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Efficacy of a newly developed auditory – cognitive training system on speech recognition, central auditory processing and cognitive ability among older adults with normal cognition and with neurocognitive impairment (Article)

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Abstract

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Aim: To evaluate the efficacy of a newly developed auditory – cognitive training system on speech recognition, central auditory processing and cognition among older adults with normal cognition (NC) and with neurocognitive impairment (NCI). Methods: A double-blind quasi-experiment was carried out on NC (n = 43) and NCI (n = 33) groups. Participants in each group were randomly assigned into treatment and control programs groups. The treatment group underwent auditory – cognitive training, whereas the control group was assigned to watch documentary videos, three times per week, for 8 consecutive weeks. Study outcomes that included Montreal Cognitive Assessment, Malay Hearing in Noise Test, Dichotic Digit Test, Gaps in Noise Test and Pitch Pattern Sequence Test were measured at 4-week intervals at baseline, and weeks 4, 8 and 12. Results: Mixed design anova showed significant training effects in total Montreal Cognitive Assessment and Dichotic Digit Test in both groups, NC ($P < 0.001$) and NCI ($P < 0.01$). The NC group also showed significant training effects in the Malay Hearing in Noise Test (quiet) ($P < 0.01$), Gaps in Noise Test ($P < 0.001$) and Pitch Pattern Sequence Test (humming) ($P < 0.05$). All training effects were sustained up to 4 weeks after the training ended. Conclusions: The present study suggests that the newly developed auditory – cognitive training system has the potential to improve general cognition and some of the auditory processing abilities in both the NC and NCI groups. Because of the short test–retest intervals used in the present study, it is possible that the training effects were influenced by learning effect and, therefore, should be considered cautiously. Geriatr Gerontol Int 2019; 19: 768–773. © 2019 Japan Geriatrics Society

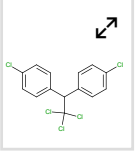
SciVal Topic Prominence ⓘ

Topic: Speech | Noise | Listening conditions

Prominence percentile: 92.018 ⓘ

Chemistry database information ⓘ

Substances



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auditory processing | auditory – cognitive training | cognition | elderly | speech recognition

Indexed keywords

EMTREE medical terms: aged | analysis of variance | article | clinical article | comparative effectiveness | controlled study | female | human | human experiment | learning | male | Montreal cognitive assessment | outcome assessment | pitch | randomized controlled trial | speech discrimination | speech -in-noise test | videorecording | auditory rehabilitation | cognition | devices | disorders of higher cerebral function | double blind procedure | hearing | procedures | psychology | software | speech audiometry | speech perception | treatment outcome

MeSH: Aged | Audiometry, Speech | Auditory Perception | Cognition | Correction of Hearing Impairment | Double-Blind Method | Female | Humans | Learning | Male | Neurocognitive Disorders | Software | Speech Perception | Treatment Outcome

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