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Loneliness causes language loss: study

The study found that similar amounts of brain processing power were used in responding to correct and incorrect information among lonely elderly people

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Loneliness among elderly people can cause language loss similar to early signs of dementia, even without physical deterioration, a study presented yesterday by the National Health Research Institutes found.

Loneliness can cause low mood, mental health issues, a reduced immune system and even abnormal brain activity related to language comprehension, National Center for Geriatrics and Welfare

Research assistant researcher Huang Hsu-wen (黃緒文) said.

It could possibly cause symptoms of early-onset dementia, even in elderly people without any prior signs of cognitive decline, he said.

Loneliness can encompass the feeling that nobody truly understands you, or a growing sense of isolation and social withdrawal, and can happen at any stage of one's life, Huang said.

The research team cooperated with several academic institutions to recruit 50 healthy seniors with an average age of 66, he said.

The participants were asked to complete a word sorting task while researchers monitored their brain activity using electroencephalography (EEG).

Researchers focused on N400, an important brainwave marker of semantic processing, the response to language, which rises when a word does not match, as the brain utilizes extra processing power.

During the trial, participants were asked questions such as: "Which one of these is a household electrical appliance?" Huang said.

For obvious answers such as "television," the brain can easily process the correct answer, but lesser-thought-of answers such as "iron" and incorrect answers such as "meatball" create different N400 brainwave responses, he said.

The study found that although lonelier respondents still responded correctly and showed no cognitive decline, they used almost the same processing power for obvious and more abstract, or incorrect answers, showing a decline in language processing.

The study therefore gave concrete evidence that loneliness affects brainwaves, which could lead to situations of "communication without understanding" among elderly people, Huang said.

This could cause complications in scenarios such as healthcare professionals explaining prescriptions to elderly patients, who would nod their heads whether they understood or not, he said.

These situations could lead to miscommunication, anxiety or withdrawal from social interactions, Huang said.

The researchers urged the government and elderly care organizations to include "loneliness" in routine health assessments, implement language training courses and organize social events.

Activities such as discussing a set subject, language-related games or group exercises could ensure the elderly retain their language capabilities and social abilities, they said.

Elderly care facilities could also use simplistic language, provide more images and double-check that patients understand what is being said to them, they added.

These tactics could increase inclusivity and ensure effective communication for better overall care, they said.

Language acts as a bridge connecting people, and if this breaks down due to loneliness, seniors are more likely to experience social setbacks, center chief executive Hsu Chih-cheng (許志成) said, adding that he hopes this study would affect how society views loneliness and its effects on the brain.