SURVEY OF MOBILE PHONE BASE STATIONS IN RESIDENTIAL AREAS OF AMRITSAR CITY AND THE HEALTH SYMPTOMS REPORTED BY THE RESIDENTS

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ABSTRACT:
Microwave radiations from mobile phones and their base stations for signal propagation may be causal factors in various dysfunctions as radiations in the frequency range of 100 KHz-300GHz have been reported to cause enzyme inactivation, cellular damage and oxidative stress. Against this backdrop, it was thought pertinent to check the levels of power density which might affect the general health of the population residing in the vicinity of mobile phone base stations. In the present study, the power density in 17 areas with 32 mobile phone base stations was measured using a hand-held RF analyzer and a survey was carried out for any ill-health effects among the residents. The results revealed that the power density levels in these areas were in the range of 1.295-2.514µW/m² up to 250m while in areas without mobile phone base stations the power density was 0.1µW/m². Self-reported health symptoms’ among the residents (n=150) revealed that 60% complained of headaches, 33.33% of bowel disturbance, 23.33% of blurred vision, 22.66% of tinnitus, 20.66% of sleep disturbances, 14.00% of dryness of mouth, lack of concentration and irritability, 11.33% of nausea, 8.00% of skin problems, 6.66% of dizziness, 5.33% of depression, 4.66% of tremors, 3.00% of fatigue, movement difficulties and memory loss, 2.00% of loss of appetite and 1.00% of cardiovascular problems. Further the correlation analysis revealed a significant association of tremors and tinnitus with distance from base station, irritability with location, lack of concentration, tinnitus and movement difficulties with power density, blurred vision and change of taste with duration of stay near base station while sleep disturbances, lack of concentration and skin problems were associated with mobile phone usage, thus indicating that the residence near mobile phone base station as well as mobile phone usage is a causal factor in causing these health effects which due to long run continuous exposure may cause disease manifestation.

KEY WORDS: Base Stations, Microwave radiations, Power Density.