

Subjective Symptoms Related to GSM Radiation from Mobile Phone Base Stations: a cross-sectional study

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Dear Editor,

I write to express my concerns with an article by Gómez-Perretta *et al.* entitled “Subjective symptoms related to GSM radiation from mobile phone base stations: a cross-sectional study” that is published in the *BMJ Open* 2013;3:12. In this report, the authors have concluded that the incidence of most of the self-reported symptoms in the residents exposed to microwave radiation from mobile base stations was related to exposure levels. Over the past years, our laboratory has focused on studying the health effects of exposure of laboratory animals and humans to some common and/or occupational sources of electromagnetic fields such as mobile phones [1-8] mobile base stations [9], mobile phone jammers [10], laptop computers [11], radars [2], dentistry cavitrons [12] and MRI [7]. We have recently performed a cross-sectional study investigating 755 subjects living in 10 different districts of Shiraz city. Two mobile base stations in each district were chosen. A questionnaire containing questions on demographic data, subjective complaints and occupational and environmental exposure to different sources of electromagnetic fields was administered to all participants. Electromagnetic field strength was measured by a EMF meter in each household. In this study we only found a statistically significant association between the frequency of tooth ache and the distance from base stations. No association was found between the distance from base stations and the frequency of other subjective symptoms [13].

Gómez-Perretta *et al.* started the introduction of their paper with a political frightening historical event which claimed that occurred during the cold war “*The study that led to this debate was initiated after verification that the US embassy in Moscow was being subjected to such radiation from 1953 to May 1975*”. As in this event the RF source, its frequency and intensity were quite different from those of mobile base stations, it is not clear why Gómez-Perretta *et al.* selected this alarming event. Everybody knows that very hot water can cause burns but at the same time hot tubs may be considered as a great source of enjoyment and relaxation! Gómez-Perretta *et al.* only cited a review that showed in 8 of the 10 studies evaluated there were increased prevalence of adverse neurobehavioral symptoms or cancer in populations living at distances <500 m from base stations but simply ignored contradictory reviews such as the review published by Rööslü and Hug in 2011 “*In summary, recent research did not indicate health-related quality of life to be affected by RF-EMF exposure in our everyday environment. Furthermore, none of the studies showed that individuals with self-reported electromagnetic hypersensitivity (EHS) were more susceptible to RF-EMF than the rest of the population*” [14] or the review published in the Bull World Health Organ in 2010 “*At present, there is insufficient data to draw firm conclusions about health effects from long-term low-level exposure typically occurring in the everyday environment*” [15].

The study of Gómez-Perretta *et al.* in fact is a repeat of the paper previously published by Navarro *et al.* in 2003. This study has been performed in La Nora, a small city in Spain, with a population of 20,000 people. This paper has some severe methodological flaws. Gómez-Perretta’s data was initially obtained with a significant bias in selection of the participants “*Some 215 questionnaires were randomly distributed through 17 streets representing practically the entire village. The houses were selected using a street map of the village. In total, 150 questionnaires were collected with the*

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remainder being uncollected because nobody was at home (31) or there was a refusal by the householder to complete the questionnaire (34)". Then the number of participants decreases to 101 people "During 2001, 101 RF EMF measurements in bedrooms were made. The other (49) residents who refused admittance for taking the measurements (16) were not at home for the scheduled measurement appointment (10) or had serious health problems (23)". And finally in reanalysis of the data the number of participants decreases to only 88 participants "The reanalysis of the dataset, which is the main focus of this paper, was finally performed with 88 participants (45 women and 43 men) instead of the 101 analyzed in 2001". It can be simply hypothesized that the majority of these 88 responders were those who were possibly strongly concerned about the risk of living in the vicinity of mobile base stations. In this light, it is not unlikely to find a clear relationship between exposure and any subjective symptoms. I hope that these comments will be useful in obtaining more reliable results in the future.

Conflict of Interest

None

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