

---

## ABSTRACTS: VOLUME 8, SPECIAL ISSUE {8<sup>th</sup> Undergraduate Conference}

---

### THE IMPACT OF CHARCOAL AND WOOD USE FOR COOKING DURING WAR ON RESPIRATORY SYMPTOMS: A CROSS-SECTIONAL STUDY AMONG CIVILIANS IN THE GAZA STRIP

Nagham Mezied<sup>1</sup>, Huda AlWadiya<sup>1</sup>, Saja Saqar<sup>1</sup>, Abdallah AlJadba<sup>1</sup>, Habiba Masood<sup>1</sup>, Tareq Kishawi<sup>1</sup>, Farah Miqdad<sup>1</sup>

Supervisors: Dr. Nadine Al Naamani<sup>2</sup>, Dr. Ayda Helles<sup>1</sup>.

<sup>1</sup> Faculty of Medicine, Al-Azhar University, Gaza, Palestine.

<sup>2</sup> University of Pennsylvania, Philadelphia, USA.

#### Abstract

**Background:** The 2023-2025 war and blockade in the Gaza Strip have severely disrupted daily life basics and aspects, including electricity supply and cooking gas availability. As a result, many civilians have relied on traditional cooking methods such as wood and charcoal. Smoke from these fuels contains toxic pollutants that may adversely affect the respiratory system.

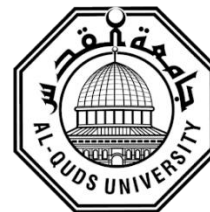
**Objective:** The study aimed to determine the effect of charcoal and wood use for cooking during the war on respiratory symptoms among civilians in the Gaza Strip, examining prevalence, severity, exposure patterns, and associated factors.

**Methods:** A quantitative cross-sectional study was conducted among 390 adults who used wood or charcoal for cooking during the war. Data were collected using a structured questionnaire that included demographic, environmental, exposure, and respiratory symptoms variables. Descriptive statistics were applied, and analyses were conducted using SPSS. Chi-square test and logistic regression analysis were conducted to examine associations between respiratory symptoms and biomass fuel use, as well as related factors. A p-value <0.04 was considered statistically significant.

**Results:** Overall, 83.64% of respondents reported at least one respiratory symptom (+severity). The most commonly reported symptoms were eye and throat irritation (64.01%), cough (48.06%), shortness of breath (51.53%), and wheezing (26.79%). A significant association was found between daily fuel use and respiratory symptoms ( $\chi^2 = 4.12$ ,  $p < 0.042$ ). The strongest independent predictor was daily fuel use (aOR= 2.94), followed by current smoking (aOR= 2.12), poor ventilation (aOR= 1.98), displaced status, female gender, and age >30 years.



**PalStudent Journal**  
A Palestinian Scientific Journal for the Youth



---

**Conclusion:** Respiratory symptoms were highly prevalent among civilians in the Gaza Strip and were strongly associated with biomass fuel use during the war. Daily use appeared to be the strongest contributing factor after adjustment.

**Keywords:** Charcoal and Wood, War impact, Toxic pollutants, respiratory symptoms.