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EDUCATION

Driving in the Twilight Years: When to Pull the Brakes?

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Many Singaporeans depend on motor vehicles for transport. However, road safety cannot be taken for granted. In 2012, there were 9,274 fatalities and injuries from road traffic accidents (RTAs). Motorcars were involved in many accidents. Fortunately, the overall fatal and injury accident rate on our roads is falling. Nevertheless, over the same period, motorists who were aged 60 and above formed a growing pool of drivers killed or hurt in RTAs.¹

Fitness to drive criteria in many countries is based on a medical examination. In Singapore, a medical examination is required every 3 years from age 65.

Current medical literature however suggests that general health assessment is a poor predictor of driving safety and of automobile accidents.²⁻³

Part of the reason for the inadequacy of current screening criteria may be that road skills can be well preserved in the healthy elderly population or that they exhibit compensatory behavior to make up for their age-related decline in cognitive ability.⁴⁻⁵

As a result we are looking for better and more reliable means of evaluating driving fitness in the elderly. It has been suggested that rather than focusing on the presence of any single or multiple conditions, the overall health status of the driver and the effect of that status on driving performance should be considered.

For these reasons, a move toward performance-based assessments of driving ability would be fairer.

This project is a collaboration between Tan Tock Seng Hospital (TTSH) Occupational Therapy Department, NHG Eye Institute @ TTSH and Nanyang Technological University (NTU).

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OUR STUDY

We aim to develop a driving simulator that can be used as a tool to assess driver proficiency and reduce the risk of injury to elderly drivers. It can also be used as a tool to facilitate re-training and rehabilitation of drivers who are recovering from an illness.

It will try to replicate realistic Singapore driving scenarios and be designed to register and grade driving errors during common driving manoeuvres and responses to simulated hazards as a means of assessment of driver proficiency.

The driving simulator concept is especially useful as it allows drivers to practice and be assessed in a safe

environment, while encountering specific driving scenarios or hazards that would be difficult or dangerous to re-create in a real on-road situation.

In addition, driving simulation removes the technical difficulty, liability, insurance cost and risks of on-road assessment.

Moving forward, the driving simulator can also be used to build up research capability to study the effect of other medical conditions on driving.

This collaboration will focus primarily on the elderly driving population. We hope that eventually it will be a step toward better road safety for all road users.

The above research study is funded by the NTU-NHG Ageing Research Grant (ARG). ARG is a joint grant launched by NTU and NHG to fund collaborative projects in ageing research. To find out more on the grant, please visit www.research.nhg.com.sg (Grants & Programmes).

REFERENCES

1. Traffic Police Annual 2012, Singapore Police Force. http://www.spf.gov.sg/prints/tp_annual/2012/index_tp_12.htm
2. Woolnough A, Salim D, Marshall SC, Weegar K, Porter MM, Rapoport MJ, et al. Determining the validity of the AMA guide: A historical cohort analysis of the Assessment of Driving Related Skills and crash rate among older drivers. *Accid Anal Prev* 2013.
3. Siren A, Meng A. Cognitive screening of older drivers does not produce safety benefits. *Accid Anal Prev* 2012;45:634-8.
4. Carr D, Jackson TW, Madden DJ, Cohen HJ. The effect of age on driving skills. *J Am Geriatr Soc* 1992;40(6):567-73.
5. Andrews EC, Westerman SJ. Age differences in simulated driving performance: compensatory processes. *Accid Anal Prev* 2012;45:660-8.



Mind Matters: A Study of Mental Health Literacy



The Institute of Mental Health is currently undertaking a study on mental health literacy entitled “Mind Matters: A Study of Mental Health Literacy”.

The Mind Matters Study is a two-year study funded by the Ministry of Health, Health Services Research Competitive Research Grant. It is led by Principal Investigator, Professor Chong Siow Ann, Vice Chairman Medical Board (Research) and Co-Investigator, Ms Louisa Picco, Assistant Manager, Research Division.

Mental health literacy has been defined as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention” (Jorm et al, 1997). Previous research has shown that people generally have a poor understanding of mental illness; they are unable to correctly identify mental illnesses, they do not understand the possible causes and they often have misconceptions about the effectiveness of treatment for mental illnesses.

This national study aims to assess recognition and beliefs pertaining to causes, treatment options and outcomes for select mental disorders in Singapore, whilst also examining and comparing the extent of stigma relating to these mental disorders. The study will also examine mental health literacy and its socio-demographic correlates, and determine whether characteristics such as age, gender, education or an experience with a mental illness affect mental health literacy.

