



## Letters to the Editor

## Work-related Dermatoses in Greece



## To the Editor

The article “Occupational Dermatoses by Type of Work in Greece” by Zorba et al [1], which I read with great interest, adds to the few field studies on occupational dermatoses in Greece [2–4]. Skin disorders are among the most prevalent work-related health problems in Europe, close to infectious diseases, hearing disorders, and cardiovascular disorders, whereas musculoskeletal (42.2%), stress, depression and anxiety (22.5%), and pulmonary disorders (5.9%) ranked higher in the list [5].

The researchers implemented a huge project by the inclusion of 104 small and medium companies spread over all regions of Greece. All these firms were officially served (contracted) for occupational health services by one licensed occupational health physician [1]. The authors argued that these companies were considered to be a representative sample of Greek companies of the same type, regarding size of workforce, years of operation, working practices, and weather conditions, even though no supporting data are given [1]. Very high prevalence rates of occupational dermatoses, especially among hairdressers, cooks, bitumen workers, construction workers, industrial cleaning workers, and farmers were reported [1]. The researchers obtained a response rate of 100%, because—as they argued—all employees of the participating companies were obliged, in accordance with Greek laws, to be examined by the enterprise physician [1].

However, several of the authors' points raised questions and deserve further comments. The authors decided to include in the study only current employees, “each of whom had worked in each type of enterprise for 5 years (no more, no less),” and they randomly selected 4000 of them [1]. I wonder about the total employment force of these 104 small- to medium-sized companies and the employment duration of their employees during the study period; I assume that, in order to gather this sample of the randomly selected 4000 employees, about 15,000 employees or more might have been screened by the researchers in these 104 firms in the 6-year period. And although it seems possible to trace randomly 200 office workers or kitchen staff with “5 years of employment and never previously worked in a similar type of enterprise” in 10 companies, it is far less possible to randomly select 200 paint manufacturing industry workers, bitumen laying workers, or footwear artisan factory workers with the abovementioned employment characteristics in one, two, or four small to medium firms. Detailed data on employment characteristics (total population per company, the percentage of employees with from 1 year up to 5 years of employment, and the new entries during the first 2 years of the study) and on sampling procedure (how

and how many employees were randomly selected in each company per year) should be presented to ensure study validity.

As far as diagnosis is concerned, in most cases the members of the research team in the 6-year period, recognized the symptoms and signs of the skin diseases and recorded the diagnosis; the authors did not mention if there was any training or measure to account for inter- or intrarater variability in the accuracy and the consistency of the diagnoses during the long study period. In addition, the researchers administered “specially designed occupational skin disease questionnaires,” but no data on the reliability and validity of the questionnaires are given [1].

Interestingly, the authors gathered data on the use of personal protective equipment (PPEs), on occupational stress, etc., but the tools used and the results are not given in the text. Similarly, the authors chose not to describe in detail the less “subjective” results of the patch or skin prick testing, and the same holds for the results of blood examinations that were recommended for all workers with dermatitis, although it is not clear why every worker with dermatitis has to be tested, e.g., for the costly antinuclear antibodies. Last but not least is the paradox that the authors selected identical exposure times for all the participants while they failed to adjust their results for age, the major confounding factor in prevalence studies.

Sufficiently sound studies on the prevalence of common work-related disorders in various employment types are always of value in the occupational health domain, because large differences are monitored among countries and various occupational groups [5–7].

### Conflicts of interest

The author declares no conflicts of interest.

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## Considerations Concerning the Epidemiology of Occupational Dermatoses



To the Editor

Our erudite colleague, in his Letter to the Editor, has made a valiant effort to demonstrate that any piece of medical knowledge can be expanded upon, and made comments on our article [1], some erroneous and some others possibly reminiscent of cases of cognitive ignorance or misrepresentation.

