



THE BEST OF BOTH WORLDS

Huang Youyi and Wang Xiaohui both graduated from the Biomedical Sciences and Traditional Chinese Medicine (TCM) double degree programme at Nanyang Technological University (NTU). The duo, who are currently in their second year at Duke-NUS Graduate Medical School, hope that by acquiring knowledge of both Western and Chinese Medicine, they are able to give their patients the best treatment. They share their journeys with *SMA News*.

SMA: What inspired you to pursue your first degree in Biomedical Sciences and TCM and subsequently, an MD degree with Duke-NUS Graduate Medical School?

Huang Youyi – HYY: Before college, my interest was inclined towards biomedical research. Around the same time, NTU set up the inaugural Biomedical Sciences and TCM double degree programme in collaboration with Beijing University of Chinese Medicine (BUCM). I was attracted by the prospect of using modern scientific research to tap into the wealth of ancient wisdom in TCM. It was, and still is a very enticing idea.

The programme required me to study at BUCM in Beijing, China for two years, where we completed our clinical TCM education, and I did rotations in the various departments at one of the university's teaching hospitals. It was during this period of maximal patient care exposure did I realise my liking for clinical work and clinical research. The Duke-NUS MD programme provided an extremely irresistible opportunity for me to marry research and clinical practice and I thought, why not also add Western Medicine to my arsenal of skills aimed at helping patients? Hence, it was a natural choice to continue my education in clinical practice and research at Duke-NUS.

Wang Xiaohui – WXH: After my A-Levels, I knew I was interested in the sciences, especially Biology. I was attracted to the double degree programme because it exposes one to modern Biomedical Sciences research, and at the same time, to the principles of TCM. Having received effective TCM treatments previously, I was intrigued by TCM teachings and was interested to learn more.

During my first three years in NTU, I was given many research opportunities, and under the guidance of NTU's excellent faculty, I became more interested in research and was considering making it a career after graduation. During my last two clinical years, which I spent in Beijing, I rotated through the different departments and had the opportunity to manage patients. It was then that I discovered my passion for clinical work as I enjoyed working with patients. I was also exposed to the practice of modern Medicine and the integration of complementary Chinese Medicine at the bedside. This was what inspired me to apply to Duke-NUS. Their MD programme trains us not only in Medicine, but also how to leverage biomedical sciences research to enhance medical practice. This allows me to pursue both my interests in research and clinical practice.

SMA: What were some challenges you faced while pursuing these degrees?

HYY and WXH: One of the greatest challenges definitely had to be learning TCM from ancient Chinese texts. Fortunately, we had the best faculty from BUCM flying over to teach us. As we applied the knowledge of our ancestors to clinical practice, the principles of TCM started to become clearer and more instinctive to us. This is what makes the practice of TCM interesting and exciting, and surprisingly, this is exactly what compels us to want to study the ancient texts well, for in them lies the essence of TCM.

Also, now that we are in a postgraduate programme, which also means being more mature compared to our undergraduate days, we have to find an appropriate balance between work, family, friends and life. Along with most of our classmates, we are also frequently involved in the various extracurricular, volunteer and charity programmes organised by Duke-NUS or the student body. Therefore, it is not hard to see why good time management is absolutely critical for us. However, looking back on this intense first year, we feel that it was definitely a highly enriching and productive year, as we have accrued vast amounts of knowledge and ample practice opportunities for clinical skills. We are definitely looking forward to learning more in our second year, which just started.

SMA: How do Western and Chinese Medicine help you respectively in your understanding of the human physiology and the approach needed for diagnosis, treatment and prevention of diseases, in order to better patient outcomes?

HYY and WXH: Both disciplines share the same ultimate goal of providing healthcare to patients but their approaches differ.

Western Medicine adopts a more molecular approach with an emphasis, especially in recent decades, on evidence-based practice. From pathophysiology to treatment of diseases, the emphasis is to elucidate the molecular mechanisms as best as possible, through subjecting the findings to rigorous reviews and meta-analyses.

The principles of TCM, however, revolve around a macroscopic view of the interactions between environment, body and disease. There is more emphasis on observation, inference and pattern recognition, so it is based primarily on empirical evidence. The time-tested principles that form the tenets of pathophysiology, diagnosis and treatment in TCM were crystallised through the cumulative experience and knowledge of physicians in Asia, especially China, Japan and Korea, over the past five millennia.

As students of both Western and Chinese Medicine, it is perhaps easy to suggest that we can be proponents of an East-meets-West approach. Such an approach is not impossible as we do believe that Western and Chinese Medicine are not mutually exclusive. Rooted in evidence-based research and intrigued by the wealth of untapped knowledge in TCM, we would like to believe it would be optimum to tap on the strengths of both worlds through rigorous clinical trials, and subjected to close monitoring and standardisation. Such a complementary approach is still in its earliest infancy in Singapore's healthcare scene and definitely still has a long way to go. Hopefully we can play a part in bridging and maximising the best of both worlds to further improve patient outcomes.

SMA: In your opinion, what will be the relationship between Western and Chinese Medicine in Singapore in the future, given the increased collaboration between researchers from both fields?

HYY and WXH: We believe that there may be an increasing trend of interaction between Western and Chinese Medicine, not only in terms of research, but also clinical practice. With the increasing focus of primary care, step-down care and palliative care in Singapore, as well as a large local Chinese population of which a substantial proportion is receptive to TCM, we would think that there will be increasing opportunities for complementary interaction between the two fields of Medicine in these aspects of healthcare.

