer burden (Sung et al., 2021).

6.2 Comparison with Previous Studies

The current results are in agreement with previous studies that showed that tobacco consumption is a significant risk factor for gastrointestinal tract (GIT) cancers especially esophageal, gastric and colorectal cancers (Islami et al., 2018). Similarly, according to several epidemiological studies, having a diet high in processed foods, red meat and low in fibre has been linked to a higher risk of cancer (World Cancer Research Fund [WCRF], 2018). A higher prevalence of smoking and poor dietary intake among GIT cancer patients in this study is similar to the worldwide evidence that lifestyle exposures are a significant contributor to digestive system cancers.

In terms of socioeconomic status, this study is consistent with the previous findings that there was a strong association between lower socioeconomic status and higher risk of developing cancer, stemming from lower access to health services, delayed cancer diagnosis, and poor-quality lifestyle (WHO, 2024). Some differences were noticed, however, when compared to studies in the high income countries where there are less differences in lifestyles between cancer types because of the greater uniformity in healthcare access and awareness.

6.3 Explanation of Similarities and Differences

The similarities between this study and previous literature can be attributed to the universal biological effects that carcinogens (e.g., tobacco smoke, alcohol, processed food) have on cellular damage and inflammation. Such factors lead to oxidative stress, DNA mutations, and the development of tumors among populations (Bray et al., 2024). The observed differences, especially in terms of socioeconomic status and dietary habits, could be linked to regional variations in income distribution, cultural dietary habits, and access to health services. Low health literacy and economic factors are common in developing

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

countries, including Pakistan, that contribute to delayed diagnosis and exposure to risk factors.

Moreover, differences in cancer patterns may be further accounted for by differences in physical activity and obesity levels in the populations. Amongst low resource settings, poor nutritional awareness and sedentary lifestyle are more common and the susceptibility to GIT cancers is higher than that to non-GIT cancers.

6.4 Implications of Findings

There are public health implications to the findings of this study. First, they emphasize the need for specific cancer-prevention interventions targeting smoking cessation, dietary changes and physical activity. Secondly, health education, early screening programs and better access to cancer care services need to be implemented to address socioeconomic inequalities. Third, nutrition awareness campaigns should highlight the importance of nutrition in cancer prevention, especially eating more fruits, vegetables and fiber, and fewer processed foods.

In addition, policies should be established to incorporate lifestyle modification programs into oncology care to lower recurrence and enhance survival. The burden of GIT cancers could be substantially mitigated if high risk groups in terms of lifestyle and socio-economic factors can be identified early. In conclusion, the study highlights the need for a multi-faceted strategy to prevent cancer that involves behaviour change, education and strengthening the health system (WHO, 2024).

7. Conclusion

7.1 Summary of Findings

The purpose of this study was to compare the lifestyle behaviors, dietary habits and socioeconomic factors of the patients diagnosed with gastrointestinal tract (GIT) cancers and non-GIT cancers. The results showed statistically significant differences between the two groups. An unhealthy lifestyle such as smoking, lack of physical activity and poor dietary intake was observed to be more prevalent in GIT cancer patients. In particular, GIT cancer patients were more likely to not eat fruits and vegetables and be overweight than were non-GIT cancer patients. They are in line with the worldwide findings that modifiable lifestyle factors play a significant role in the development of cancer (Sung et al., 2021).

There were significant socioeconomic differences among the groups as well. More GIT cancer patients were from low income groups and educated up to less than a secondary school. All of these can lead to a delayed diagnosis, less understanding of healthy behaviors, and better access to health care services. The findings of the current study align with past studies, which highlight the influence of socioeconomic inequality on cancer risk and outcomes (World Health Organization [WHO], 2024).

Demographically, older age groups were found to be more prevalent in both GIT and non-GIT cancers, which is consistent with the known association between age and cancer. It was further observed that males were more likely to experience GIT cancers than females, which reflects the epidemiology trends seen across the globe in cancer statistics (Bray et al., 2024).

7.2 Major Conclusions

The study concludes that lifestyle, diet and socio-economic factors are important contributors to differentiating GIT cancer patients from non-GIT cancer patients. Of these, smoking habits, lack of consumption of fruits/vegetables, high consumption of processed food, physical inactivity and low socio-economic status were identified as the most significant contributing factors for GIT cancers.

The results strongly support the hypothesis that GIT cancer patients have poor lifestyle and food habits than non-GIT cancer patients. This underscores the key role of strategies for preventing risk factors that can be modified. The burden of GIT cancers can be reduced through public health measures like smoking cessation, nutrition education, promoting physical activity and enhancing access to screening services.

In addition, the study highlights the need to not just treat cancer but also look at social determinants of health for prevention. Better education, income and health awareness can play a major role in decreasing the risk of cancer.

Frontier in Medical & Health Research

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Lifestyle modification programs could have a positive impact on long-term patient care and lower healthcare costs when integrated into health care systems.

To conclude, unhealthy lifestyle and socioeconomic disadvantage are seen to be a stronger association with GIT cancers in relation to non-GIT cancers. The prevention and control of these risk factors are essential for cancer prevention and control and can be achieved at a public health level with comprehensive policies and at the community level with actively implemented interventions (Islami et al., 2018; WCRF, 2018).