We clearly mentioned in our article that the firms included in our study received services by four qualified physicians—one senior, experienced specialist in occupational medicine “assisted” by three enterprise physicians specializing in occupational medicine. Assistance, also entailed training, supervision, and ensuring that there was consistency and uniformity in diagnosing and recording cases of occupational dermatoses. Additional supervision provided by another three senior, experienced, specialist physicians participating in this study ensured scientific quality assurance, which also included ascertaining that the same procedures and methods for diagnosis and for collection of data on possible causal factors were used by all four enterprise physicians throughout the study period. Intra- and interobserver variability was not considered, for two reasons: Firstly, because of the aforementioned strengthened supervision. Secondly, it is apparent that in our study we used clinical diagnoses rather than laboratory or paraclinical test results. There are drawbacks related to using clinical diagnosis in an epidemiologic study [2]. These were eliminated, as all four enterprise physicians had access to the same laboratory tests and dermatologists. As we stated in our article, in all borderline or obscure skin diseases, diagnosis was always confirmed by the same dermatologists of the same university dermatology department, where specialist laboratory and other investigations were also carried out, whenever indicated. This means that observations were complete and accurate and the reasoning sound. Diagnoses were made by similarly trained enterprise physicians. They used the same specific criteria for making the same diagnosis, adhering to these criteria throughout the study. They also used the same terms to refer to the same clinical condition. Thus, the single term used for each of the occupational dermatoses studied had the same meaning to all these physicians. Our colleague ignores and misrepresents the statement already made by us that “our study has no external validity, but it certainly

does have internal validity, as regards the population studied.” Surprisingly, he is also questioning the real size of the study population from which our study sample was randomly selected! To this end, he conceals our having stated that original numbers of employees in each type of enterprise were different, clearly meaning that the percentages randomly selected in the various types of enterprises varied, so that 200 workers would constitute the sample in each of the 20 types. The total population studied was 9,576 workers, and among them hairdressers and kitchen staff—the numbers of whom were particularly doubted by him—were 231 and 400, respectively. First, we ensured that the smallest population group fully met our selection criteria, and then we proceeded with random sampling. We did not present details of selection by random sampling in each type of enterprise, because of the word limitation imposed by the journal, and because we did not think that our scientific ethics would be under suspicion just because we used well known random sampling correctly. In conjunction with routine, good occupational medicine practice procedures, we used the short and simple Nordic Occupational Skin Questionnaire (NOSQ-2002) [3], after we translated and culturally adapted it in accordance with established principles [4]. If he proves it invalid in a Greek population, we would be most interested in reading his validation study. Information on occupational skin ill health factors and related hazards was collected within the frames of good clinical governance, effective administrative procedures, and occupational hygiene surveys, which included measurable criteria for potential causal factors, appropriate to good occupational medicine practice [5], and recorded meticulously in the files kept by the enterprise physicians. In our research project, we tested workers with occupational acute and chronic dermatitis for antinuclear antibodies to establish whether they were either suffering from a systemic autoimmune disease or whether they were more likely to develop it in the future [6]. We certainly did not recommend that costly testing for nuclear antibodies be used as a routine screening test in all cases of dermatitis in occupational health practice, as our colleague misleadingly claims. Nevertheless, individual patients may be reassured by a series of normal results. Such reassurance might have its place in occupational health practice, when affordable. As mentioned in our article, our field study was combined with delivery of occupational medicine services. The results of nuclear antibody, patch or skin prick, and blood testing will be published in a separate article. We did not adjust our results for age. Exposure–response relationships have been reported between occupational exposure and skin symptoms [7]. A careful search of the literature on the causation of occupational dermatoses would reveal that a causal relationship between age and occupational dermatoses has never been established. This is in contrast to the unsubstantiated statement of our colleague that age should be considered a major confounding factor in our study. In fact, in the literature there is no agreement regarding age as a determinant of occupational dermatoses, as revealed in a classical review [8]. Furthermore, it has been shown that the age effect, when present, disappeared when correcting for occupation [9]. We recommend further investigations of a possible age effect on occupational dermatoses.

Our colleague did manage to secure one more publication, in which he has cited a few of his own publications. Sadly, however, he has wrongly criticized mostly minor aspects of our methodology—as if the perfect epidemiologic study really existed—and chose to ignore the major contribution of our study. The fact that it is the very first major epidemiologic study of occupational dermatoses in Greece, in which we revealed that 1,596 workers suffered from occupational dermatoses, indicating an urgent need for improvement of working conditions and of recording on a large scale across at least 20 different types of enterprises. Notably,