*Y-S. CHEN, J-A. WANG, K-W. CHANG, Y-J. LIN, M-C. HSIEH, Y-S. LI, J. SEBASTIAN, C-H. CHANG, Y-L. HSU.* ***Telepresence robot: Care delivery in different forms.*** *Gerontechnology 2012;11(2):366;* doi:10.4017/gt.2012.11.02.410.00 **Purpose** Aging is associated with an increased risk of isolation. Information and communication technologies have been utilized to assist homecare of older adults. However, in addition to transmitting vital sign monitoring data for healthcare purposes, the older adults may expect more communication with their family members, as well as sharing of life experiences and feelings through different forms of interactions. Communication tools such as mobile phones, video conferencing systems facilitate interpersonal communication in terms of real-time verbal communication. Mehrabian and Ferris reported that in face-to-face communication, clues from spoken words, voice tone, and facial expression contribute 7%, 38%, and 55% respectively to the total comprehension[1]. Nonverbal communication, such as facial expression and body language, is more powerful and efficient in conveying ideas, thoughts, feelings, and emotions. **Method** The 'Telepresence Robot for Interpersonal Communication (TRiC)' has been developed to not only provide verbal communication but also the nonverbal aspects of interpersonal communication[2]. 'TRiCmini Plus', the 3rd generation of TRiC, is tele-operated by the remote user via internet, and the three-dimensional face-to-face interaction is duplicated with two-way audio communication (*Figure 1*). It also demonstrates extensive capability to provide different levels of 'care delivery' to the older adults through robotic movement, vital sign monitoring, and other forms of communications. 'TRiCmini Plus' integrates two distinct applications, the Care Delivery Frame (CDF) and the tele-presence robot. CDF is a software App designed for older adults as an information channel on the tablet which is also the "face" of TRiCmini Plus. In addition to showing robotic facial expressions, it is the interface for vital sign data transmission and analysis, as well as for the living assistance functions. CDF is integrated with social network services such as Facebook, so that children or caregivers can remotely share photos or video clips with the older adults. Moreover, the tablet is also the control centre of the tele-presence robot. Robot control functions are developed as another App on the tablet, and control commands are transmitted through Wi-Fi then relayed to the robot control microprocessor via Bluetooth. In this innovative control structure, the robot control App can be downloaded, maintained and updated easily through the Internet. **Results & Discussion** The prototype and functional test of TRiCmini Plus have been completed (*Figure 1*). The required internet bandwidth is at least 150/5kB for smooth real-time communication. Currently it is undergoing usability evaluation, including the interface design (software interface and robot facial/physical expressions) and operation efficiency for both remote and local users. Finally, the effectiveness of communication will be evaluated in real application scenarios (home environment and senior users) to confirm the 'care delivery' in different forms provided by TRiCmini Plus, actually meet the expectation from older adults.

**References**

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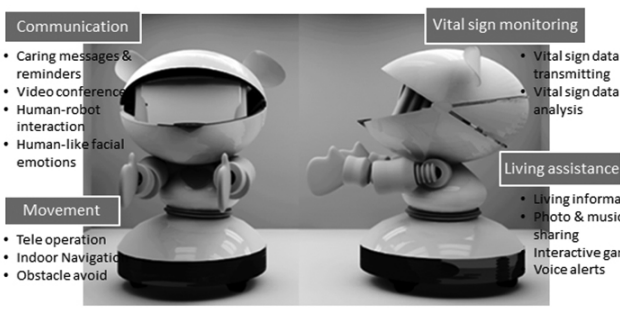


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|---|---|---|---|
| Height | 45.5 cm | Max. angle of climb | 7.7° |
| Width | 30.0 cm | Speed of moving straight in 5 degrees slope | 9.2 cm/s |
| Length | 28.3 cm | Working Voltage | 12.0V |
| Battery weight | 1.0 kg | Battery Voltage | 13.0 V |
| Total weight | 3.6 kg | Current of movement | 2.0A |
| | | Max. current | 2.5A |

*Figure 1. TRiCmini Plus with four main functions and specifications*