

## Pengaruh sudoku terhadap fungsi memori kerja dan fungsi kognisi global pada usia lanjut sehat di panti wreda = Effects of sudoku training on working memory and cognitive function among nursing-home residents

Helda Aprilia, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20424550&lokasi=lokal>

---

Abstrak

**ABSTRAK**

**LATAR BELAKANG.** Memori kerja merupakan ranah kognisi yang bertanggungjawab

terhadap sebagian besar masalah kognisi yang dialami seorang

usia lanjut. Tujuan penelitian ini adalah untuk mengetahui manfaat mengisi

Sudoku terhadap fungsi memori kerja dan fungsi kognisi global usia lanjut.

**METODE.** Desain studi adalah uji klinis tidak tersamar. Subjek merupakan

warga Panti Sosial TresnaWerde I dan III DKI Jakarta yang diambil secara

konsekutif kemudian dibagi acak menjadi dua kelompok, perlakuan dan kontrol.

Kelompok perlakuan melakukan latihan Sudoku 3x/minggu selama 12 minggu.

Memori kerja dinilai dengan Trail Making Test part B (TMT-B), fungsi kognisi

global dinilai dengan Montreal Cognitive Assesment versi bahasa Indonesia

(MoCA-Ina).

**HASIL.** Terdapat 24 subjek pada kelompok perlakuan dan 27 subjek pada

kelompok kontrol. Terdapat 13 subjek yang memberikan kesan positif terhadap

latihan Sudoku. Penurunan waktu penyelesaian TMT-B sebesar 11,1 detik pada

kelompok perlakuan dan 18,8 detik pada kelompok kontrol, meskipun tidak

didapatkan perbedaan bermakna antar kedua kelompok ( $p = 0,816$ ). Terdapat 8

subjek (33,3%) dari kelompok perlakuan dan 11 subjek (40,7%) dari kelompok

kontrol yang mengalami peningkatan nilai MoCA-Ina ( $p = 0,530$ ).

**KESIMPULAN.** Sudoku belum terbukti dapat meningkatkan fungsi memori

kerja dan fungsi kognisi global pada usia lanjut sehat, namun peningkatan fungsi

memori kerja yang terlihat pada kedua kelompok menandakan adanya plastisitas

neural pada usia lanjut yang bermanfaat untuk pemeliharaan fungsi kognitif.

<hr>

**ABSTRACT**

**BACKGROUND.** Working memory deficit is responsible for most of the

cognitive problem experienced by older adults. The aim of the present study was to

determine whether Sudoku training might improves these deficits and if so,

whether such changes might be transferred to other cognitive domains.

**METHODS.** This was non-blinding randomized controlled trial. Subjects were

consecutively taken from Panti Sosial TresnaWerde I dan III DKI Jakarta after

series of screening. All subjects were assessed with Indonesian version of Montreal Cognitive Assessment (MoCA-Ina) for cognitive function and Trail Making Test part B (TMT-B) for working memory. The experimental group was given 12 weeks of cognitive alternate-day training based on Sudoku exercises.

**RESULTS.** There are 24 subjects in experimental group and 27 subjects in control group. Nine subjects from each group showed improvement in the TMT-B completion time, although this difference were not statistically significant (experimental group 11.1s Vs control group 18.8s;  $p = 0.816$ ). There were 8 subjects (33.3 %) on experimental group and 11 subjects (40.7 %) on control group had increment in MoCA-Ina scores ( $p = 0.530$ ). Thirteen subjects reported improvements in memory, attention and concentration span.

**CONCLUSIONS.** The use of Sudoku as one of the cognitive training tools on elderly still need further study and discussion regarding limitation of this present study. But the improvement of working memory function as seen in result provides potential brain plasticity for maintaining cognitive function in elderly. ;**BACKGROUND.** Working memory deficit is responsible for most of the cognitive problem experienced by older adults. The aim of the present study was to determine whether Sudoku training might improves these deficits and if so, whether such changes might be transferred to other cognitive domains.

