PROMOTING QUALITY USE OF MEDICINE IN CHRONIC RESPIRATORY DISEASES IN VIETNAM: THE ROLE OF PHARMACISTS

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B.Pharm; MSc.

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN PHARMACY

SCHOOL OF BIOMEDICAL SCIENCES AND PHARMACY
UNIVERSITY OF NEWCASTLE

January 2019

STATEMENT OF ORIGINALITY

I hereby certify that the work embodied in the thesis is my own work, conducted under normal supervision. The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

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Tu Son Nguyen

I confirm that Tu Son Nguyen contributed designing studies, collecting and analysing data, writing and editing manuscripts to the paper/publication entitled:

1. Pharmacist's training to improve inhaler technique of patients with COPD in Vietnam. (Published in Int J. of Chronic Obstructive Pulmonary Disease, 2018. 13: p. 1863-1872)

2. Impact of pharmaceutical care in the improvement of medication adherence and quality of life for COPD patients in Vietnam (Published in Respiratory Medicine, 2019. 153: p.31-37)

3. Effectiveness of a short training program for community pharmacists to improve knowledge and practice of asthma counselling - A simulated patient study. (Published in Respiratory Medicine, 2018. 144: p.50-60)

Prof. Shu Chuen Li

ACKNOWLEDGMENTS

It is time for me think about my PhD journey after 4 years of learning, travelling, conducting researches. For me, studying in Australia and undertaking this PhD have been an enjoyable and unforgettable experience, and it would not have been possible to do without the support and guidance that I received from many people.

Foremost, I would like to thank my principal supervisor Prof. Shu Chuen Li for his continued support and guidance. Prof Li always gives me a number of insights during my study; he also helps me to think outside the box in many situations. Without his dedication and patient guidance, this PhD thesis would not have been achievable. Particularly, more than a supervisor, he and his wife – Mrs. Hayley Li – treated me as a family member, and gave me a lot of friendly advice; their inclusion in many informal occasions always made me feel valued and respected. I am very lucky to be his student. I also would like to thank my co-supervisor, A/Professor Susan Hua, for her valuable advice and great encouragement throughout the years. She was always the first person to provide many insightful inputs to my draft manuscripts.

I would also like to thank A/Professor Nguyen Thi Lien Huong, A/Professor Pham Thi Thuy Van and my colleagues in Clinical Pharmacy Department, HUP for all their constant support and encouragement when I was conducting research in Vietnam. I would like to acknowledge Professor Ngo Quy Chau, Mr Nguyen Van Khai for their cooperation and support during the data collection process at the Bach Mai hospital and community pharmacies. I am grateful to the pharmacists in Bach Mai hospital, and pharmacy students who assisted me to complete the work at the hospital and the community pharmacies in Hanoi.

I am grateful to the daily life support from my friends in Newcastle including Mr Cuong, Dr Tuyen, Dr. Loan, Mr Chinh, Dr. Tru, Dr. Luan Luan, Mrs Hong. I am especially grateful to Dr. Irene Munro for her friendship and especially for her great assistance in preparing ethic documents and. I also would like to thank staffs at the School of Biomedical Sciences and Pharmacy, University of Newcastle for their invaluable support during my study.

I would like to acknowledge the financial support provided by o Vietnamese Ministry of Education and Training and the University of Newcastle.

Finally, I would like to thank my family: my mom, my wife and my two children (Mit and Dua) for always being by my side throughout my PhD journey, for their daily support, encouragement and love. You are my motivation and reason for keeping moving forward.

