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## BACKGROUND

With the global issue of aging and increased number of older adults, the age-related diseases were highlighted. Age-related hearing loss was a major risk factor of prevalence of dementia and had common symptoms of dementia. Despite the need for and importance of knowledge and intervention protocols for hearing care of dementia, there were no guidelines.

## OBJECT

This study aimed to develop the Dementia Professionals Integrated Guidelines for Hearing Information (H-GUIDE), an educational resource for hearing care and interventions, and determine its impact on dementia care providers.

## METHODS and MATERIALS

A cross-sectional multicenter survey was conducted to avoid differences resulted in local distribution and to identify the effect of H-GUIDE for the dementia healthcare providers. With significant power calculation, 66 subjects were derived (F test, Power = 0.95, Alpha error probability = 0.05). Because our study design consisted of pre-, post-, and follow-up comparisons with an interval of 2 months between post-test and follow-up, the dropout rate of subjects should be taken into consideration. To account for a dropout rate of 5–20%, a sample size of 71 subjects was targeted.

The content of H-GUIDE consisted of 1) Introduction to Hearing Aids, 2) Use of Hearing Aids, 3) Maintenance of Hearing Aids and the Appendix (i.e., hearing loss and dementia, hearing test). A total of 71 subjects working at long-term care facilities (7 facility managers and 64 healthcare professionals) participated. While using three questionnaires, Knowledge, Attitude, Practice (KAP), Technology Acceptance Model (TAM), and Hearing Aid Knowledge Inventory (HAKI), they were responded at pre-test (before education), post-test (after education), and follow-up (2 months after post-test).

## RESULTS

Dementia healthcare providers trained on H-GUIDE for an average of 2.54 hours (SD: 1.68) and studied H-GUIDE repeatedly 2.02 times on average. Facility managers' knowledge and attitude significantly improved in KAP, but there was no statistical change in practice. Healthcare professionals showed significant improvement in knowledge, whereas attitude and practice showed no statistical significances with H-GUIDE (fig.1). TAM results showed that both scores of perceived usefulness (PU) and intention to use (IU) were improved, but only IU had statistical significance (fig.2).