TCM has the ability to play a complementary role to mainstream Medicine, especially for chronic conditions like diabetes; hypertension and hyperlipidaemia; in palliative and geriatric care, for example, in post-stroke recovery and as adjuvants to relieve the side effects of chemotherapy. Another aspect that we believe TCM can complement mainstream Medicine is in preventive healthcare. A substantial part of TCM revolves around advocating staying healthy and avoiding disease, for example, through lifestyle changes in diet, exercise, as well as cognitive and behavioural adjustments. We think TCM can also provide a rich resource and basis for research and reference in helping further develop preventive healthcare, which will probably see more emphasis in the future.

In terms of research, one does not need to look far to see such collaborations already happening in Singapore now. For example, A/Prof Scott Summers, who is a faculty in the Duke-NUS Programme in Cardiovascular and Metabolic Disorders, has recently collaborated with National University of Singapore; Nanyang Polytechnic; Eu Yan Sang International; and Agency for Science, Technology and Research, to evaluate TCM used in the treatment of diabetes. There is also a strong research push towards the collaboration of biomedical sciences and TCM in NTU's School of Biological Sciences. Various faculty members are embarking on biomedical research in TCM, and one of the more prominent researchers is Prof James P Tam, Director of NTU's Drug Discovery Centre, who delves into several projects involving structural biology and biochemistry. One of his projects which epitomises an East-meets-West approach, revolves around plant biologics in medicinal herbs collected in Singapore.

SMA: What are your plans after you graduate from Duke-NUS?

HYY and WXH: We believe that in the future, complementary and alternative Medicine (CAM), particularly TCM, will definitely play a role in the local healthcare scene in view of Singapore's large Chinese population and China's rising influence.



We will graduate as qualified Western healthcare providers, but believe that while providing care through Western treatment regimes, it is to our benefit and responsibility to understand any CAM that patients are undergoing. We hope to be well equipped and positioned to advise patients on the best possible management plans for their conditions. We also hope to be the bridge between Western and Chinese Medicine, both in terms of clinical work and research – tapping the best of both worlds to further patient care.

Perhaps another contribution we can make is to help colleagues of each field understand more about the other. Even now, whenever the opportunity arises, we will try our best to help inquisitive classmates answer their questions and clear any misconception of TCM. For instance, a common misconception is that TCM medications contain corticosteroids which cause Cushing's syndrome. We explain that such TCM medications are more often than not adulterated, smuggled back-alley products that have not been approved for sale in Singapore by the Health Sciences Authority. Approved and authentic TCM medications and herbs should not contain corticosteroids.

On the other hand, we also often discuss with our TCM colleagues about conditions that would likely benefit more from a Western-centred treatment and also help them with their queries on the more intricate details of Western Medicine.

SMA: Who are some of your role models and what have you learnt from them?

HYY: Wow, that's a hard question because I have several role models!

Prof Ng Han Seong, from the Department of Gastroenterology & Hepatology at Singapore General Hospital (SGH), is definitely someone that comes to mind. When I was an acupuncturist in the SGH Pain Management Centre, I had

a couple of opportunities to sit in for some meetings and talks that were delivered by Prof Ng, and was fortunate enough to hear his teachings and viewpoints. Prof Ng is deeply passionate about TCM (because his grandfather was a TCM physician), and is a proponent for research into TCM to discover new evidence and solutions to improve Medicine. He inspires me to always keep an open and inquisitive mind.

I have a lot of respect and admiration for the Practice Course instructors of the Duke-NUS MD programme too, and they are certainly my role models. Among them, Prof Lim Shih Hui stands out in my mind for several reasons. I remember my first history-taking interview with a standardised patient during Practice Course. As the instructor evaluating my performance, he was very strict and stern, reprimanding me for my mistakes then. Subsequently, as I got to know him better, I realised that although strict, he is a caring and kind mentor. I am always mesmerised by his clinical skills and experience, the flair with which he percusses the chest and palpates the abdomen, and the ease with which he elicits tendon jerks and neuropathological signs. He is also a registered acupuncturist and would occasionally talk to me about TCM and acupuncture, inspiring me to follow his example of possessing skill sets in both Western and Chinese Medicine.

WXH: One person who came immediately to mind was Dr Linn Yeh Ching, from the Department of Haematology at SGH. She was my co-supervisor for my final year project in NTU, where I did basic research in cellular immunotherapy. Dr Linn gave me advice whenever I ran into difficulties and was able to educate me on the possible clinical applications of my project. Dr Linn, who has a keen interest in TCM, was also involved in many clinical studies involving the use of TCM in patients with chronic haematological disease.

One of her recent papers, published last year, titled "Berberine-induced haemolysis revisited: safety of *Rhizoma coptidis* and *Cortex phellodendri* in chronic haematological diseases", was instrumental in changing the use of these two herbs in Singapore. *Rhizoma coptidis* and *Cortex phellodendri* were banned in Singapore for 35 years due to concerns that these two berberine-containing herbs caused kernicterus in neonates with G6PD deficiency. The ban on berberine was lifted on 1 January this year, and this was encouraging as these two herbs are commonly used herbs in TCM practice, for which there are no good substitutes. Dr Linn showed me how she could balance research with her clinical work and how TCM can benefit patients by playing its role in complementing modern Medicine. She is someone whom I definitely want to emulate. **SMA**

