

Ergonomics for the Aging Population: Implementing Methods to Maintain Quality of Life

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Assisting the Aging Population With Ergonomics

The period of older adulthood is often characterized by changes in physical and cognitive abilities. It is quite common for the elderly to experience changes in their health, decreased visual and auditory abilities, and changes in their ability to move about from place to place. Although not all older adults exhibit these changes, the ones that do can often feel out of place in society.

Since we live in an environment that expects us to be independent and self-sufficient, some elderly may feel that their surroundings are not designed with them in mind. Locations in which they are present should be designed in a manner that suits their needs. In addition, individuals who work with the elderly need to be aware of their physical and cognitive abilities, and how they influence their interactions with the environment. By learning more about the discipline of ergonomics, individuals can begin to understand how to improve the surroundings of older adults and, in turn, help maintain their quality of life.

Applying The Methods of Ergonomics to Health Care Settings

The typical changes experienced in older adulthood are often accompanied by increased visits to various short-term and long-term health care settings, such as hospitals, doctors' offices, rehabilitation centers, and nursing homes. Since these visits are often anything but enjoyable, it is important to make these settings as accessible and pleasing as possible. By applying the methods of ergonomics to

health care centers, older adults can continue to receive essential care in environments that are designed for their needs.

In terms of environmental factors, research has shown that carpeted floors in patient-centered situations can lead to both physical and psychological improvements. Several patients preferred carpet to vinyl composition flooring, for reasons that included slip resistance, comfort, and perceived noise reduction. Elderly patients have been found to walk more efficiently (have greater step length, speed) and feel more secure and confident on carpeted, compared to vinyl, surfaces (Wilmott, 1986). In addition, visitors tend to spend more time with patients in rooms with carpet than rooms with vinyl composition flooring. Therefore, it is possible that carpet might promote improved health outcomes by heightening social support (Harris, 2000). All of these factors combined help to illustrate some of the ways that factors in the environment can improve and maintain well-being.

Benefits of Improved Design to Patients, Health Care Workers and Their Interactions With Patients

Functional environments that have patient-centered or supportive characteristics can help patients cope with the stress that often accompanies illness (Ulrich, 1991). Several environmental characteristics have been found to influence patient health outcomes. Studies have shown that well-designed environments can, for instance, reduce anxiety, lower blood pressure, and lessen pain. These surroundings typically have adequate lighting, comfortable and

accessible furnishings, and surfaces and spaces that allow ease of movement. Conversely, research has linked poor design, or psychosocially unsupportive surroundings, to negative effects such as higher occurrence of restlessness, elevated depression, greater need for pain treatment, and, in certain situations, longer hospital stays (Ulrich, 1991; 1992).

Health care workers, as well as patients, benefit from good design. Supportive designs of work environments can help employees cope better with stress associated with their jobs, reduce absenteeism, and may lower turnover. In addition to the environmental characteristics that can benefit patient outcomes, employees can also benefit from having access to patient-related instruments that are user-friendly and safe to use. This accessibility of instruments will not only help employees in performing and completing their duties, but will also influence how comfortable the patient responds to the instruments.

Whether the device is simply to measure blood pressure or to aid in mobility, ergonomically sound devices can help the patient feel more comfortable. Employees can also benefit from working in a safe and friendly environment. As a result, employees recognize that they are valued and tend to remain happy (Pearson, 1997). Well-designed environments have been found to be a positive factor in attracting and retaining qualified employees. All of these factors can work to support employees in providing the necessary quality care to their patients.

Recommendations to Professionals and Designers in Health Care

As individuals age, it is expected that certain everyday tasks will become more difficult and challenging. The study and application of ergonomic principles can help

to lessen these effects associated with increased age. In addition, the study of human factors can help in designing products and environments that are more efficient, comfortable, and safe (Gosbee, 2002). Since two of the most common effects of aging are decreased visual and auditory abilities, it is important to design and equip environments with these effects in mind. The use of bright lighting, high contrast materials, and special-purpose lighting can all be helpful in accommodating these changes. The more ways in which older adults sense that they can see and are able to take in the environment, the more likely they are to feel independent and content. Not only will improvements in lighting conditions improve their ability to see and heighten their sense of autonomy, but they will also help in terms of mobility. In terms of their decreased hearing abilities, avoiding high-frequency noises, reducing unnecessary background noises, and allowing older adults to have access to equipment with adjustable noise levels can all help in supporting common auditory changes.

In order to maintain quality of life among the elderly population, healthcare facilities should be designed in ways that support patients in coping with physical or psychological stress. In the case of patients, stress is also an important medical concern because it is both a significant health outcome in and of itself, and it directly and negatively affects many other outcomes (Cohen, Terrell, & Smith, 1991). In terms of reducing stress in health care environments, individuals who aid in the healthcare design process ought to begin by eliminating environmental characteristics that are stressful or can have direct negative impacts on health outcomes. Additionally, features in the environment should include factors that can calm patients, reduce stress, and strengthen coping resources and healthy

outcomes (Ulrich, 1991; 1997; 1999). Some of these age-considerate designs may include: open and leveled spaces for ease of movement, bright lights to increase visibility and improve perception, warm-toned decorations, walls, and flooring, and relaxing and accessible accommodations.

As for future health care designs, healthcare environments should help promote improved outcomes by designing surroundings that promote a sense of control and foster access to objects in their surroundings. Research has shown that people who feel they have some control over situations cope better with stress, are less stressed, and have better health than people who feel they lack control (Evans & Cohen, 1987; Ulrich, 1999). Design approaches for fostering a greater sense of control for patients include providing: accessible dimmers that enable control over lighting, headphones that allow patients to select music and control background sound volume, televisions controllable by individual patients, and architectural design and signage that facilitate mobility.

By taking into account the needs of the elderly population, and also the extent of their cognitive and physical abilities and disabilities, professionals and health care workers can all help in designing and organizing their environment in manners that help improve and maintain their quality of life.

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