

C. HUANG, C-L. CHEN, Y-C. LU. **An assistive design on wringing out towels for older adults.** *Gerontechnology* 2016;15(suppl):83s; doi:10.4017/gt.2016.15.s.689.00 **Purpose** Thanks to the growing living standards and the progress of medical and hygiene technology, the lifespan of human beings is significantly extended. However, more and more elderly people face deterioration physically and psychologically. When it comes to hand arthritis, the terminal finger joints are the sites of predilection¹. The grip strength of older adults is also deteriorated as they get older. We have observed that some older adults may have difficulties in wringing out a towel during their daily hygiene routine. Therefore, we designed an assistive tool for wringing out a towel for older adults. This study aims to test the feasibility of the design. **Method** The design is a 3cm-diameter and 35cm-long wooden stick with a few holes penetrating the shaft and both ends hook-shaped (*Figure 1*). The towel can be wrapped around this stick from end to end and twisted to drain out water. It was expected the design can help the older adults to save their labor in wringing out a towel. The weight of the wet towel containing water was controlled in 300g in the test. The design was tested by ten senior citizens (nine males and one female). These ten senior citizens were divided into two groups, one is young-old (65-74; four males and one female), and the other is middle-old (75-84; five males). There were two steps in this test. In the first step, the subjects' handgrip strengths were measured and recorded. After a 5-minute break, they were asked to apply their ordinary way to wring out the towel and the drainage water were weighed and recorded. In the second step, subjects were asked to wring out the towel with the design and the drainage water was weighed and recorded. Finally, comparisons of the effect of wringing out the towel between young-old and middle-old against using ordinary way and using the design were made. **Results & Discussion** *Table 1* shows the result of the test. The difference on grip strength between young-old and middle-old is minor. This confirms the finding that no correlation exists between age and handgrip strength². The result shows that the efficiency of the design was not positively proofed yet, however, the middle-old wrung out more water than the young-old did when using the design. It may suggest that the design has a potential to be improved to help older senior citizens to wring out the towel easily. Further improvements and test on the design are needed.

References

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Figure 1. A design for wringing out towels

Table 1. A comparison of the wringing out water between young-old and middle-old with the ordinary way and the design

Parameter	Subjects	
	Young-old n=5	Middle-old n=5
Average age, yrs	68.8	82.2
Grip strength/SD, kg	28.8±11.4	28.78±5.36
Wringing-out-water-with-the-ordinary-way±SD, g	118.2±7.2	114.0±15.3
Wringing-out-water-with-the-design±SD, g	68.4±9.2	74.4±23.4