

# Assessment of Cancer Risk Factors among Rural Communities in Greater Noida Villages

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## ABSTRACT

The survey investigates the cancer risk factors prevalent among rural communities in Greater Noida villages, recognizing the escalating burden of cancer incidence and mortality on a global scale. Through a survey-based methodology involving 40-50 families, the study elucidates various factors influencing cancer risk, including demographics, habits, environmental conditions, and awareness levels. The findings underscore the significant prevalence of habits involving carcinogenic elements, such as alcohol consumption and tobacco chewing, deeply ingrained in local culture, posing substantial health risks. Moreover, environmental factors, including poor sanitation, contribute to compounded health risks within these communities. The results highlight the imperative for targeted interventions to promote healthier lifestyles and environments, thus mitigating the burden of cancer prevalence.

**Keywords:** Cancer risk factors, rural communities, Greater Noida villages

## INTRODUCTION

With a projected 10 million fatalities and almost 20% of all deaths worldwide in 2020, the burden of cancer incidence and mortality is rising quickly on a global scale (Sung et al., 2021). In villages, where access to cancer care is frequently subpar, the burden is disproportionately high (Shah et al., 2019). Specifically, despite a lower prevalence of cancer than in cities, the burden of cancer-related mortality is substantially higher in villages, accounting for 65% of all cancer deaths globally. It is predicted that by 2030, 75% of cancer deaths worldwide would occur in low- and middle-income countries (Mandal et al., 2018). In contrast to HICs (High income countries), where these types of cancers are less common, villages

bear a significant burden of infection-associated cancers, including gastric cancer, hepatocellular carcinoma, and cervical cancer, as a result of the prevalence of carcinogenic infections like *Helicobacter pylori*, hepatitis B virus, and human papillomavirus (Shah et al., 2019).

In India, between 1990 and 2013, the yearly count of cancer cases increased. A total of 1.39 million cancer cases were reported in India in 2020; that number increased to 1.42 million in 2021 and 1.46 million in 2022. Research projects that by 2025, there would be around 1.57 million yearly incidences of cancer, a 12.8% rise from current estimates. The state of Uttar Pradesh in northern India recorded the largest number of new cancer cases in 2023, at almost 2.10 lakh. There

were almost 2 lakh new cases of cancer in this state in 2021. Tobacco use and alcohol consumption are two significant risk factors for various types of cancer. Tobacco contains numerous carcinogens that can damage DNA and lead to mutations, increasing the likelihood of cancer development. Excessive alcohol consumption is associated with an increased risk of cancers in the mouth, throat, esophagus, liver, breast, and colon. According to the National Cancer Institute, alcohol consumption can increase the risk of developing cancer by damaging cells, impairing the body's ability to absorb essential nutrients, and weakening the immune system, thereby making the body more susceptible to carcinogens. Furthermore, alcohol can interact with other carcinogens, such as those found in tobacco smoke, compounding the risk of cancer development (National Cancer Institute, 2020)

## METHODOLOGY

The primary objective of this research was to assess the potential for cancer risk within communities and to elucidate the associated factors. The study focused on villages in Greater Noida, recognizing their significance as representative settings for both rural and urban environments, thus offering insights into diverse lifestyle patterns and environmental conditions. Methodologically, a survey was conducted,

involving 40-50 families, to gather data on various aspects influencing cancer risk, including demographics, habits, environmental factors, and awareness levels. The survey revealed common practices such as alcohol consumption, and tobacco chewing, deeply ingrained in the local culture, posing significant cancer risks. Moreover, environmental conditions characterized by poor sanitation, including flooded domestic wastes, litter, and concealed drains, further compounded health risks. Despite some awareness of cancer, the findings underscored the urgent need for lifestyle improvements to mitigate cancer prevalence in these communities. This research sheds light on the complex interplay of social, environmental, and behavioral factors influencing cancer risk in village settings, emphasizing the imperative for targeted interventions to promote healthier lifestyles and environments.

## RESULTS AND DISCUSSION

The survey reveals that 42% of respondents currently rely on hand pumps for drinking water, but a significant portion (46%) are considering switching to mineral water sources as shown in Figure 1. This indicates a growing awareness and preference for cleaner drinking water options, potentially driven by concerns about water quality and sanitation.

