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題名	The voice call system to prevent falls of care recipients in the toilet
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概要	<p>In Japan, due to a declining birthrate and an aging population, issues such as "shortage of care workers" and "increase in burden on care workers" are happened in care services. Based on nursing technology by using knowledge of mechatronics and programming skills to solve the problems brought by the aging population in Japan is the goal of our research. In order to solve these problems, the demand for labor saving and automation through the development of IT and robots has been increasing year by year, and they must be quickly and appropriately introduced to care facilities. Besides, it is also important to share the information of technology education teaching practice to other researchers with the same goal. In care workplaces, there are many accidents which care recipients fall by trying to stand up after excretion. To prevent this, care workers are always waiting near the toilet day and night, and there is a strong demand for automation and labor savings. However, due to privacy issues, sensors such as cameras cannot be used. In this study, in cooperation with the Tochigi Occupational Therapists Association, we designed and manufactured the system to prevent falls of care recipients in the toilet. It is important that Technology Education through manufacturing utilize mechatronics contributes to people's lives. This study deals with unmanned and automatized care using sensors and programming that students are learning in Japanese Technology Education classes. Main results obtained in this study are indicated as bellow, 1) This system prevents fractures from falls from care recipients. Also, avoid eating toilet paper, 2) The system not included image sensors, so it does not violate the privacy of care recipients, 3) The system can be installed on almost all toilets because it is only installed on the back cover of the toilet paper holder, 4) The care recipient can enter toilet alone. Therefore, the system reduces the burden on care workers, allowing them to perform other tasks, 5) The production cost is kept to about 5,000JPY, which is excellent in cost performance.</p>
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