8. Recommendations

8.1 Clinical Recommendations

From the results of this study, the following clinical recommendations are suggested to enhance the management and prevention of gastrointestinal tract (GIT) and non-GIT cancers. Regularly assessing lifestyle as part of oncology care should include a comprehensive assessment of smoking status, dietary habits, physical activity and alcohol consumption. Timely identification of high risk individuals can help in their counseling and intervention. Individual lifestyle modification counseling, especially for patients with GIT cancers with a higher prevalence of modifiable risk factors, should be given by oncologists and primary care physicians.

In addition, incorporation of nutrition support services into oncology services is highly recommended. Dietitians need to be engaged in the care of the patient to ensure proper diet modification, with a focus on high fruit and vegetable intake, high fibre consumption and minimising the consumption of processed and high fat food. Smoking cessation interventions should be routinely provided and offered, as smoking is a significant risk factor for cancer development and progression (Islami et al., 2018).

8.2 Public Health Recommendations

A public health point of view, it is necessary to create mass-scale awareness campaigns on cancer prevention practices related to healthy lifestyle behaviors. Government and public education efforts should be undertaken to raise awareness of the association between diet, smoking, and physical inactivity and the risk of cancer. Community-based interventions need to be used to encourage positive dietary and physical activity practices especially in low-income groups where risk factors are more likely to be present.

Government health agencies should focus on cancer prevention measures, and increase the capacity of screening programs for early detection of both GIT and non-GIT cancers. Tobacco tobacco control policies, including taxes, bans on advertising, and bans on smoking in public places, should be enforced. In addition, increasing access to healthy foods in high-poverty places could help lower the risk for cancer and other health problems caused by poor nutrition. These interventions are in line with the recommendations of the World Health Organization (WHO) for cancer prevention and control at the global level (2024).

8.3 Recommendations for Future Researchers.

Longitudinal studies and cohort studies should be conducted in the future to unravel the causal association between lifestyle factors and cancer development. Because this study has a cross-sectional design, it does not allow for causal inferences to be drawn, and thus, temporal relationships need to be verified through longitudinal studies. Further, samples should be expanded and multiple healthcare centers should be included to gain the generalizability of results.

Furthermore, genetic, environmental and occupational risk and lifestyle and socioeconomic factors should be studied together in future to derive a complete picture of cancer risk. Intervention-based studies are also recommended to assess the effectiveness of lifestyle modification programs for reducing cancer incidence and to enhance patient outcomes. Furthermore, qualitative research may give more information on patient behaviour, culture factors, and patients' resistance to healthful lifestyles among various populations.

In summary, there is a need for more research in a variety of populations to create evidence-based, culturally responsive cancer prevention strategies that can truly help to decrease the burden of

Frontier in Medical & Health Research

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cancer in the world, both from GIT and non-GIT cancers (Sung et al., 2021; WCRF, 2018).

The following are some of the limitations of the study:

Although this study gives significant information about the disparity between the gastrointestinal tract (GIT) and non-gastrointestinal tract (non-GIT) cancer patients in terms of lifestyle, dietary habits, and socioeconomic factors, the following limitations need to be taken into consideration.

The cross sectional study design is one of the main drawbacks. As data were gathered at a cross-sectional time, the study cannot draw causal inferences about how lifestyle factors relate with cancer development. Rather, it just correlates variables with each other. Longitudinal/cohort studies would be better for establishing causal conclusions and temporal associations between exposure and disease outcomes (Creswell & Creswell, 2018).

Yet another is the relatively small sample (200 participants). The sample size was similar for both GIT and non-GIT cancer patients, but a larger sample size would have enhanced the power and generalizability of the results. It is also possible that a limited sample size can also lead to sampling error and less sensitivity in identifying subtle difference between groups (Charan & Biswas, 2013).

The use of purposive sampling is also a limitation of this study. Selection of participants may have introduced some selection bias as the participants were selected on the basis of their availability and inclusion criteria. This is a non-probability sampling method and thus does not necessarily reflect the larger population of cancer patients and may have limited external validity.

Another limitation is that self-reported data is being collected. Participant interviews were used to collect data on eating and drinking patterns, smoking, alcohol intake and physical activity. Recall bias and social desirability bias may affect such self-reported measures, when participants may underreport unhealthy behaviors or overreport healthy behaviors. This can impact on findings (Polit & Beck, 2021).

In addition, there were multiple potential confounding factors that were not included in the study, including genetic susceptibility, environmental exposure, work place exposure, and co-morbidities. These factors could be important in cancer causation and might affect the results of the observed relationships between lifestyle and cancer types.

Only selected healthcare facilities in a particular geographical area were selected. Consequently, results may not be applicable to other groups, including other cultural, socio-economic or healthcare environments. Cancer risk patterns are likely to be different across regions due to differences in dietary habits, health care access, and cancer awareness (World Health Organization [WHO], 2024).

