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MESSAGE FROM THE NEWSLETTER COMMITTEE

Welcome to this electronic issue of HKPGA newsletters. We have invited Mr. CHIU Yik Ho to share his research award-winning project on the effectiveness of studying horse-races for people with mild cognitive impairment and have reprinted the study led by Professor Dilip Jeste on the adverse health effects on loneliness that is important under the social restrictions of COVID-19. Please do not miss the photos of the virtual HKPGA Annual Scientific Symposium cum AGM 2020. Lastly, you can make your submission via info@hkpga.org and visit www.hkpga.org for archives of the HKPGA newsletters.

The Effectiveness of Horse-racing Group (an Activity with Variable-ratio Reinforcement) for Long Term Improvement in Executive Function of People with Mild Cognitive Impairment

Mr. Chiu Yik Ho
Occupational Therapist, Prince of Wales Hospital

1. Jockeys

The best jockeys can solve the difficulties quickly such as the wide draw or blockage during a race. Find out the names of the high ranked jockeys in a race card to identify the horses with higher win %.

Below are the rankings of the jockeys in 3 different racecourses, while their names are printed on the next page

Rank	Shatin Turf	Shatin Dirt	Happy Valley
1			
2			
3			
4			

Jockeys' names

Chawick		Mo		Sousa	
Ho		Moreira		Tentan	
Collan		Poon		Whyte	
Niokerk		Punton		Wong	
Leung		Schofield		Yeung	

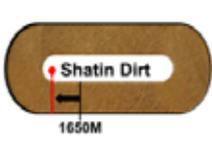
Background:

Many people with Mild Cognitive Impairment (MCI) have significant decline in Executive Function (EF) (Chiu et al., 2018). Although computer-based cognitive programs have been rapidly developed for EF training, the effect is still controversial. Some research revealed that computer-based training may not show significant improvement on executive function (Shao, et al., 2015) and furthermore, the benefit will decline after the intervention (Zelinski et al., 2011). Existing studies elicit the need for a novel cognitive training for EF with long-lasting effect.

To encourage long-term effectiveness of EF training, it is essential to enhance the intrinsic motivation by adding explicit reinforcement. Among different types of reinforcement, the variable-ratio schedule is the most effective one to elicit and maintain the response rate (Cirrcarelli & White, 2018). In horse-racing based EF training program, every race could be the winning one (reinforcement), so the participants tend to keep practicing (non-reinforced responses) to gain the reinforcement. Also, horse-racing is an easily accessible community-based activity that is broadcasted on a major free-to-air television network every week in Hong Kong. Regarding the above advantages, horse-racing may be a potential cognitive training program that could supplement traditional EF training programs for long-term home-based training.

2. Starting gate

4 distances below **Small starting gate = high win %**

Shatin		Happy Valley
		

Because there is a tight turn shortly after the start, requiring the horses with wide draws to run a longer distance to get closer to the rail

outside draw = high win %

Less damage to the track by the grandstand



Other distances **Middle draw = high win %**

Less blockage on the straight road and easier to get closer to the rail

Exercise

Draw a line, starting on the start line, to show how the horse would run to make a higher chance to win

Tips:

- Easy to get closer to the rail in a tight turn
- Less blockage in the straight
- Run on the track with better condition



Methods

Horse-racing group: Patients referred for cognitive rehabilitation were invited to join the horse-racing group if they scored 18-25 out of 30 in Hong Kong version of Montreal Cognitive Assessment, had no previous horse-gambling experience and without disinhibited or financial risk-taking behavior. The horse-racing programme has been carried out in the Occupational Therapy (OT) department of Prince of Wales Hospital since 2016. The horse-racing programme is a 6-week programme which includes a 1-hour hospital-based training class and a 2-hour home-based training per week. Usually, the group is held on every Wednesday (horse-racing day in Hong Kong) for better home-based compliance because the race cards had already been uploaded to the official website of the Hong Kong Jockey Club for the therapists to print them out as homework. In each lesson, the participants are required to select a favourite horse on the race card by calculating the average ranking mentally (the main target is the working memory), identifying the top jockeys and the best starting gate (planning and logical reasoning by considering the starting point, the route to turn and the spin). When the participants are studying the race card, a video of horses walking on paddock will be shown to the participants at the same time for analysing the horse conditions such as sweating, body shape and the condition of ears which reflects the emotion of a horse (mental set shifting). The participants also learn to access the website of the Hong Kong Jockey Club and download the race cards for home practice. They are encouraged to practice at least 4 races per week at home (Notes for the group are showed across this article). To raise the motivation, the racing results are recorded in each lesson as a competition between the participants. A medal will be given to the participant who obtains the highest ratio of win as a reinforcement.

