

Association Between Executive Functions, Physical Activity and Quality of Life Among Physically Independent Elderly People Living in Elderly Care Institutions in Galle, Sri Lanka

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Background: The proportion of institutionalized elderly people has increased in Sri Lanka during the recent decades as a result of population aging and ongoing sociocultural changes. Cognitive functions will be increasingly important for them for independent living. The executive functions (EFs) such as working memory (WM) and inhibitory control (IC) are cognitive processes that are vital for goal directed behavior.

Objectives: Study was conducted to assess the association between EFs, level of physical activity (PA) and quality of life (QOL) among elderly people living in institutions.

Methods: Study was conducted with 190 elderly people living in institutions. WM was assessed via computerized verbal working memory (VWM) and IC via number of errors in stroop task. Level of PA was assessed using IPAQ while QOL via WHOQOL-BREF. Correlation was assessed through spearman correlation coefficient (r).

Results: The sample comprised of 69.5% (n=132) females with mean age of 71.78 years (+6.5). Mean score of IPAQ was 1117.65 MET-minutes/week (+454.18). Mean total scores of QoL and subscale scores for general, physical, psychological, social and environment domains were 58.66(+11.09), 55.32(+15.06), 62.68(+13.90), 57.18(+14.80), 53.62(+22.11) and 62.30(+11.70) respectively. Mean scores of VWM and stroop tasks were 11.15(+6.14) and 8.88(+3.99) respectively. Both VWM and stroop inhibitory tasks were significantly correlated with PA level (p<0.01). VWM was significantly correlated with total score and environmental, psychological health domains (p<0.05). IC was significantly correlated with environmental, psychological and general health domains (p<0.05).

Conclusion: Both WM and IC was significantly correlated with their level of physical activities and with most of the domains of QOL of the elderly living in institutions.

Association between executive functions, physical activity and quality of life among physically independent elderly people living in elderly care institutions in Galle, Sri Lanka



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Introduction

- The proportion of institutionalized elderly people has increased in Sri Lanka during the recent decades as a result of population aging and ongoing sociocultural changes.
- Cognitive functions will be increasingly important for them for independent living.
- The executive functions (EFs) such as working memory (WM) and inhibitory control (IC) are cognitive processes that are vital for goal directed behavior.

Objective

- Study was conducted to assess the association between EFs, level of physical activity (PA) and quality of life (QOL) among elderly people living in institutions.

Methods

- Study was conducted with 190 physically independent elderly people living in elderly care institutions in Galle District.
- Study instruments : EFs were assessed via computerized verbal working memory (VWM) and stroop inhibitory tasks.
- IPAQ (International Physical Activity Questionnaire) score was used to assess physical activity level.
- WHOQOL-BREF transformed score (WHO Quality of Life-BREF) was used to assess quality of life.

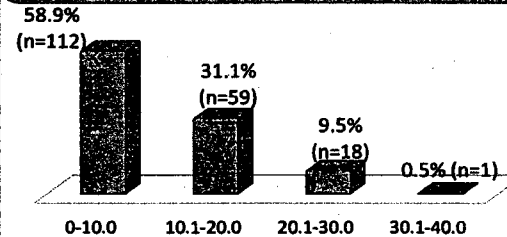
- Data analysis : Using descriptive statistics and spearman correlation coefficient (*r*).

Results

- The sample comprised of 69.5% (n=132) females with mean age of 71.78 years (± 6.5).

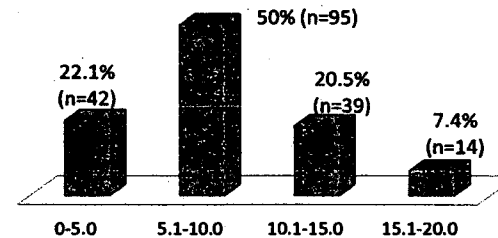
Working memory and Inhibition of elderly

Distribution of score of VWM task



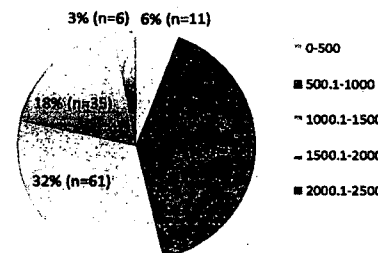
Mean score of VWM span level was 11.15 (± 6.14).

Distribution of error score of Stroop task



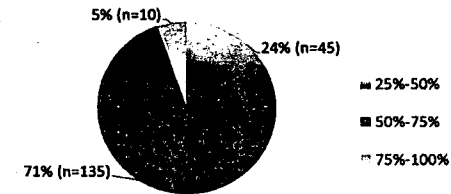
Mean score of stroop inhibitory task errors was 8.88 (± 3.99).

Distribution of physical activity level



Mean score of IPAQ was 1117.65 MET-minutes/week (± 454.18).

Total Quality of life



Mean total transformed score was 58.66 (± 11.09).

- Both VWM and stroop inhibitory tasks were significantly correlated with PA level ($r=0.291$, $p<0.01$ and $r=-0.265$, $p<0.01$ respectively).
- VWM was significantly correlated with total QOL score ($r=0.175$, $p<0.05$) and environmental ($r=0.263$, $p<0.01$), psychological health ($r=0.151$, $p<0.05$) domains.
- IC was significantly correlated with general ($r=-0.16$, $p<0.05$), environmental ($r=-0.192$, $p<0.05$) and psychological health ($r=-0.142$, $p<0.05$) domains.

Conclusion

- Those who had higher working memory capacity had higher level of physical activities and better total QOL.
- Those who had higher inhibitory control had higher level of physical activities and better general environmental and psychological health in QOL.

Recommendation

- It is important to consider the cognitive functions in long term planning of care of the elderly.

Acknowledgement

- Elderly people who participated to the study
- Financial assistance from USJP Research grant no.

ASP/RE/SCI/2015/36