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### ABSTRACT

#### Sleep Patterns in the Area of Gaza Strip

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**Background:** Sleep may be affected by traumatic experiences leading to an increased risk of poor quality of life

and daily functioning. However, studies related to sleep habits and problems in conflict-affected areas are still sparse. The present study attended to describe sleep habits, estimate the prevalence rate of sleep disturbances, and identify associated factors in the Gaza strip

**Objectives:** Describe sleep patterns in a sample of Palestinian adults aged  $\geq 18$  years living in the Gaza strip, using validated screening questionnaires. And to estimate the prevalence of sleep disturbance. And identify their associated factors.

**Methods:** A population-based cross-sectional study including 1458 Palestinian adults aged  $\geq 18$  years living in the Gaza strip was carried out during the period between 18 February and 31 March 2022. An electronic survey through the free-of-charge Google Forms tool was used for data collection. A range of self-report measures related to sleep, mood, and subjective quality of life were used: the Pittsburgh Sleep Quality Index (PSQI), the World Health Organization-Five Well-Being Index (WHO-5), the Epworth Sleepiness Scale (ESS), and the Patient Health Questionnaire (PHQ)-9.

**Results:** Three out of five of participants ( $n = 882$ , 60.5%) were females and the mean age was  $34.8 \pm 12.77$  years. More than one-third of participants ( $n = 556$ , 38.1%) had poor well-being as assessed by the WHO-5 and 108 (7.4%) had a PHQ-9 score  $\geq 20$  indicating severe depression. The prevalence of poor sleep quality was 52.8% when defined as  $PSQI \geq 6$  and 30.5% when defined



as  $PSQI \geq 8$ . The prevalence of excessive daytime sleepiness (EDS), short sleep duration, severe depression, and poor well-being were 43.6%, 26.4%, 7.1%, and 38.1% respectively. Women and the youngest participants reached the highest prevalence rates for sleep and mood disturbance as well as for daytime dysfunction. Using multivariate binary logistic regression analysis, several factors were found to be significantly associated with poor sleep: female sex (AOR=1,507, 95% CI= [1,158- 1,963]), being divorced (AOR=3,472, 95% CI=[1,424- 8,468]), internet use close to bedtime (AOR=1,483; 95% CI=[1,046- 2,104]), chronic diseases (AOR=1,572; 95% CI=[1,137- 2,173]), psychological disease (AOR=2,875; 95% CI=[1,265- 6,537]), previous SARS-CoV2 infection (AOR=1,543; 95% CI=[1,028- 2,317]), previous war injuries (AOR=2,131; 95% CI=[1,233- 3,683]), WHO-5 score  $\leq 50$  (AOR=2,453; 95% CI=[1,903- 3,162]), PHQ-9 score  $\geq 20$  (AOR=4,145; 95% CI=[2,547- 6,745]), ESS  $\geq 11$  (AOR=1,796; 95% CI=[1,401- 2,303]) and sleep onset time after 01:00 am (AOR=1,546; 95% CI=[1,079- 2,216]).

**Conclusion:** Poor sleep quality, EDS, severe depression, and poor well-being in our sample were strikingly increased. Females and the youngest participants were the most affected. The current results suggest that the specific context in conflict-affected areas may play an important role in sleep disturbances, mainly because of a high prevalence of mood disturbances. Sleep and mood disturbances also adversely affect the quality of life.

**Keywords:** prevalence; sleep quality; sleep duration; sleep timing; Gaza; conflict-affected area.