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## LIFESTYLE AND COGNITIVE FUNCTIONING OF FILIPINO OLDER ADULTS AS BASIS FOR COGNITIVE ENHANCEMENT PROGRAMME

Агнес САНТОС, Денніс РЕЛОДЖО-ГОВЕЛЛ

### СПОСІБ ЖИТТЯ ТА КОГНІТИВНЕ ФУНКЦІОНУВАННЯ ЛІТНІХ ЛЮДЕЙ НА ФІЛІППІНАХ ЯК ОСНОВА ПРОГРАМИ ПІДВИЩЕННЯ КОГНІТИВНИХ ЗДІБНОСТЕЙ

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In the Philippines, families are not just the couple and the children; it includes grandparents who are usually consulted in relation to major decisions. Many of the older adults still have their cognitive functioning intact, especially those whose lifestyles are still active (Villareal et al., 2006). Thus, despite the decline in many aspects of older adults' memory, many of their decision-making skills are preserved. However, older adults can perform better when decision making is not constrained by time pressures, and when the decision to be made is meaningful for them. One example is when their newly-married children are still in need of guidance, which is a very intimidating life event among Filipinos, who put so much value on close family ties.

Lifestyle activities such as educational, work, and health (e.g., physical exercise) are found to be the common important influences on the cognitive functioning of older adults (Newson & Kemps, 2005). This is particularly evident within Makati City, Philippines where the lifestyle of older adults is supported by the local government. They have sports and socialisation activities. Many

do their aerobic exercise at Makati Park and Garden in West Rembo, Makati City. They also have a singing chorale, in which the singing talents of the older adults are recognised. Moreover, many of the retired principals from their public schools are given a chance to teach as part-time at their university. Thus, their cognitive functioning is still very much utilised and active.

On the other hand, in Mindanao, thousands of older people perform social and political activities like discussing how they can help push the Mindanao peace process forward (Unson, 2015). These social and political activities have also shown some bearing on the cognitive functioning of older people in the Philippines. Their creativity, critical thinking, and decision-making skills were being used as they all contributed to the brainstorming, for the peaceful solution in their region. Although many aspects of semantic memory are reasonably well-preserved in later adulthood, but a common memory problem for older people is they cannot quite retrieve familiar information (Marks et al., 2007).

Given this situation, the Philippine government recognises the need to intensify programmes

relating to the cognitive wellness and well-being of Filipino older adults (Pilao et al., 2017). Thus, the government gives additional benefits in the Expanded Senior Citizens Acts 2010. It includes 20% discount on medicines, dental fees, fares, comprehensive healthcare, services in restaurants, hotels, educational benefits, death assistance, and other forms of assistance from the government. In return, this can make older adults feel more secured, both physically and psychologically.

The goal of strengthening the potentials of older adults would only be possible if the cognitive functioning is maintained. The results of this study and the evaluation of the cognitive status and lifestyle activities of older adults can serve as a basis for designing a cognitive enhancement programme to ensure that the older adults remain productive. The study also recommends comprehensive healthcare for older adults, and full improvement of their well-being. In Makati City, for instance, older adults regularly gather in one place to share their singing talent, together with some invited celebrities who are pay by their local government. It has been observed that not all older adults experience decline in cognitive functioning; those who exercise at least once a week, have education, are non-smokers, and socially active, are more likely to maintain their cognitive skills (Seeman et al., 2001). However, the majority of previous studies have focused on factors that put people at a greater risk of losing their cognitive skills over time and much less is known about other factors that can contribute maintain their skills. In 2004, the Philippines' population, aged 60 years old above totalled 5.7 million. This is equivalent to about 6.9% of the total Filipino population (Philippine Country Report, 2007).

### **Healthy lifestyle, physical activities, and cognitive function**

It has been shown that helping older adults to remain active can help them feel more alert in relation to cognitive functioning (Hertzog et al., 2008). There are a range of that can contribute to the promotion of mental health and well-being of older adults such as solving puzzles and craft making. Another activity that can stimulate the mind is engaging in meaningful conversations.

Older adults are likely to limit their social interactions, however some people may ask for their advice and opinions. Physical activities can enhance cognitive skills; engaging in games such as *mah-jong* or chess can serve as a form of mental exercise. Other mental exercises are engaging in reality orientation activities and reading newspapers. These are all effective sensory stimulations to develop the adaptability of older people. Physical fitness activities such as *tai chi* and other forms of exercise can also help. Social activities, on the other hand, can include spending time with friends and families; they can also engage in volunteering. Spirituality also plays an important role, and can unite themes from both research and theory concerning the experience of the self and the experience of spirituality in dementia (Dalby, 2012).