3. Horses Condition

X Heavy Sweating



A. Body shape
Firm flat stomach, firm muscle tone with solid lines, strong neck

B. Ears
Reflecting the mood of a horse

- X Ears flattened against the neck means unhappy
- X Ears pricked forward and other held back means in doubt
- ✓ Ears tilted forward means happy

4. Last Six Runs

Find out the horse with the smallest average of last six runs by mental calculation

- E.g. the sum of last six runs in horse no.1 : $13 + 4 + 2 + 1 = 20$
- Divided by the no. of runs, i.e. $20 \div 4 = 5$
- It means horse no.1 usually finished in 5th place

Horse No.	Last Six Runs	(Sum)	(Ave)
1	13/ 4/ 2/ 1	20	5
2	2/ 5/ 4/ 6/ 5/ 13	35	5.8
3	12/ 9/ 13/ 12/ 6/ 4	56	9.3
4	9/ 8/ 9/ 7/ 9/ 2	44	7.3
5	10/ 10/ 6/ 13/ 10	49	8.2
6	5/ 1/ 4/ 6/ 4/ 7	27	4.5

Race Card

Horse No.	Jockey (Good: ✓)	Gate (Good: ✓)	Condition (Good: ✓)	Last Six Runs SUM	A/E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					



There are several strategies to prevent risk of gambling: (1) only the participants with no horse gambling experience are recruited; (2) each participant is required to sign a non-wager agreement form; (3) specific races are selected by the therapists. The ratio of win to loss is kept as 1:2 in each lesson; (4) debriefing will be conducted immediately after every losing race to explain the consequences of gambling; (5) the steps in wager and gambling odds will not be mentioned in the group.

Results

Forty-eight OT progress notes were retrieved retrospectively for analysis (22 for horse-racing group and 26 for games of “Brain Gym”: a computer-based intervention program). The result of horse-racing group and computer training are showed in Table 1 and Table 2 respectively. No participant reported indulgence in horse-gambling after the intervention and 9 participants reported continuous home-based practice in 8-week follow-up.

Table 1. Comparison of outcome measures in horse-racing group at posttest and 8-week follow-up			
✓ = with significant improvement			
	Posttest-Baseline	8-week follow up - Baseline	8-week follow up - Posttest
Mental Set shifting	✓	✓	
Working memory		✓	✓
Planning and problem solving	✓	✓	
Overall EF	✓	✓	

Table 2. Comparison of outcome measures in computer training group at posttest and 8-week follow-up			
✓ = with significant improvement			
	Posttest-Baseline	8-week follow up - Baseline	8-week follow up - Posttest
Mental Set shifting			
Working memory	✓	✓	✓
Planning and problem solving			
Overall EF		✓	

Conclusion:

The horse-racing group may be a potential intervention for long-term EF improvement in people with MCI. On the other hand, although only two EF assessments showed improvement, computer-based training program has an important role among different cognitive interventions as it is proved to be useful and cost-effective in improving general cognition of people with dementia or MCI.

References

Chiu, H., Chan, P., Kao, C., Chu, H., Chang, P., Hsiao, S. S., . . . Chou, K. (2018). Effectiveness of executive function training on mental set shifting, working memory and inhibition in healthy older adults: A double-blind randomized controlled trials. *Journal of Advanced Nursing*, 74(5), 1099-1113. doi:10.1111/jan.13519

Ciccarelli, S. K., & White, J. N. (2018). *Psychology*. Harlow, England; London; New York; Amsterdam; Munich: Pearson.

