EXPOSURE TO PLEASANT FRAGRANCE AS A POTENTIAL TECHNIQUE FOR REDUCING THE ADVERSE EFFECTS OF WORK-RELATED STRESS

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An investigation was conducted to examine the hypothesis that pleasant fragrances would induce positive affect among persons exposed to them, and as a result, would help to reduce the adverse effects of work-related stress on task performance.

To test this hypothesis, participants (male and female students) performed a complex word construction task under conditions of either low or high stress. *High stress* was induced by setting a very high (and virtually unobtainable) standard for performance, and by high time pressure. (A loudly ticking timer was placed on the table in front of participants; they were informed that it would ring when their time was up.) *Low stress* was induced by setting a more modest (and readily attainable) standard for performance and by lower time pressure; no timer was present in this condition. After completing this initial task, participants performed two additional tasks: decoding written messages and proofreading.

All of these tasks were performed either in the presence or absence of one of two fragrances rated as very pleasant by judges in pre-testing. These fragrances were produced by commercially-manufactured air fresheners. In order to counter the effects of rapid sensory adaptation to these fragrances, participants performed the first task (word construction) in one room, and were then taken to a waiting room that contained no fragrance. Following a five minute period (sufficient for recovery from sensory adaptation), they were brought to another room containing the same fragrance as the one they encountered in the first room. They performed the remaining two tasks in this location.

Results indicated that the both pleasant fragrances employed in the study enhanced performance on the initial cognitive task, especially under conditions of low stress. Both fragrances also significantly increased performance on the decoding task, and this was true under high as well as low stress. In contrast, pleasant fragrances reduced performance on the proofreading task, apparently because they induced feelings of relaxation and calmness which were inimical to performance of this speed-related task.

It should be noted that the two fragrances employed were rated as equal in pleasantness by participants, but were highly distinct in olfactory quality. Yet, they produced similar effects on participants' behavior. This pattern of findings suggests that recent claims to the effect that different fragrances exert sharply contrasting effects on human behavior should be viewed with skepticism until direct empirical support for their accuracy is provided.

THE ROLE OF ERGONOMIC AND PSYCHOLOGICAL STRESSORS IN THE DEVELOPMENT OF MUSCULOSKELETAL DISORDERS AMONG CASHIERS

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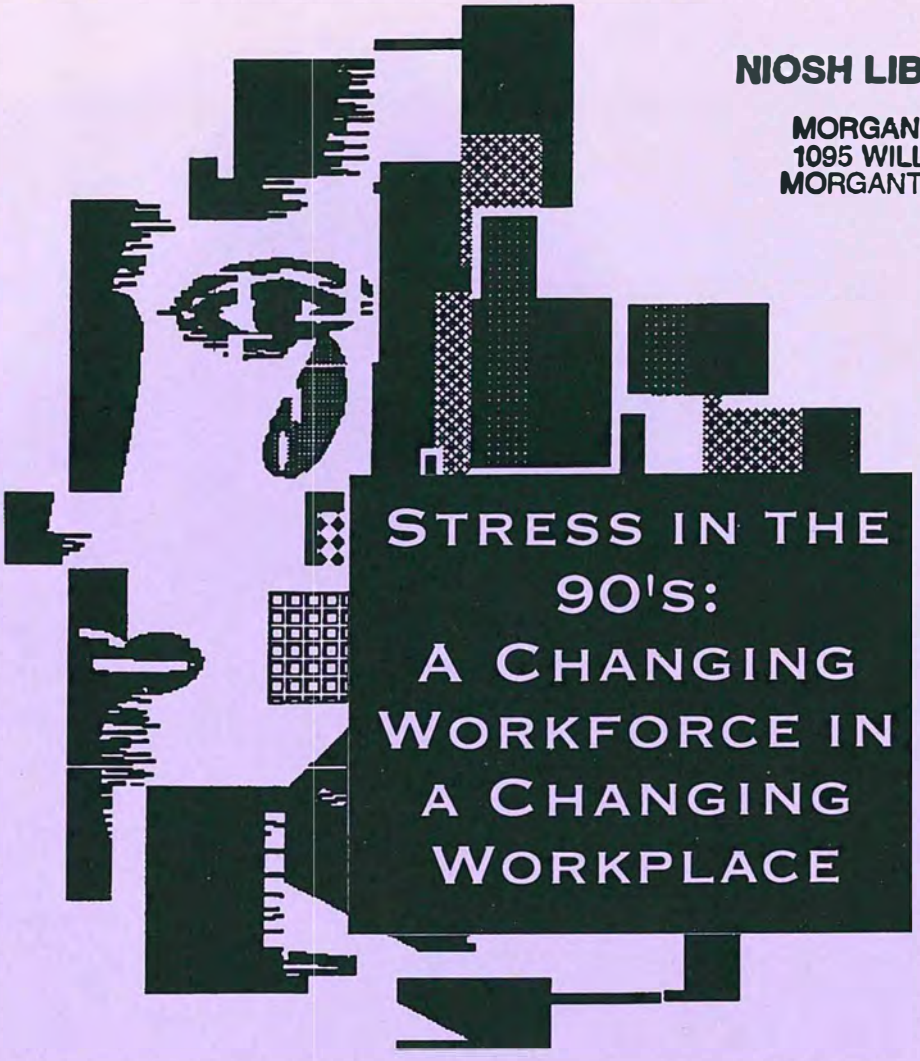
Several epidemiological studies have documented an elevated rate of musculoskeletal disorders, including tendinitis of the hand and shoulder and carpal tunnel syndrome, among workers in the retail food industry, particularly supermarket cashiers. While psychological factors have not been examined as potential contributors to the development of these disorders in cashiers, there is reason to believe they may exacerbate the deleterious causal effects of poor ergonomic conditions. The National Institute for Occupational Safety and Health (NIOSH) is therefore currently investigating the role of both ergonomic and job stress factors in the development of musculoskeletal disorders among retail food workers.

The NIOSH study design involves examining exposures to ergonomic stressors and measuring job stress factors and then determining the prevalence of musculoskeletal disorders among two groups of cashiers and a control population. The two groups of cashiers include one working on checkstands with a poor ergonomic design and another working on checkstands with an improved ergonomic design. The determination of which checkstands constitutes a poorer versus an improved design was made by a panel of six, including four

ergonomic experts, a supermarket industrial engineer and a labor union safety and health specialist. Both groups of cashiers will be compared to a control group of supermarket workers who are not exposed to ergonomic stressors and primarily provide customer assistance.

Each of the three groups in the study will include approximately 200 workers. The epidemiological assessment will include a questionnaire which assesses musculoskeletal discomfort, documents work history, and appraises potential confounders including hobbies, medical conditions and second jobs. A standardized musculoskeletal examination will be conducted on all participants and a sample of symptomatic and asymptomatic workers will have nerve conduction velocity testing. Job stress factors will be measured utilizing scales from the NIOSH Generic Job Stress Questionnaire as well as other standardized assessment instruments. These factors include excessive repetitive work load, low decision latitude, continuous interpersonal interactions, time pressures and variance in workload.

Ergonomic evaluation will quantify job repetitiveness and awkward postures and estimate force. Since the number of items processed by each cashier does not vary significantly between checkstand designs, this study should help to determine the relative importance of improving workstation design while maintaining a relatively high repetition rate. Interaction between psychological and ergonomic stresses will also be assessed since many of the work stress factors, such as time pressures, may contribute to awkward postures.



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