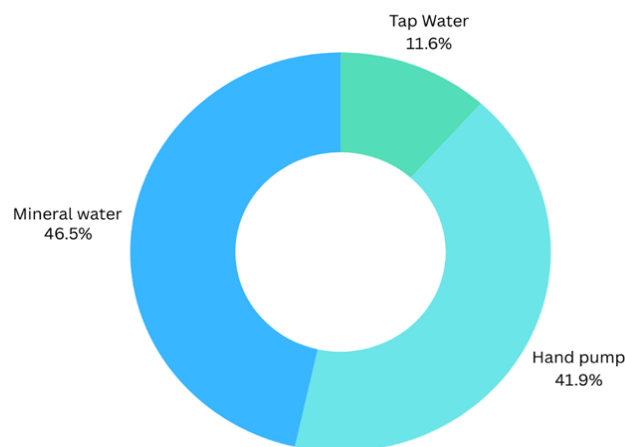


Figure 1: Sources of drinking water

Among the surveyed population, a notable percentage engages in habits involving carcinogenic elements, such as alcohol consumption, smoking, and tobacco chewing. While not all respondents indulge

in these habits, there is a concerning prevalence, with approximately 30% consuming alcohol, 50% chewing tobacco or betel quid as shown in Figure 2.

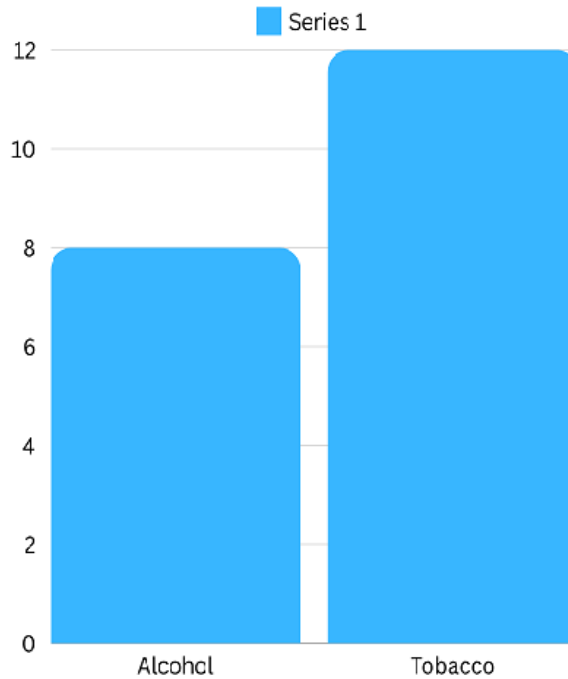


Figure 2: Intake of Alcohol and Tobacco

These habits pose significant health risks, including an increased likelihood of developing cancer. The overall assessment of cancer prevalence among the surveyed population reveals concerning statistics. While 53% of respondents report a healthy normal life, 8.9% have been diagnosed with cancer. Additionally, 35.6% of respondents

are affected by other diseases, and 2.2% are diagnosed with both cancer and other diseases as shown in Figure 3. These findings underscore the significant burden of cancer and other health issues within the community, necessitating targeted interventions and healthcare efforts.

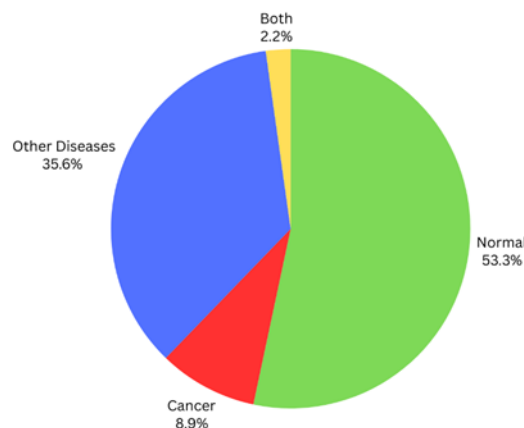


Figure 3: Overall assessment of cancer

The findings from the survey shed light on the complex interplay of lifestyle habits, environmental factors, and health outcomes within the surveyed community. The prevalence of alcohol consumption, as well as the habit of chewing tobacco, indicates a cultural tradition that contributes to elevated cancer risks. Efforts to address these habits and raise awareness about the associated health risks are imperative to mitigate the burden of cancer within the community. Moreover, water pollution emerges as a significant concern. Pollution not only affects health directly but also indirectly impacts agricultural practices and water sources, exacerbating health risks and contributing to the spread of diseases. These findings emphasize the importance of implementing measures to reduce pollution and safeguard public health. Furthermore, the co-occurrence of cancer with other health conditions highlights the complexity of health challenges faced by the community. Addressing cancer and other health issues requires a comprehensive approach that considers lifestyle factors, environmental conditions, and access to healthcare services. Collaborative efforts between healthcare providers, policymakers, and community members are essential to promote healthier lifestyles, mitigate environmental risks, and improve overall health outcomes within the community.

## CONCLUSION

The survey conducted sheds light on the prevalence of cancer risk factors among rural communities in Greater Noida village. Habits such as alcohol consumption and tobacco chewing, coupled with environmental factors like poor sanitation, significantly contribute to the burden of

cancer and other health issues within these communities. Efforts to address these factors and raise awareness about associated health risks are crucial to mitigate the growing burden of cancer incidence and mortality.

### **Declaration by Authors**

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**Conflict of Interest:** The authors declare no conflict of interest.

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