The Mind Matters Study is focusing on five specific mental disorders: major depressive disorder, schizophrenia, obsessive compulsive disorder, alcohol abuse and dementia. These disorders were specifically chosen given their prevalence, large treatment gap, early age of onset, the marginal effect on quality of life and/or the role of early intervention on the disorder.

As part of the survey, respondents will be read a vignette or short story

describing someone with one of these five disorders and will be asked a series of questions such as “What do you think the person in the vignette is suffering from?” and “Who do you think the person in the vignette should seek help from?”

The survey was launched in February 2014 and will involve about 3,000 randomly selected Singapore residents aged between 18 and 65 years. The interview lasts approximately one hour and the survey is expected to be completed by February 2015.

This is the first community-based, national study relating to mental health literacy in Singapore and will highlight the specific mental disorders that need to be prioritised and targeted for future mental health promotion, whilst also identifying gaps in mental health literacy.

For more information, please visit www.imh.com.sg/research.

RESEARCHERS FEATURE

International Team Sheds New Light on Biology Underlying Schizophrenia



(Left to right) Adj. A/Prof Sim Kang, Prof Chong Siow Ann, Adj. Asst Prof Mythily Subramaniam and Dr Jimmy Lee



Prof Liu Jianjun

Prof Chong Siow Ann and his research team, together with A*STAR’s Genome of Institute of Singapore, has helped to identify over 100 locations in the human genome associated with the risk of developing schizophrenia in the genome-wide association study (GWAS), published in Nature, a highly cited science journal. This team was part of the 5-year Translational Clinical Research in Neuroscience (funded by the National Research Foundation), of which Prof Chong is the Principal Investigator.

These latest findings came out of a collaboration with the Schizophrenia Working Group of the Psychiatric Genomics Consortium which has investigators around the world. The findings are significant in that they

shed light on the biological mechanisms and pathways that underlie schizophrenia, which could lead to new approaches in diagnosing and treating the disorder.

Contributors of the article are

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NHG's Research Journey HSOR – 10 Years and Beyond

In line with Singapore's 50th birthday, we have lined up a series of articles to bring you on a journey through research at the various NHG institutions and departments over the years. In this first instalment, we feature the Health Services & Outcomes Research (HSOR) unit of NHG who will coincidentally be celebrating their 10th Anniversary in 2015!



Having fun with clay at our retreat (2012)

2015 is a very exciting year, not just for Singapore turning 50 this year, but also for the Health Services & Outcomes Research (HSOR) unit at NHG, for we celebrate our 10th anniversary this year!

As we reflect on our progress in the last 10 years, we have much to be thankful for. What first began as a study trip to the United States in July 2004 by the NHG senior management to acquire knowledge on successful integrated healthcare delivery systems, eventually provided the visionary management with the foresight that health services research could play a significant role in improving health outcomes and quality of care in NHG. So in September 2005, HSOR was set up with a mission to improve the quality of healthcare by providing the best available evidence for decision making and knowledge translation, and to build capacity and advance knowledge in health services research in Singapore. Over the years, we have grown in numbers and capabilities, from a team of five to the current strength of 18 dedicated

researchers, coming together to share and develop our expertise from diverse backgrounds in medicine, epidemiology, public health, physiotherapy, operations research, medical informatics, biostatistics, economics, and social sciences.

Having worked closely with clinical heads and managers on the ground to formulate relevant questions and translate the evidence into decisions and practice, our partnership with stakeholders also flourished, and expanded beyond NHG. Together with collaborators from the Ministry of Health, Agency for Integrated Care, Duke-NUS Graduate Medical School Singapore, Ng Teng Fong General Hospital, Khoo Teck Puat Hospital, Alexandra Hospital, National University Hospital, Dover Park Hospice, HCA Hospice Care, and even with the University of Southampton in the United Kingdom and the Joanna Briggs Institute in Australia, the spectrum of our work grew from micro-level issues

such as focusing on outcomes of disease management programmes to more system-level issues like continuity of care programmes in the community, where the evidence and solutions provided had a wider impact.

We are grateful for the opportunities to share our work through presentations at local and overseas conferences, and for the recognition of our work through the numerous awards received. The spread of our projects further enabled us to publish 77 articles in both local and overseas peer-reviewed journals, and the many research grants we received were only possible because of the collaboration with stakeholders within, across, and outside the cluster.

As HSOR commemorates a decade's worth of experience and achievements, we are beholden to the NHG management for their invaluable confidence, our partners for their unstinting support, and our colleagues, past and present, for their knowledge and contributions to the synergy and success of the team. We look forward to continuing our journey together to adding years of healthy life to the people of Singapore through excellence in health services research!