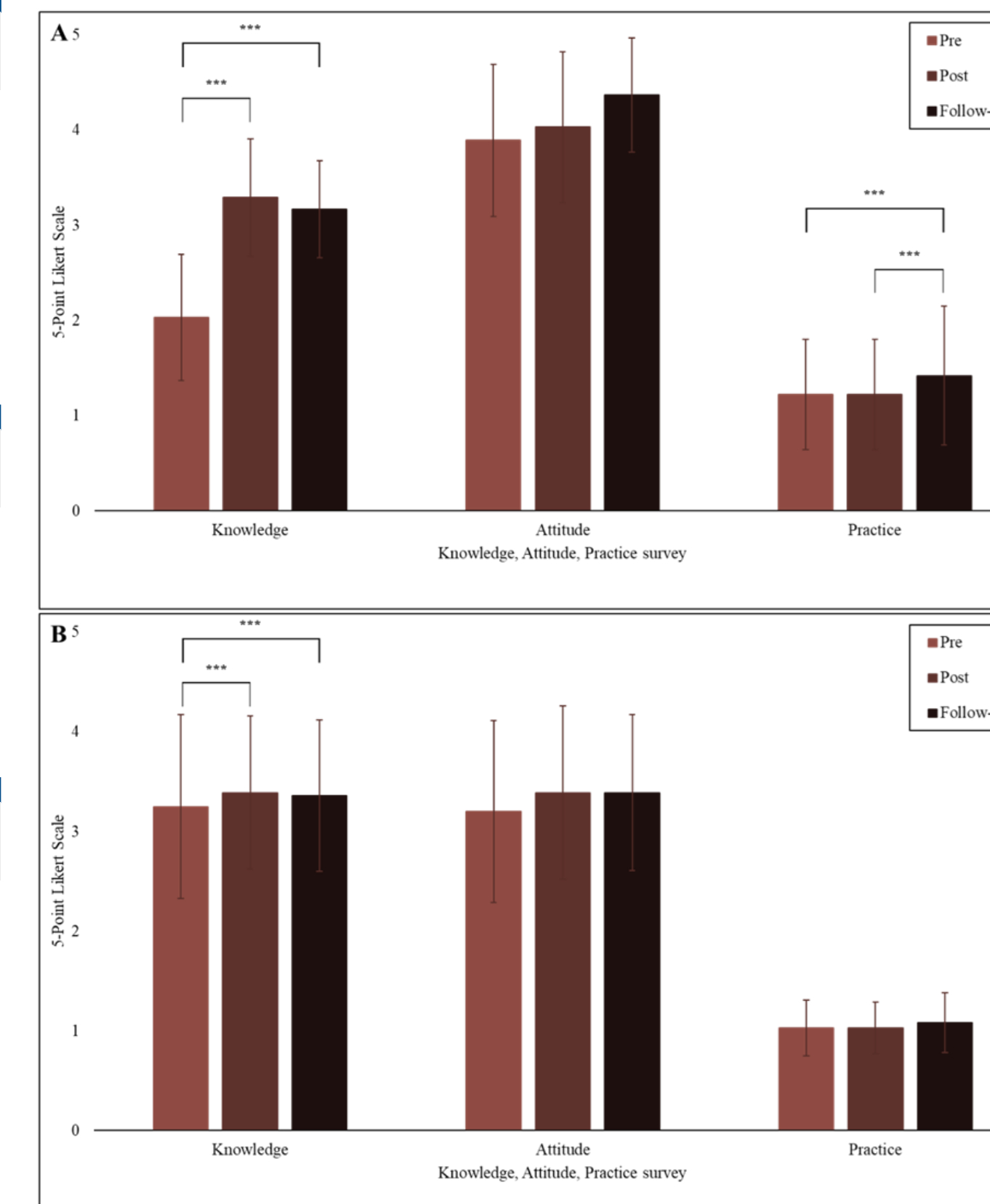


Fig. 1. Results of the KAP questionnaire for facility manager and healthcare professionals. Facility managers showed that Attitude area of the KAP questionnaire was higher score than the Knowledge and Practice area (A). Although the Knowledge and Attitude area of the KAP questionnaire showed similar results, the Practice area showed the lowest score for healthcare professionals (B).

