An Effective Office Ergonomic Assessment and Intervention Program

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A significant portion of U.S. employees are office based and their work is sedentary. Office ergonomics is relevant to this population of employees to minimize the deleterious effects of static or sustained postures. Occupational health nurses currently conduct ergonomic assessments and provide interventions to decrease physical stressors. This article describes a straightforward process occupational health nurses can use to augment their ergonomic assessment and evaluation activities.

In most companies, a significant portion of employees are office based. It is often assumed that these employees work in an injury-free environment. However, many hazards in the office (e.g., indoor air quality, slip and fall hazards, fire and life safety concerns, indoor lighting, and ergonomics) can potentially impact the well-being of employees on a daily basis. Occupational health nurses work to modify or eliminate these hazards, occupational and non-occupational injuries, and short- and long-term disability cases and use wellness initiatives to strengthen employees. Although many companies place a priority on all of these concerns, office ergonomics is a program that offers demonstrable value added, gaining the support of upper management.

OFFICE ERGONOMICS

Ergonomics is defined as an applied science concerned with designing and arranging things individuals use so that the individuals and things interact most efficiently and safely (Merriam-Webster, 2009). It is also defined as “a multidisciplinary scientific system that provides information about human capacities, object design, and environments for safe human activity” (Fisher & Gibson, 2008, p. 108). Assessing human factors is an essential part of ergonomics.

In the office environment, where work tends to be sedentary and the day’s activities consist largely of computer work, telephone communication, and sustained postures (Fisher & Gibson, 2008), neutral positioning of the employee to minimize physical stressors on the body is the emphasis for ergonomic intervention. If the occupational health nurse intervenes appropriately, the employee will experience positive effects on the eyes, back, shoulders, neck, arms, and wrists. The company will receive significant return on investment if the appropriate adjustments are made and employees adhere to the recommendations.

A U.S. company engaged a multi-focused team including Facilities, Environmental Health and Safety (EHS), Human Resources, and experienced occupational health nurses to respond to assessed needs. The program design is continuously reviewed by all collaborators and has resulted in enhancements to administrative and workplace solutions at the behest of the nurses, who schedule, perform, and evaluate the results of the assessments. For example, the Facilities personnel previously retained only a limited variety of basic equipment, which did not fit the needs of all employees. Through the developed partnership, they expanded the variety of equipment available, which had a significant impact on overall outcomes and employee satisfaction.

Occupational health nurses hold a unique advantage as ergonomic evaluators. Nurses are capable of not only performing these evaluations but also having a far reaching impact on employees’ general health by taking advantage of ergonomic interactions. Nurses often identify other major is-

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sues affecting the overall well-being of employees and provide guidance and consultation for resolution or referral to the employer-based wellness or disease management programs. This intervention can decrease the cost of employee benefits and reduce the soft dollar costs associated with employee productivity and absenteeism.

THE PROCESS
To successfully administer this program, an efficient and effective system must be designed, as only one nurse may serve several thousand office workers. The process incorporates a self-assessment tool, an e-mail-based request system, a scheduler, and the evaluation and evaluation summary.

Self-Assessment Tool
The company has a web-based self-assessment tool for employees who wish to adjust their chairs or the organization of their work environment, bringing frequently used items closer to the work zone. The tool provides instructions and measurements for appropriate desk height and seat adjustment. It walks employees through a zone-based system for the arrangement of work tools on the desk. Zone A items are those that are frequently used and should be positioned close to the employee (e.g., the telephone). Zone B items are those that are used less frequently, but at least daily. Zone C items are rarely used (e.g., reference books) but need to be available. In addition, the tool addresses task lighting. This is an effective solution for resource-limited organizations, but it may have limited value because it is accessed primarily by self-motivated employees.

E-mail-Based Request System
The e-mail ergonomics request system can be accessed by employees from a website when they feel their needs exceed the solutions proposed on the self-assessment tool. The e-mail tool is designed to automatically send employees replies indicating their requests have been received. It also simultaneously notifies the evaluator responsible for each employee’s “home building” by using off the shelf functions of most common e-mail readers. This particular tool uses Microsoft Outlook, which sorts the mail to specific building location folders in the ergonomics e-mail inbox based on the building selection from the website.