The study offers useful preliminary insights into the lifestyle and socioeconomic differences between GIT and non-GIT cancer patients, considering the limitations mentioned above. Future studies are needed that overcome these limitations, that is, using larger, randomly selected samples, longitudinal study designs and more objective data collection tools, including clinical assessments and biochemical markers.

Overall these results make a meaningful contribution to the literature but should be interpreted with caution as there are limitations and potential bias in the methodology (Sung et al., 2021).

REFERENCES

Arnold, M., Abnet, C. C., Neale, R. E., Vignat, J., Giovannucci, E. L., McGlynn, K. A., & Bray, F. (2020). Global burden of 5 major types of gastrointestinal cancer. *Gastroenterology, 159*(1), 335–349. https://doi.org/10.1053/j.gastro.2020.02.068

Islami, F., Sauer, A. G., Miller, K. D., Siegel, R. L., Fedewa, S. A., Jacobs, E. J., McCullough, M. L., Patel, A. V., Ma, J., Soerjomataram, I., & Jemal, A. (2018). Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *CA: A Cancer*

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Journal for Clinicians, 68(1), 31–54. https://doi.org/10.3322/caac.21440

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

World Health Organization. (2024). Cancer fact sheets and global cancer burden reports. Geneva, Switzerland: WHO.

Bray, F., Laversanne, M., Sung, H., Ferlay, J., Siegel, R. L., Soerjomataram, I., & Jemal, A. (2024). Global cancer statistics 2024: GLOBOCAN estimates of incidence and mortality worldwide. *CA: A Cancer Journal for Clinicians, 74*(3), 229–263.

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

World Cancer Research Fund (WCRF). (2018). *Diet, nutrition, physical activity and cancer: A global perspective*. World Cancer Research Fund International, London, UK.

Bray, F., Laversanne, M., Sung, H., Ferlay, J., Siegel, R. L., Soerjomataram, I., & Jemal, A. (2024). *Global cancer statistics 2024*. CA: A Cancer Journal for Clinicians, 74(3), 229–263.

Islami, F., Sauer, A. G., Miller, K. D., Siegel, R. L., Fedewa, S. A., Jacobs, E. J., et al. (2018). Proportion and number of cancer cases attributable to potentially modifiable risk factors. *CA: A Cancer Journal for Clinicians, 68*(1), 31–54.

National Cancer Institute. (2024). *Age and cancer risk*. National Institutes of Health.

Rumgay, H., Shield, K., Charvat, H., Ferrari, P., Sornpaisarn, B., Obot, I., & Soerjomataram, I. (2021). Global burden of cancer attributable to alcohol consumption. *The Lancet Oncology, 22*(8), 1071–1080.

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

World Cancer Research Fund (WCRF). (2018). *Diet, nutrition, physical activity and cancer: A global perspective*. London, UK.

Charan, J., & Biswas, T. (2013). How to calculate sample size for different study designs in medical research. *Indian Journal of Psychological Medicine, 35*(2), 121–126. https://doi.org/10.4103/0253-7176.116232

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications.

Polit, D. F., & Beck, C. T. (2021). *Nursing research: Generating and assessing evidence for nursing practice* (11th ed.). Wolters Kluwer.

World Cancer Research Fund (WCRF). (2018). *Diet, nutrition, physical activity and cancer: A global perspective*. World Cancer Research Fund International.

World Medical Association. (2013). Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA, 310*(20), 2191–2194.

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Pallant, J. (2020). *SPSS survival manual: A step-by-step guide to data analysis using IBM SPSS* (7th ed.). McGraw-Hill Education.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson Education.

Bray, F., Laversanne, M., Sung, H., Ferlay, J., Siegel, R. L., Soerjomataram, I., & Jemal, A. (2024). Global cancer statistics 2024. *CA: A Cancer Journal for Clinicians, 74*(3), 229–263.

Islami, F., Sauer, A. G., Miller, K. D., Siegel, R. L., Fedewa, S. A., Jacobs, E. J., et al. (2018). Proportion of cancer cases attributable to modifiable risk factors. *CA: A Cancer Journal for Clinicians, 68*(1), 31–54.

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

World Cancer Research Fund (WCRF). (2018). *Diet, nutrition, physical activity and cancer: A global perspective*. WCRF International.

Bray, F., Laversanne, M., Sung, H., Ferlay, J., Siegel, R. L., Soerjomataram, I., & Jemal, A. (2024). *Global cancer statistics 2024*. CA: A Cancer Journal for Clinicians, 74(3), 229–263.

Islami, F., Sauer, A. G., Miller, K. D., Siegel, R. L., Fedewa, S. A., Jacobs, E. J., et al. (2018). Proportion of cancer cases attributable to modifiable risk factors. *CA: A Cancer Journal for Clinicians, 68*(1), 31–54.

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

Charan, J., & Biswas, T. (2013). How to calculate sample size for different study designs in medical research. *Indian Journal of Psychological Medicine, 35*(2), 121–126.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.

Polit, D. F., & Beck, C. T. (2021). *Nursing research: Generating and assessing evidence for nursing practice* (11th ed.). Wolters Kluwer.