PUBLICATIONS INCLUDED AS PART OF THE THESIS

Chapter 3. Tu Son Nguyen, Thi Lien Huong Nguyen, Thi Thuy Van Pham, Susan Hua, Quy Chau Ngo, Shu Chuen Li, *Pharmacist's training to improve inhaler technique of patients with COPD in Vietnam.* International Journal of Chronic Obstructive Pulmonary Disease, 2018. 13: p. 1863-1872. (doi: 10.2147/COPD.S163826)

Chapter 4. Tu Son Nguyen, Thi Lien Huong Nguyen, Thi Thuy Van Pham, Susan Hua, Quy Chau Ngo, Shu Chuen Li, *Impact of pharmaceutical care in the improvement of medication adherence and quality of life for COPD patients in Vietnam,* (Respiratory Medicine 2019;153:31-37. (doi: 10.1016/j.rmed.2019.05.006)

Chapter 5. Tu Son Nguyen, Thi Lien Huong Nguyen, Thi Thuy Van Pham, Thi Bich Thao Cao, Van Khai Nguyen, Susan Hua, Shu Chuen Li, *Effectiveness of a short training program for community pharmacists to improve knowledge and practice of asthma counselling - A simulated patient study*. Respiratory Medicine, 2018. 144: p. 50-60. (doi: 10.1016/j.rmed.2018.10.003.)

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

ADR	Adverse drug reactions
COPD	Chronic Obstructive Pulmonary Disease
DALY	Disability Adjusted Life Years
DPI	Dry powder inhalers
DUE	Drug use evaluation
EQ-5D-5L	EuroQol - 5 Dimensions – 5 Levels
FIP	International Pharmaceutical Federation
GDP	Gross Domestic Product
GOLD	Global Initiative for Chronic Obstructive Lung Disease
GPP	Good Pharmacy Practice
HRQL	Health Related Quality of Life
MDI	Metered dose inhalers
MMAS	Morisky Medication Adherence Scale
MoH	Ministry of Health
NCD	Non-communicable Diseases
QALY	Quality Adjusted Life Year
QoL	Quality of Life
TDM	Therapeutic drug monitoring
VAS	Visual Analog Scale
WHO	World Health Organization

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ABSTRACT

Nowadays, the role of pharmacists has evolved to become health care providers of pharmaceutical care services that incorporates patient-orientated and product-orientated services. They not only work together with other health care providers, but also with patients in order to achieve positive outcomes for their therapeutic management. However, in Vietnam and other developing countries, both community and hospital pharmacists are still substantially under-utilised for patient care compared against the pharmaceutical care model of practice**.** How to improve the contribution of pharmacists in health care is still a tough question that need to be answered, especially in Vietnam with a rising number of better-qualified pharmacists as well as a shortage in other health care human resources, such as doctors and nurses.

At the same time, non-communicable diseases are becoming a major public health issue putting a heavy burden on society and the economy of Vietnam. Of these diseases, prevention and treatment of COPD and asthma is contributing to several problems including increasing number of patients, high rate of non-adherence to therapy in patients, and a low proportion of patients using inhalers correctly. Therefore, in exploring how to increase the role of hospital pharmacists in Vietnam, our study has chosen inhaler technique and medication adherence to demonstrate the role of hospital pharmacists' interventions in the management of COPD and asthma. Our findings showed that hospital pharmacists can teach COPD patients to improve their inhaler technique and counsel patients to improve adherence in a very efficient manner. The pharmacist-led programs also showed positive impact on patients' quality of life.

How to improve pharmacists' contribution to management of asthma in the community setting is another issue that needs to be addressed. Literature showed that a continuing education program is a key strategy for the community pharmacy sector to assist in improving the management of asthma in developing countries like Vietnam. Our present study developed and

evaluated an educational program for community pharmacists and evaluated its effectiveness with the simulated patient method. The study demonstrated that our training program was highly effective in equipping community pharmacists with the necessary knowledge and practical skills to counsel asthmatic patients about the management of their condition and medications. It is suggested that such education programs should be promptly implemented and made compulsory for community pharmacists in Vietnam to improve the quality of counselling for patients with asthma and other non-communicable diseases.

Overall, our studies demonstrated that with proper encouragement and simple continued professional education, both hospital and community pharmacists can expand their role to contribute to better management of asthma and COPD in Vietnam. This model may produce the same positive outcomes in other chronic diseases and should be considered by the relevant authorities in Vietnam and other developing countries.