Another way to enhance cognitive function is to have daily good habits. Physical exercise improves the memory; social group interactions help to ensure the mental sharpness of older adults. Also, musical activities strengthen the communication between the brain areas, and improve cognitive function. Reading and writing also play a role, not just for the older adults but for other age groups as well (Relojo et al., 2016). Meditation and stress reduction may slow down the progression of age-related mental or cognitive disorders. Yoga or other similar activities can reduce stress (Brems, 2015). Further, Maslow asserted that self-actualised older people have healthy emotional and social lifestyle activities that can help them tolerate the weaknesses of others and not be threatened by anyone else's strength. They can live simple lives; they need not be pretentious nor afraid, or ashamed to express their feelings.

Other studies reveal that many older adults community programmes offer them exercise programmes like a short walk outside of at the mall, every day, to promote cognitive development. Other brain-friendly activities are playing video games which improve fine motor development such as chess, solitaire, and other single-player games for stimulating the brain; and how creating a memory book, or a family legacy, or scrapbooking for mental stimulation and for developing fine motor skills. A new hobby like storytelling, photography, and art work are also good for mental stimulation (Williams & Taylor, 2004). Active in-

volvement of older adults in the community can promote health and well-being. It develops the new skills during ageing, and is considered to be fun too. The common activities are sports and leisure activities such as walking, swimming, and other exercises, as well as fishing, gardening, arts, and drama groups. There are lifestyle activities like those relating to physical, emotional, spiritual, intellectual, occupational, and social activities that promote wellness during the ageing process. On the other hand, previous studies in relation to the enhancement of cognitive functions among older adults show that reading, spending time with family and friends, attending church services are all beneficial activities (Levasseur et al., 2010). Meditation, deep reflection, and learning the meaning of the songs stimulate the long-term memory (Hebert et al., 2005). There are also observations that show that Filipinos may prefer to be with their family or relatives, and close friends from the church and organisations; they are not used to being alone. Their children are expected to provide for financial support; they are also expected to teach grandchildren that they should respect and ask for blessings, when greeting or kissing the hands of older adults. Older Filipino adults expect to share their remaining lives with their children and grandchildren who care for them.

### Physical activities

It is worthwhile to have a healthy and active lifestyle for older adults. They should spend some time in physical activities like walking, aerobics, playing tennis, and others. Physical activities can improve the mental health and well-being of older adults (Stathi et al., 2002). Moreover, one study shows that cognition maintenance of older adults is connected to outdoor activities such as gardening (Wang & MacMillan, 2013). Activities such as this help the individual to reduce stress and improve their cognitive functioning.

Physical activity has been shown to be positively associated with cognitive health, but the mechanisms underlying the benefits of physical activity on cognitive health are unclear. The present study simultaneously examined two hypotheses using structural equation modelling (SEM). The depression-reduction hypothesis states that depression

suppresses cognitive ability and that physical activity alleviates dysphoric mood and thereby improves cognitive ability. The social-stimulation hypothesis posits that social contact, which is often facilitated by socially laden physical activities, improves cognitive functioning by stimulating the nervous system. Sedentary behaviour in the absence of physical activity is expected to exert an inverse relationship on cognitive health through each of these hypotheses (Vance et al., 2005).

### Cognitive activities

In inactive older adults with cognitive complaints, 12 weeks of physical plus mental activity was associated with significant improvements in global cognitive function with no evidence of difference between intervention and active control groups. These findings may reflect practice effects or may suggest that the amount of activity is more important than the type in this subject population (Barnes et al., 2013).

Converging lines of research indicate that complex mental activity is associated with reduced dementia risk. Thus, intense interest exists in whether different forms of cognitive exercise can help protect against cognitive decline and dementia. However, there is considerable confusion in terminology that is hindering progress in the field. We therefore introduce a concrete definition of cognitive training (CT) and make this the focus of our article. Clinical research that has evaluated CT in normal aging, mild cognitive impairment, and dementia is then critically reviewed. Despite many methodological shortcomings, the overall findings indicate that multidomain CT has the potential to improve cognitive function in healthy older adults and slow decline in affected individuals. Finally, practical issues, including the strengths and weaknesses of commercial products, are explored, and recommendations for further research and clinical implementation are made (Gates & Valenzuela, 2010).

Transfer and maintenance of intervention effects are most commonly reported when training is adaptive, with at least ten intervention sessions and a long-term follow-up. Memory and subjective cognitive performance might be improved by training in group versus individual settings (Kelly et al., 2014).