**METHODS.** This was non-blinding randomized controlled trial. Subjects were consecutively taken from Pantia Sosial TresnaWerda I dan III DKI Jakarta after series of screening. All subjects were assessed with Indonesian version of Montreal Cognitive Assessment (MoCA-Ina) for cognitive function and Trail Making Test part B (TMT-B) for working memory. The experimental group was given 12 weeks of cognitive alternate-day training based on Sudoku exercises.

**RESULTS.** There are 24 subjects in experimental group and 27 subjects in control group. Nine subjects from each group showed improvement in the TMT-B completion time, although this difference were not statistically significant (experimental group 11.1s Vs control group 18.8s;  $p = 0.816$ ). There were 8 subjects (33.3 %) on experimental group and 11 subjects (40.7 %) on control group had increment in MoCA-Ina scores ( $p = 0.530$ ). Thirteen subjects reported improvements in memory, attention and concentration span.

**CONCLUSIONS.** The use of Sudoku as one of the cognitive training tools on elderly still need further study and discussion regarding limitation of this present study. But the improvement of working memory function as seen in result provides potential brain plasticity for maintaining cognitive function in elderly. ;**BACKGROUND.** Working memory deficit is responsible for most of the

cognitive problem experienced by older adults. The aim of the present study was to determine whether Sudoku training might improve these deficits and if so, whether such changes might be transferred to other cognitive domains.

**METHODS.** This was a non-blinding randomized controlled trial. Subjects were consecutively taken from Panti Sosial Tresna Werdha I dan III DKI Jakarta after a series of screening. All subjects were assessed with the Indonesian version of Montreal Cognitive Assessment (MoCA-Indo) for cognitive function and Trail Making Test part B (TMT-B) for working memory. The experimental group was given 12 weeks of cognitive alternate-day training based on Sudoku exercises.

**RESULTS.** There are 24 subjects in the experimental group and 27 subjects in the control group. Nine subjects from each group showed improvement in the TMT-B completion time, although this difference was not statistically significant (experimental group 11.1s Vs control group 18.8s;  $p = 0.816$ ). There were 8 subjects (33.3 %) on the experimental group and 11 subjects (40.7 %) on the control group had an increment in MoCA-Indo scores ( $p = 0.530$ ). Thirteen subjects reported improvements in memory, attention and concentration span.

**CONCLUSIONS.** The use of Sudoku as one of the cognitive training tools on the elderly still needs further study and discussion regarding the limitations of this present study. But the improvement of working memory function as seen in the results provides potential brain plasticity for maintaining cognitive function in the elderly. ;**BACKGROUND.** Working memory deficit is responsible for most of the cognitive problem experienced by older adults. The aim of the present study was to determine whether Sudoku training might improve these deficits and if so, whether such changes might be transferred to other cognitive domains.

**METHODS.** This was a non-blinding randomized controlled trial. Subjects were consecutively taken from Panti Sosial Tresna Werdha I dan III DKI Jakarta after a series of screening. All subjects were assessed with the Indonesian version of Montreal Cognitive Assessment (MoCA-Indo) for cognitive function and Trail Making Test part B (TMT-B) for working memory. The experimental group was given 12 weeks of cognitive alternate-day training based on Sudoku exercises.

**RESULTS.** There are 24 subjects in the experimental group and 27 subjects in the control group. Nine subjects from each group showed improvement in the TMT-B completion time, although this difference was not statistically significant (experimental group 11.1s Vs control group 18.8s;  $p = 0.816$ ). There were 8 subjects (33.3 %) on the experimental group and 11 subjects (40.7 %) on the control group had an increment in MoCA-Indo scores ( $p = 0.530$ ). Thirteen subjects reported improvements in memory, attention and concentration span.

CONCLUSIONS. The use of Sudoku as one of the cognitive training tools on elderly still need further study and discussion regarding limitation of this present study. But the improvement of working memory function as seen in result provides potential brain plasticity for maintaining cognitive function in elderly.