

# TEMPORAL CHANGES IN HOSPITALIZATION RATES DUE TO CARDIO-VASCULAR, RESPIRATORY DISEASES AND DIABETES IN URBAN ADULT POPULATION LIVING NEAR INDUSTRIAL PARK

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**Background and Aims:** In the Bedouin population – as previous studies presented – an increase in birth defects, mortality (perinatal and general), and respiratory hospitalization associates with residential proximity to a local chemical industrial park (IP). The aim of this study was to analyze whether an association between residential proximity to the IP and cardio-respiratory diseases and diabetes hospitalization rates exists for other populations living Beersheba subdistrict in Southern Israel.

**Methods:** A semi-ecological study has been conducted during 1995-2004 years, in which residential proximity to the IP was used as a surrogate exposure estimate. The dichotomic distance “<20 km from IP” was considered as “proximal” or “exposed”, while its complement part “20 + km from IP” was denoted as “distant” or “unexposed”. Such definition was based on the most far-off yet verified odour complaint related to the IP emissions. Given that after the year 2000 levels of the monitored daily emissions dropped along with the decrease in verified odour complaints from 58.2% to 41.3%, we divided the study period into two times before and after 2000 year. Negative binomial regression was used to assess incidence rate ratios (IRR) adjusted to confounders.

**Results:** Cardio-vascular gender-specific hospitalization rates were significantly higher for “proximal” localities than for “distant” ones throughout the study period. Independently, gender, age and locality type were associated statistically significant with the cardio-vascular hospitalization rates. All population characteristics predicted significantly respiratory hospitalization rates thru the study period, except for residential proximity to the IP, which was found associated statistically with the respiratory outcome in only 1995-1999 with IRR=1.174 (CI: 1.074-1.283). Diabetes hospitalization rates were associated significantly with locality type, but only during 1995-1999 years.

**Conclusions:** We found that after year 2000, there was a significantly decrease in the respiratory and cardiovascular diseases hospitalization rates in residents living near the IP.