The team at the Adding Years of Healthy Life conference (2010)

National Healthcare Group (NHG) Clinician Investigator (CI) Scheme

The Clinician Investigator (CI) Scheme is a research manpower development programme administered by the NHG Research & Development Office (RDO). The CI Scheme is designed for established clinicians who wish to incorporate research into their clinical expertise with the aim of improving healthcare. The CI Scheme aims to promote a culture of collaborative research among established clinicians to generate better research outcomes, groom researchers in the department/ institution and develop them as international Key Opinion Leaders (KOLs) in their respective research areas.

There were a total of four awardees in FY2014 and they are **Dr Lim Choon Guan** (Consultant and Deputy Chief, Child & Adolescent Psychiatry, Institute of Mental Health), **Dr Howe Hwee Siew** (Senior Consultant, Rheumatology, Allergy and Immunology Department, Tan Tock Seng Hospital), **Clinical Professor Goh Chee Leok** (Senior Consultant, Medical, National Skin Centre) and **Dr Steven Thng** (Senior Consultant, National Skin Centre).

In this issue we are featuring two of the awardees, Clinical Professor Goh Chee Leok and Dr Steven Thng.

INTERVIEW WITH PROF GOH ON HIS RECEIVING OF THE AWARD



1) What has motivated you to apply for the CI Scheme?

I needed some protected time to do my research and publish my scientific papers.

2) What are your thoughts on being awarded the scheme?

I hope it will enable me to secure some protected time to do my research and publish my scientific papers.

3) With the receiving of the award, what are some of your future research plans?

Carry out the new research projects in quantifying dermatology symptoms, study epidemiology of some skin disorders in Singapore and complete my outstanding research and write up my research projects.

MY THOUGHTS ON THE CLINICIAN INVESTIGATOR (CI) SCHEME



I remember vividly that as a medical student, I was very clear that research is not my cup of tea. I dreaded the thought of navigating through the complexities of grant applications,

answering the endless “queries” from ethics board and receiving constant “rejection letters” from journals on my research articles...in fact, I swore that I will avoid research at all costs and focus my time on patient care and teaching.

However, twenty years down the line, I am doing exactly the thing that I swore that I won't do. My change of heart came when I was an associate consultant doing my training in pigmentary disorders. My mentor then, Prof Westerhof, impressed upon me that to really make a difference in patient care, a good dermatologist cannot be just delivering the same care all the time in the same way; instead, one has to strive to look for new and better ways of treatment so as to make our patient's life better.

Upon coming back from my Health Manpower Development Programme (HMDP) training, I started dabbling in research in melanocyte culture and

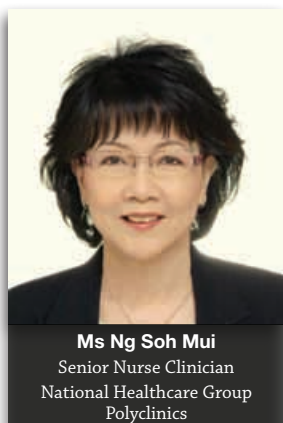
cellular transplant and since then, I found myself diving headlong into research and spending more and more time trying to discover new diagnostic and treatment options for my patients. The turning point came in 2014 when I found myself really struggling to juggle my time between patient care, teaching efforts, research commitments and administrative roles. Just as I was seriously considering giving up one of these 4 pillars of academic medicine, I came to hear about the CI Scheme and was encouraged to apply for it so that I can set aside some time to really focus on research. I was really glad I did and I am grateful to NHG for considering my application and awarding me into the CI Scheme.

With this scheme, I now have 2 sessions a week set aside to focus on my research enterprise to address issues that directly affect patient care. My key focus areas will be on pigmentary disorders, advanced drug delivery systems for dermatological use as well as skin imaging systems. To better guide my research work, I have crafted out a 5 year research masterplan on these areas so that all my research work will be aligned and focused.

I am just starting out on my journey as a clinician-scientist and I am certainly grateful to NHG for supporting me in awarding me into this scheme. I am certainly very excited with my research plans ahead and I am optimistic that my research work in the next few years will bear fruit and hopefully, find new ways to add years of healthy life to our patients.