Shao, Y., Mang, J., Li, P., Wang, J., Deng, T., & Xu, Z. (2015). Computer-Based Cognitive Programs for Improvement of Memory, Processing Speed and Executive Function during Age-Related Cognitive Decline: A Meta-Analysis. *Plos One*, 10(6). doi:10.1371/journal.pone.0130831

Zelinski, E. M., Spina, L. M., Yaffe, K., Ruff, R., Kennison, R. F., Mahncke, H. W., & Smith, G. E. (2011). Improvement in Memory with Plasticity-Based Adaptive Cognitive Training: Results of the 3-Month Follow-Up. *Journal of the American Geriatrics Society*, 59(2), 258-265. doi:10.1111/j.1532-5415.2010.03277.x



More than Convenience in Alzheimer's Disease

Orodispersible Tablet
Aricept Evers
Giving Alzheimer's patients time



Dissolves in the
mouth in 20 seconds¹



Can be dissolved in water,
fruit juice and watery foods²



Contains patented
carrageenan for masking the
bitter taste of medicine^{2,3}



Reduces caregivers'
burden⁴



Available in
orodispersible tablets of
5 mg and 10 mg

Aricept Evers Drug Information

Composition: Each tablet contains 5 or 10mg of donepezil hydrochloride equivalent to 4.56mg or 9.12mg of donepezil free base. **Therapeutic Indication:** Symptomatic treatment of mild, moderate and severe Alzheimer's dementia. **Dosage and administration:** Adults/elderly: 5mg once daily which may be increased to 10mg once daily after at least on a daily dose of 5mg for 4-6 weeks. Aricept Evers should be taken orally, in the evening, just prior to retiring. No dose adjustment necessary for patients with renal impairment. Dose escalation should be performed for mild to moderate hepatic impairment. Allow Aricept Evers tablet to dissolve on the tongue and follows with water. **Children:** Not recommended. **Contraindications:** Aricept Evers is contraindicated in patients with a known hypersensitivity to donepezil hydrochloride, piperidine derivatives, or to any excipients used in the formulation. **Pregnancy and lactation:** Use only if benefit outweighs risk. Excretion into breast milk is unknown. **Precautions:** Possible interaction with succinylcholine (suxamethonium type) muscle relaxants, anticholinergic medicines. Theoretical effects upon pre-existing cardiac disease, asthma, or obstructive pulmonary disease. Also in patients at increased risk of peptic ulcers. Cholinomimetics may cause urinary retention (not observed in clinical trials), convulsions (may be disease related). **Adverse events:** Most commonly diarrhea, muscle cramps, fatigue, nausea, vomiting, and insomnia. Minor increase in serum concentration of muscle creatine kinase but no notable laboratory abnormalities reported. **Storage:** To be stored under 25°C.

References

1. Data on file. 2. Aricept Evers[®] prescribing information. 3. Harada T, Uchida T, Yoshida M, et al. A new method for evaluating the bitterness of medicines in development using a taste sensor and a disintegration testing apparatus. Chem Pharm Bull 2010;58:1009-1014. 4. Sevilla C, Jiménez-Caballero PE and Alfonso V. Orally disintegrating donepezil: are the main caregivers of patients with Alzheimer's disease more satisfied with this formulation of donepezil than with the traditional one? Rev Neurol 2009;49:451-457.

Adverse Health Effects of Loneliness

Dilip Jeste, Colin Depp, Barton Palmer, et al.