## Spiritual activities

Agli and colleagues (2015) highlight the benefits of spirituality and religion on health outcomes. Three articles showed that in participants who used their spirituality or religion more, through their faith, their practices and in maintaining social interactions, their cognitive disorders tended to reduce or stabilise. In the other eight articles, use of spirituality or faith in daily life enabled people to develop coping strategies to help accept their disease, maintain their relationships, maintain hope, and find meaning in their lives, thereby improving their quality of life.

Engaging adults with Alzheimer's disease in activities can prevent disease related agitation. Finding meaningful and enjoyable activities proves to be a difficult task due to severe damage to explicit memory and executive functioning. Fortunately, many spiritual and religious activities rely on more resilient cognitive features such as procedural memory and limbic system aspects of attachment and motivation. Such spiritual activities, if properly selected, can be used to engage adults with dementia. This approach, called Procedural and Emotional Religious Activity Therapy, can be used by various religious traditions and extended to multiple therapeutic venues (Vance et al., 2005).

Based on the particular mental health needs of older adults, this article formulates a theoretical approach integrating spirituality and cognitive behavioural therapy (CBT) for counseling older adults. CBT is easily applicable and highly appropriate for use with the older adult cohort. Its efficacy is well documented, specifically for disorders commonly experienced by older adults. However, as presenting problems of older adults frequently include spiritual and existential concerns, the incorporation of spirituality and meaning-making with CBT is ideal for serving this cohort. This article presents a theoretical approach to spiritually integrated CBT by formulating a modified style of assessment, formulation, beginning therapy, cognitive restructuring, behaviour modification, and termination (Snodgrass, 2009)

## DISCUSSION

The concept of cognitive reserve (CR) suggests that innate intelligence or aspects of life experience like educational or occupational attainments may

supply reserve, in the form of a set of skills or repertoires that allows some people to cope with progressing Alzheimer's disease (AD) pathology better than others. There is epidemiological evidence that lifestyle characterized by engagement in leisure activities of intellectual and social nature is associated with slower cognitive decline in healthy elderly and may reduce the risk of incident dementia. It is also imperative that their levels of loneliness be addressed (Pilao et al., 2016). There is also evidence from functional imaging studies that subjects engaging in such leisure activities can clinically tolerate more AD pathology. It is possible that aspects of life experience like engagement in leisure activities may result in functionally more efficient cognitive networks and therefore provide a CR that delays the onset of clinical manifestations of dementia (Scarmeas & Stern, 2003).

Cognitive reserve theory seeks to explain the observed mismatch between the degree of brain pathology and clinical manifestations. Early – life education, midlife social and occupational activities and later – life cognitive and social interactions are associated with a more favourable cognitive trajectory in older people. Previous studies of Parkinson's disease (PD) have suggested a possible role for the effects of cognitive reserve, but further research into different proxies for cognitive reserve and longitudinal studies is required. This study examined the effects of cognitive lifestyle on cross – sectional and longitudinal measures of cognition and dementia severity in people with PD (Hindle et al., 2016).

## CONCLUSION

This work examines the existing knowledge about the role of stimulating activities for the older Filipino adults. The core aim of this work is to influence future policies and to put emphasis on the kind of interventions that should be provided for older adults in order to promote their mental health and well-being.

In light of the findings from this study, the authors underscore the importance of helping the elderly promote their own mental health and well-being through a range of activities that are designed to keep them active.

Future research should endeavour to investigate cross-cultural findings and implication within this area.

**RESULTS**

**Table 1**

*The Relationship of Lifestyle of Older Adults to their Cognitive Functioning*

<b>Domains</b>	<b>r</b>	<b>p</b>
<i>Physical activities</i>		
Verbal comprehension	.216*	.01
Perceptual organisation	.216*	.01
Working memory	.035	.68
Processing speed	.078	.36
<i>Mental activities</i>		
Verbal comprehension	.141	.09
Perceptual organisation	.000	.99
Working memory	-.003	.96
Processing speed	-.176*	.03
<i>Emotional activities</i>		
Verbal comprehension	.044	.60
Perceptual organisation	-.012	.88
Working memory	.095	.26
Processing speed	-.047	.58
<i>Social activities</i>		
Verbal comprehension	-.023	.790
Perceptual organisation	-.072	.411
Working memory	-.098	.262
Processing speed	-.249*	.004
<i>Spiritual activities</i>		
Verbal comprehension	-.075	.38
Perceptual organisation	-.035	.68
Working memory	.023	.78
Processing speed	-.027	.74