Research on Self-Management of Diabetes



Ms Ng Soh Mui
Senior Nurse Clinician
National Healthcare Group
Polyclinics

Senior Nurse Clinician (SNC) Ng Soh Mui joined Jurong Polyclinic as a care manager (CM) in 2000. A CM is a registered nurse who is trained to manage and guide chronic disease patients on self-management, lifestyle changes and treatment adherence. SNC Ng then went on to obtain a Diploma in Primary Care Diabetes Management from University of Huddersfield (UK). SNC Ng is also certified by the Association of Diabetes Educators Singapore as a Certified Diabetes Educator. With strong leadership, support and guidance from the Head of Jurong Polyclinic, Nursing Services and the Clinical Research Unit, SNC Ng started to get motivated in embarking on primary care research in NHG Polyclinics.

Evidence has shown that diabetes treatment with self-management education contribute to positive patient outcomes, and patients without self-management skills will end up with poorly controlled diabetes which puts them at high risks for diabetes-related morbidities and mortalities. SNC Ng's latest research project is a quasi-experimental trial conducted in Jurong Polyclinic since September 2013. The aim of the study is to investigate the effectiveness of group diabetes education (GE) compared with individual education (IE) in terms of patients' self-care activities, psychosocial and metabolic outcomes for newly-diagnosed type 2 diabetes patients. 76 participants were recruited into the study, 38 participants in the GE group and 38 participants in the IE group.

It has been observed from the study that HbA1c significantly decreased in both groups (mean = 1.35% for GE; mean = 1.02% for IE) at the 3-month follow-up. Patients receiving GE have significant better illness perception at the 3-month follow-up, compared to baseline ($P=0.005$). GE patients are also doing more exercise due to the interactive platform of GE and peer support in goal-setting, thereby resulting in a significant decrease in weight (mean = 1.25kg, 95% CI = 0.33 to 2.17). This study is continued for 1 year to evaluate the long-term effects of GE and IE.

diabetes treatment with self-management education contribute to positive patient outcomes, and patients without self-management skills will end up with poorly controlled diabetes which puts them at high risks for diabetes-related morbidities and mortalities.

SNC Ng finds that primary care research has provided opportunity for polyclinic staff to grow, collaborate and develop interest in research. As care providers, SNC Ng and her colleagues hope to utilise scientific methods to evaluate their



everyday practice and discover the most effective interventions for patients. SNC Ng has always been enthusiastic in exploring evidence-based interventions to improve patients' health outcomes so as to prevent the onset of diabetes complications. In her next research project, SNC Ng will explore interventions to help patients overcome the barriers to insulin therapy and evaluate aids to assist patients in making informed decisions to start insulin therapy.





CONGRATULATIONS!

Dr Rinkoo Dalan

Senior Consultant, Dept of Endocrinology,
Tan Tock Seng Hospital

on clinching the

**National Medical Research Council (NMRC)
Transition Award (TA)**

To find out more about Dr Dalan and this award, [click here](#)

Qualité

(Issue 18, Jan 2015) – Education to facilitate high standards of research conduct.

DSRB Update: NHG's Revised Conflict of Interest Policy

With effect from 1st January 2015, NHG's conflict of interest policy has been revised to require all study team members to declare financial conflicts of interest to the DSRB on an annual basis. Read more to learn about how this revised policy will impact your research.

Non-Compliance Report: Subject Screening and Recruitment

Find out more about study review non-compliances related to subject screening and recruitment, and how to avoid these common pitfalls in your research study.

Responsible Conduct of Research (RCR): Conflicts of Interest and Commitment

Through a case study, discover how legitimate research interests can create competing commitments and lead to conflicts of interest.

Read your full issue of *Qualité* (Issue 18, Jan 2015) at:

<https://www.research.nhg.com.sg/wps/wcm/connect/romp/nhgromp/resources/qualite>

Tan Tock Seng Hospital (TTSH) CRIO Research Training Courses

Date	Time	Training Programme	Venue
14-Apr-15	09:00 - 17:00	Things you need to know about investigator-initiated studies (Clinical Trials)	TTSH Seminar Room 1
25-May-15	09:00 - 12:30	Advanced biostatistics & SPSS	TTSH Seminar Room 2 (Lecture)
	13:30 - 17:30		E-learning lab (Practical)
23-Jun-15	09:00 - 12:30	Understanding study designs	TTSH Seminar Room 2
To be Advised	09:00 - 12:30	Searching e-literature*	To be Advised
	13:30 - 17:30	Systematic reviews / Meta analysis*	

*Course co-organised by Singapore Clinical Research Institute (SCRI) and TTSH

For more information or registration details, please kindly contact the course coordinator, Ms Jennifer Teo (jennifer_hp_teo@ttsh.com.sg)

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