(this reprint is approved by the International Psychogeriatric Association (IPA) and is available at the official website of IPA, <https://www.ipa-online.org/news-and-issues/new-paper-adverse-health-effects-of-loneliness>)

Serious Loneliness Spans the Adult Lifespan but there is a Silver Lining

Feeling alone linked to psychological and physical ills, but wisdom may be a protective factor

In recent years, public health officials have warned about a rising epidemic of loneliness, with rates of loneliness reportedly doubling over the past 50 years. In a new study, researchers at University of California San Diego School of Medicine put a specific, concerning and surprising face to the issue. Publishing in the December 18 online issue of *International Psychogeriatrics*, a team led by Dilip Jeste, MD, Distinguished Professor of Psychiatry and Neurosciences and director of the UC San Diego Center for Healthy Aging, found that moderate to severe loneliness persisted across the adult lifespan, but was particularly acute during three age periods: late-20s, mid-50s and late-80s.

Loneliness was also more prevalent than expected, according to the scientists. Three-fourths of study participants reported moderate to high levels of loneliness, using a well-established assessment scale. The figure represents a substantial increase from previously reported prevalence estimates in the U.S. general population, which have ranged from 17 to 57 percent.

“This is noteworthy because the participants in this study were not considered to be at high risk for moderate to severe loneliness. They didn’t have major physical disorders. Nor did they suffer from significant mental illnesses such as depression or schizophrenia, in which you might expect loneliness to be problematic,” said Jeste. “Though there were clear demographic limitations to the group, these participants were, generally speaking, regular people.”

Specifically, the study was conducted in 340 San Diego County residents, between the ages of 27 and 101, who had participated in one of three earlier studies of aging and mental



health. Persons with serious physical or psychological ailments, including those diagnosed with dementia, as well as persons living in nursing homes or requiring substantial living assistance were excluded.

The researchers assessed participants using multiple measures, including the well-established, 20-point UCLA Loneliness Scale, Version 3; a four-item, self-reported measure of social isolation developed by the U.S. Department of Health and Human Services, and the San Diego Wisdom Scale, created by Jeste and colleagues to assess an individual's level of wisdom, based on the conceptualization of wisdom as a trait with a neurobiological as well as psychosocial basis, and thus modifiable.

Excluding evidence of mild loneliness, which Jeste said is common and expected to occasionally appear throughout adult life, the researchers found that loneliness severity and age "had a complex relationship," peaking at specific periods in both men and women. There were no sex differences in loneliness prevalence, severity, or age relationships. Concerns about the individual and societal effects of loneliness have been very much in the news, most notably related to its health implications. Former U.S. Surgeon General Vivek Murphy has said a prevailing pall of loneliness in the United States poses a greater, more intractable public health crisis than tobacco use or obesity. Earlier this year, the United Kingdom established a Ministry of Loneliness to address the psychosocial and health needs of lonely people.

First author Ellen Lee, MD, a research fellow in geriatric mental health in the UC San Diego School of Medicine Department of Psychiatry, characterized the study's findings as both bad news and good news. On the negative side, she said, moderate to severe loneliness appears to be highly prevalent throughout adult life. "And loneliness seems to be associated with everything bad. It's linked to poor mental health, substance abuse, cognitive impairment, and worse physical health, including malnutrition, hypertension and disrupted sleep."

On the plus side, Lee noted that the UC San Diego group found a strong inverse association between wisdom and loneliness. People who were deemed wiser were less lonely. "That may be due to the fact that behaviors which define wisdom, such as empathy, compassion, emotional regulation, self-reflection, effectively counter or prevent serious loneliness."

Clearly, said Jeste, more research needs to be done. These are early days for the emerging sciences of wisdom and loneliness. This study, according to its authors, is the first known to assess loneliness using multiple measures with a well-characterized sample and broad



age range and which examined both negative and positive psychological traits and states.