The e-mail system provides request notification. It incorporates a spreadsheet tool listing employees’ contact information and location and other pertinent information. In addition, the spreadsheet is printed so nurses can take evaluations. It is used to document the basic findings of each evaluation and associated recommendations.

Scheduling the Evaluation
Scheduling the examination is relatively straightforward. Using the ergonomics e-mail calendar, a meeting invitation is sent to an employee for consideration. The nurse has 5 business days to schedule the evaluation and 10 days in which to perform the evaluation; variances are allowed for difficult to schedule employees.

The Evaluation
Although to some it may sound complex, the evaluation is not difficult to perform. It does, however, require training. At a minimum, the occupational health nurse should have an understanding of posture and forces applied to various body parts during common daily office activities. The occupational health nurse must understand the physics of various tasks. What force is applied when a person is typing over a specific duration? How much is the worker using the forearms and wrists? Many resources are available from the American Association of Occupational Health Nurses, Inc., including AAOHN Journal articles and the AAOHN Core Curriculum, to assist occupational health nurses. It is recommended that occupational health nurses take a formal course during the annual AAOHN Symposium, an AAOHN webinar, or local university classes. Commercial firms also provide effective training in the basics of ergonomics.

Office ergonomic evaluations typically require a 1-hour time commitment per evaluation, including time to schedule and assess the situation and then analyze and document the results of the assessment. Occupational health nurses can perform and document such evaluations because of their understanding of the human body and abnormal physiological effects that could be associated with work.

As companies may expect the entire office-based population to have an ergonomic screening, the team developed a tool to include lay evaluators because the occupational health department was overwhelmed with requests. The lay evaluator’s role was to assess healthy employees in their work environment and teach them how to avoid conditions that might develop into a chronic musculoskeletal disorder. The company put out a call for volunteers who receive basic training in ergonomics and commit to conducting a specific number of evaluations each year. The training consists of:

- Recognition of awkward head, neck, back, and wrist positions.
- How to recognize increased hand force associated with prolonged pinch grip.
- Recognizing repetitive motion.
- How to maximize use of the company self-assessment tool.
- How to adjust chairs, desks, and other equipment to best advantage.
- How to order equipment to meet identified needs.
- Recognizing triggers that would result in an immediate referral to the occupational health nurse.

The lay evaluator learned the rationales for suggested interventions and how to explain them to employees so that the interventions would be more readily accepted. All lay evaluations were reviewed by the nurse, who called each employee to assess the positive impact of the ergonomic changes. Any concerns identified by the nurse were clarified through a face-to-face consultation. In addition, nurses were responsible for...
for coordinating evaluations of the lay evaluator and the program in general. This modification allows nurses to focus more on problematic cases while increasing the capacity of the ergonomic program.

Evaluation Summary

Following the evaluation, nurses provide employees with documents outlining suggested improvements to the workplace. Typical equipment includes keyboards, special mice, and office aids such as document holders and instructions for appropriate use.

In addition, nurses complete a database tool accessible by the company’s Facilities department. This tool records specific adjustments needed for desk heights and retains them for future reference should the employee move to a new location, eliminating the need to repeat the evaluation.

Postevaluation Survey

Surveys are sent to employees 6 weeks after the date of the evaluation to assess their comfort and overall satisfaction with the program. The evaluation request is prepared and placed in a delayed send queue using the delay send function of the Outlook e-mail system. This system allows nurses to complete all tasks associated with the ergonomic evaluation within 24 hours of the evaluation.

SUMMARY

For this specific client company, 788 ergonomic evaluations occurred during a 3-month period. With each of these assessments, the occupational health nurse augmented the employer’s mission of contributing to a safe and healthy workplace and a healthy work force. Office ergonomics and occupational health nursing are an exceptional match with the synergistic benefits to the employee and the employer exceeding the company’s expectation of ergonomics alone. Increasing employees’ awareness of their workstations and how to decrease risk factors associated with musculoskeletal injury can prevent injury, increase employee satisfaction and productivity, and bring a financial return to the employer.

REFERENCES