\* $p < 0.05$

Table 2

*Comparison of the Cognitive Function of Older Adults by Age*

Age group	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i> *
<i>Verbal comprehension</i>				
60–69	90.20	13.17	0.118	0.98
70–79	90.03	14.53		
80–89	89.33	12.54		
<i>Perceptual organisation</i>				
60–69	91.71	12.76	3.993	0.021
70–79	90.70	13.73		
80–89	104.44	19.28		
<i>Working memory</i>				
60–69	92.67	15.02	.535	0.59
70–79	89.47	15.29		
80–89	92.78	14.98		
<i>Processing speed</i>				
60–69	91.17	14.95	8.021	0.001
70–79	84.90	16.76		
80–89	108.89	21.40		

\**p* < 0.05**REFERENCES**

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Table 3

Comparison of the Cognitive Function of Older Adults by Gender

Gender	M	SD	t	p*
<i>Verbal comprehension</i>				
Male	91.45	11.61	0.36	0.36
Female	89.33	14.11		
<i>Perceptual organisation</i>				
Male	93.55	11.75	0.39	0.39
Female	91.43	14.73		
<i>Working memory</i>				
Male	90.82	13.92	0.50	0.50
Female	92.60	15.54		
<i>Processing speed</i>				
Male	90.47	12.95	0.88	0.88
Female	90.92	18.39		

\* $p < 0.05$

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Table 4

*Comparison of the Cognitive Function of Older Adults by Civil Status*

Civil status	<i>M</i>	<i>F</i>	<i>p</i> *
<i>Verbal comprehension</i>			
Single			
Married	96.85	0.54	0.70
Widow			
Separated			
<i>Perceptual organisation</i>			
Single			
Married	385.39	2.09	0.08
Widow			
Separated			
<i>Working memory</i>			
Single			
Married	723.08	3.45	0.01
Widow			
Separated			
<i>Processing speed</i>			
Single			
Married	717.73	2.71	0.03
Widow			
Separated			

\**p* < 0.05

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## АНОТАЦІЯ

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**Спосіб життя та когнітивне функціонування літніх людей на Філіппінах як основа програми підвищення когнітивних здібностей.**

Основною метою цього дослідження є вивчення фізичних, психічних, емоційних, соціальних та духовних складових способу життя літніх людей задля розробки програми їхнього когнітивного вдосконалення. Загалом в експерименті участь взяли 142 літні людини, у яких було нормальне когнітивне функціонування. Результати показали, що перцептивна організація когнітивної сфери має значне відношення до віку ( $F = 3,99$ ,  $p < 0,021$ ). Встановлено також, що швидкість інформаційної обробки має значний зв'язок із віком когнітивного розвитку ( $F = 8,02$ ,  $p < 0,021$ ),  $p < 0,001$ . Стаття літніх людей не має істотного відношення

до усного розуміння, організації сприйняття, робочої пам'яті та швидкості обробки зовнішніх стимулів. На відміну від цього робоча пам'ять пов'язана із їх громадянським статусом ( $F = 3,45$ ,  $p < 0,021$ ),  $p < 0,01$ . Також було доведено, що швидкість зазначеної обробки має значне відношення до соціального стану ( $F = 2,71$ ,  $p < 0,021$ ),  $p < 0,03$ . Нарешті, освітні досягнення не мають суттєвого зв'язку з вербальним розумінням, організацією сприйняття, робочою пам'яттю та швидкістю опрацювання даних.

**Ключові слова:** когнітивне вдосконалення; когнітивне функціонування; програма втручання; спосіб життя; літні люди.

## ANNOTATION

*Agnes Santos, Dennis Relajo-Howell.*

**Lifestyle and cognitive functioning of Filipino older adults as basis for cognitive enhancement programme.**

The primary focus of this study is to examine the physical, mental, emotional, social, and spiritual components of the lifestyle of older adults, with the fundamental aim of designing a cognitive enhancement programme. A total of 142 older adults have taken part, all of whom have normal cognitive functioning. Results revealed that perceptual organisation has significant relationship to developmental age ( $F = 3.99$ ,  $p < 0.021$ ). Processing speed has also been found to have a significant link to developmental age ( $F = 8.02$ ,  $p < 0.021$ ),  $p < 0.001$ . The gender of older adults has no significant relationship to verbal comprehension, perceptual organisation, working memory, and processing speed. In contrast, working memory is linked to civil status ( $F = 3.45$ ,  $p < 0.021$ ),  $p < 0.01$ . Processing speed was also found to have a significant relationship to civil status ( $F = 2.71$ ,  $p < 0.021$ ),  $p < 0.03$ . Finally, educational attainment has no significant link to verbal comprehension, perceptual organisation, working memory, and processing speed.

**Key words:** cognitive enhancement; cognitive functioning; intervention programme; lifestyle; older adults.

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