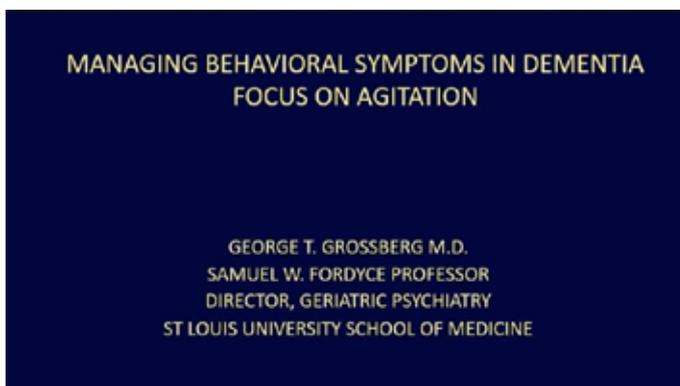
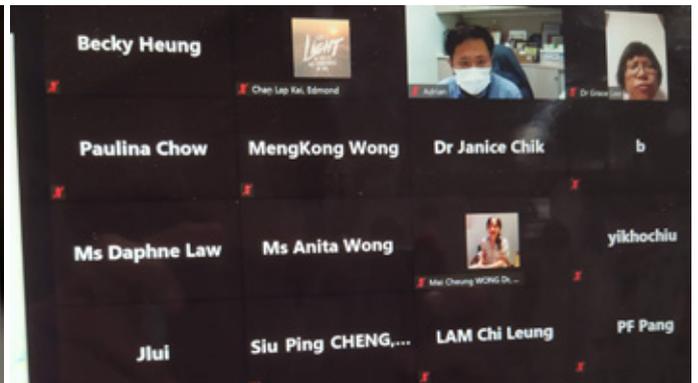
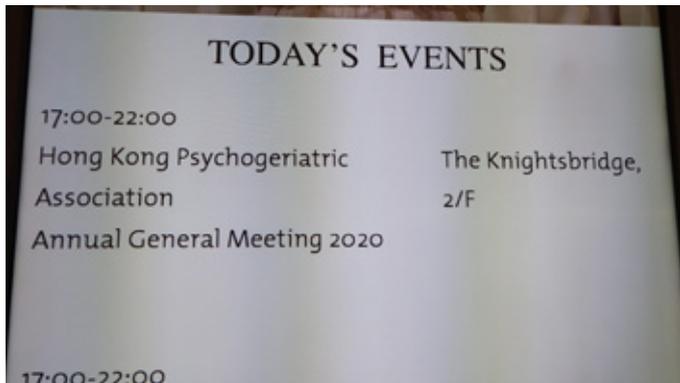
“There are more gaps in knowledge than there are answers at the moment,” said Jeste. “But these findings suggest we need to think about loneliness differently. It’s not about social isolation. A person can be alone and not feel lonely, while a person can be in a crowd and feel alone. We need to find solutions and interventions that help connect people that help them to become wiser. A wiser society would be a happier, more connected, and less lonely society.”

Co-authors include: Colin Depp, Barton Palmer, Danielle Glorioso, Rebecca Daly, Jinyuan Liu and Xin Tu from UC San Diego; Ho-Cheol Kim, Peri Tarr, and Yasunori Yamada from IBM Research Division.

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HKPGA AGM cum Annual Scientific Symposium 2020 at the Langham Hotel





COUNCIL NEWS

The HKPGA Annual Scientific Symposium cum AGM 2020 (which was also an online webinar) was held at the Langham Hotel in Tsimshatsui on 17 November 2020 (Saturday). Professor George GROSSBERG from the Saint Louis University School of Medicine (USA) gave his keynote speech on the “Recent Advances in the Management of Behavioral and Psychological Symptoms of Dementia”. In the COVID-19 Elderly Care Forum, Mr. CHUI Wan Yin, Wilson, Mr. CHOW Wai Kei, Ray and Ms. YUEN Man Yan from the Caritas Hong Kong presented “The impact of COVID-19 pandemic on the elderly and their carers in Hong Kong”. Ms. HO Sim Ki, Jennis from the Hong Kong Seng Kung Hui Welfare Council Limited shared “Hugs and touches: the new normal in residential services under COVID-19”. The HKPGA Council would like to acknowledge the generous support for our AGM cum ASS 2020 from the following pharmaceutical companies:



The Council has announced at the AGM 2020 that the winner of our research award is Mr. CHIU Yik Ho. The summary of his research project is printed on this issue of HKPGA newsletters.

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