

Designing Ergonomics House for Elderly

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ABSTRACT: Statistics showed that the proportion of elderly people (aged 60 years and above) in Indonesia has been steadily increased over the last decades, i.e., in 2000, percentage of elderly is 7.18% of total national population compared to 7.56% in 2010. This increasing proportion is also accompanied by longer life expectancy. Therefore, it is pertinent to address elderly needs and concerns, which have direct impacts on their well-being and quality of life. This paper presents an application of ergonomics for elderly people, especially in bathroom, where most of the accidents occurred. A bathroom needs to be equipped with tools that is useful to overcome the physical limitation of elderly, such as handle that is installed for helping them got up, anti-slip doormat and also a bell for alertness. Furthermore, a wheelchair was also redesigned, which much attention was paid to elderly daily living activities, e.g., eating, going to toilet and bathing. Overall, the purpose of this study is to enable elderly to execute their daily activities more comfortably, safely and if impossible, without help by nurse or other adults.

Keywords: elderly, bathroom, wheelchair, ergonomics at home

1 INTRODUCTION

Continuous decline in mortality and success of birth control rate as well as health care improvement in the past decade made structure of Indonesian population has constrictive pyramid type. It is estimated by United Nation, that in 2045, elderly (age 60 years and above) will constitute 28.68% of total national population, with life length 77.6 years (Ministry of Health, 2013). Therefore, it is important to address elderly needs and concerns, which have direct impacts on their well-being and quality of life.

Majority of elderly in Indonesia, lives with their children or siblings. Living with an elderly person at home is a delicate phase in any family's life, because a major number of such people need assistance to accomplish routine activities. Inadequate attention to spaces at home may affect health, induce accidents and impose limits to execution of daily activities. Domestic accidents that old people might be exposed to could be prevented by family directions and physical changes in the space of a home (Camara et al, 2010). Safety, comfort and physical and social health, must be highlighted in order to increase the quality of elderly lives.

This paper presents application of ergonomics at home for elderly people, especially in bathroom, where most of the accidents occur.

elderly with physical disabilities either due to chronic sickness or aging or some other reasons have to spend most of their time in a seated posture or confined to wheelchairs (Wang et al., 2014). anatomical changes will occur, such as their spines curve forward and their body heights decrease (Wang et al., 2014), either due to the long-time seated posture or aging (i.e., a big proportion of disabled people, especially the wheelchair users are the elderly). Therefore, a design of wheelchair to meet elderly's physical demand is of highly needed. In addition, it will help reducing the physical strain and work load to their personal helpers.

2 METHODOLOGY

The research approach administered in this study is participatory, whereby the comfort and safety of a bathroom was assessed by interviewing 19 elderly. By interviewing, elderly could expressed their expectations and needs of bathroom's facilities as well as problems occurred in the bathroom. The respondents were the elderly who could perform their daily activities without assistance from a personal helper.

The interview questions comprise two sections. The first section is about the respondents' personal profile. The second section lists the problems encountered in the bathroom.