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研究成果報告書

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住宅内移動時転倒のヒトと空間双方からのリスク評価標準化と予防サポートアプリ開発

Standardization of Risk Assessment from both People and Spaces at Moving around the House, and Development of a Fall Prevention Support Application

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Abstract

Becoming old age, it is easier to fall due to the decline of physical functions such as frailty, but falls are often accompanied by fractures, which is one of the main factors that make the elderly in need of long-term care. According to the Tokyo Fire Department, Tokyo (aging rate: 22.5%, 2017) of the cases of ambulance dispatch due to falls during daily life accidents, 47.8% occurred in residential areas such as houses. In addition, according to our previous survey conducted in Omuta City(aging rate: 35.3%), Fukuoka Prefecture, 70.6% of the cases of ambulance dispatch due to falls occurred in residensial area. Since the elderly spend more time in their homes than other generations, it is necessary to reduce the risk of fall over in moving spaces in houses, especially in Japan, which is a super-aged society. Furthermore, as the cost of medical and nursing care continues to rise year by year, the proportion of falls and fractures is also increasing, and from the perspective of national sustainability, reducing the risk of falls is a major issue that needs to be addressed in the future.

Falls are a phenomenon caused by a complex overlap of various factors, such as physical and environmental factors. Therefore, in order to reduce the risk of falls in the house, it is not only an approach from a single field such as architecture field, but also a variety of factors such as physical and external factors. Thus it is essential to have experts in each field such as nursing and informatics. In our previous studies, they have gained a lot of knowledge about the situation of falls inside and outside the house and measures to prevent falls from the standpoint of architecture and medicine, but there has been a tendency to draw conclusions by focusing on people in medicine and the space itself in architecture.

Therefore, in this research, experts in not only medical or architecture but also physical therapy (rehabilitation), nursing, informatics, welfare engineering, etc. gather to standardize the method of estimating the risk of falls from both humans and spaces and try to develope a protocol of app for fall prevention. In addition to reducing the risk of falls in homes, we aim to realize a tool that can raise awareness of the fall prevention in homes among experts in various fields related to home renovation.