

## ASSOCIATION BETWEEN SEISMICITY AND MENTAL HEALTH: CRETE, 2008-2010

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**Introduction:** Several investigations have shown the influence of environmental factors, i.e. seismic activity on human health. However, no studies have focused on the effect of earthquakes on mental health. Crete is located within a rectangular region at the boundaries of Eurasian and African tectonic plates with high seismicity.

**Objectives:** To investigate the effect of seismic activity on mental health.

**Aim:** To explore possible association between seismic activity and rates of hospital admissions of psychotic patients.

**Methods:** We compared the seismic activity (EQs with magnitude  $M > 2$ ) in a geographical area of Crete, and admissions to the Psychiatric Inpatient Unit/ University General Hospital of Heraklion, Crete during the years 2008-2010.

**Results:** Our analysis showed (1) a very low rate of admissions of psychotic patients suffering from acute psychotic disorders, during the period with several great ( $M > 6.4$ ) and middle ( $4.5 < M < 6.4$ ) magnitude period earthquakes (EQs), (2) an increasing trend of admissions of acute psychotic disorders during a period with increasing number of relatively small EQs ( $r = 0.667$ ;  $p < 0.001$ ), (3) a correlation between the number of total monthly admissions and the number of  $M > 2$  EQs.

**Conclusions:** It appears that strong EQs have a protective effect on the relapse of major psychiatric disorders, whereas small EQs are associated with an increasing number of relapses. We hypothesized that the beneficial/adverse effects are related to anomalous electric fields/Extra Low Frequency (ELF)-Ultra Low Frequency (ULF) emissions.