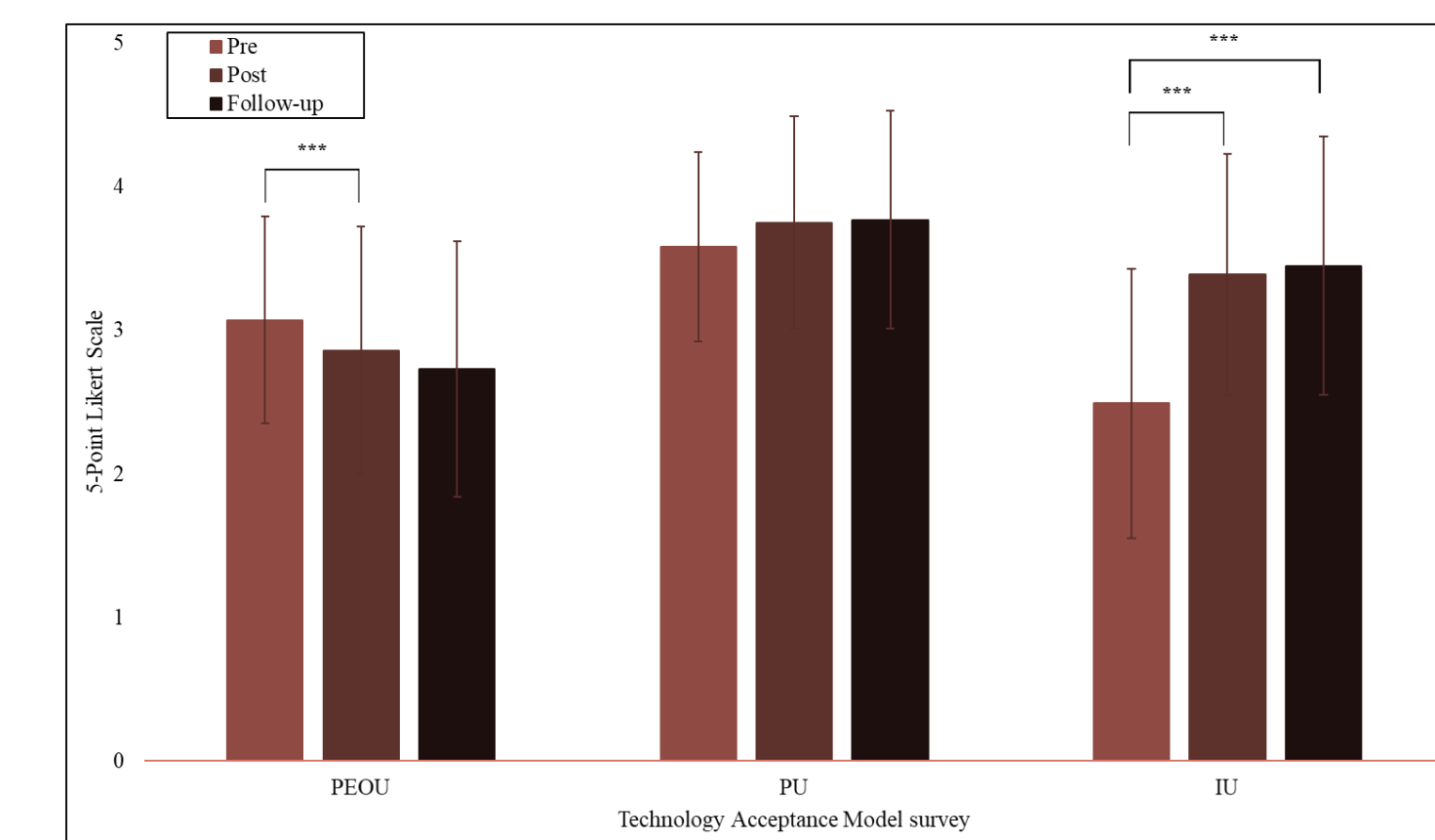


Fig. 2. Results for the TAM survey. Overall, areas of the TAM survey, such as perceived usefulness (PU) and intention to use (IU), improved and/or were maintained, except for perceived ease of use (PEOU). Asterisks indicate a statistical significance, \*\*\*:  $p < 0.001$ , \*\*:  $p < 0.01$ , \*:  $p < 0.05$ .

Also, score of perceived ease of use (PEOU) decreased significantly. The percent correct on the HAKI questionnaire meaningfully improved in the post-test compared to the pre-test and was maintained in the follow-up test.

## CONCLUSION

In general, H-GUIDE had resulted in significant improvements in hearing-related knowledge and practice. Additionally, although it was difficult for dementia healthcare providers to learn, they recognized the necessity and importance of H-GUIDE.

The efficacy of H-GUIDE was confirmed in various aspects (e.g., hearing-related knowledge, perceived usefulness, intention to use, and hearing aid knowledge) through self-reported questionnaires. These results suggest that the H-GUIDE will be very useful if a systematic and comprehensive new content and methodological basis for H-GUIDE's validity period and sessions might be followed.

## KEY REFERENCE

Hazzard A, Dabrow S, Celano M, McFadden-Garden T, Melhado T. Training residents in pediatric literacy: impact on knowledge, attitudes and practice. *Ambul Child Health*. 2000 Jun;6(4):237-46.