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Providing color to the pharmacy technician

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Chapter 1

General introduction

Preface

Setting: Bachelor thesis defence at the educational program of the Pharmacy Technician (University of Applied Sciences; Saxion)

Examiner:

Congratulations, you have successfully defended your thesis. You entered our educational program three years ago as a pharmacy assistant and you have made it. I am more than happy to hand you your diploma as pharmacy technician. Just out of curiosity, one last question: Tomorrow you'll get back with your team in the pharmacy, celebrating with cake and all. But, will you work as a pharmacy technician?

Just graduated and very relieved pharmacy technician:

Thanks, I'm so happy... It was such hard work! But ehm... yeah... I'm definitely bringing cakes! But officially working as a pharmacy technician? The pharmacist is considering it, but ehm... The jury is still out on that one...

Examiner:

Oh... Right... I see...

While working at the Dutch educational program of pharmacy technicians, I frequently witnessed this conversation. It always struck me as quite unusual. Two professionals who invest time and money in acquiring knowledge, but seem to have no clear idea on how to use the newly obtained knowledge and skills in pharmacy practice. On the one hand, there is a pharmacist paying the tuition fee for the three-year educational program in which one of their employees is participating. On the other hand, there is a pharmacy assistant investing time and effort to gain more knowledge and skills in pharmaceutical patient care. But after graduation, there is often some sort of hiatus. The pharmacist contemplates and muses on how to employ this new professional, and the pharmacy technician hangs back and awaits a decision. And nothing changes...

This thesis studies the addition of the profession of the pharmacy technician to the pharmacy workforce. It aims to shed light on the current roles and responsibilities that pharmacy technicians have taken on, and on how the integration of this new profession in existing pharmacy practice is

taking place.

The purpose of this introductory chapter is to paint a general picture of the reasons why the profession of the pharmacy technician was brought into existence. The reader is provided with some statistics relating to the pharmacy team and their day-to-day contribution to pharmaceutical care in the Netherlands. This chapter also addresses the educational set up and goals of the training program of the Dutch pharmacy technicians at the level of higher education (university of applied sciences; EQF level 6). Furthermore, this introduction aims to educate the reader on the current debate in the Dutch pharmacy field regarding this new profession, emphasizing the relevance of the research in this thesis. This general introduction ends with stating the main research questions and the provision of an overview of the studies in this thesis.

1. On the origin of the pharmacy technician

Just as medical specialists, dentists and general practitioners are supported by newly developed health care staff, with qualifications gained through higher education (e.g. nurse practitioners, dental hygienists, and physician associates), so are pharmacists supported by pharmacy technicians.^{1,2}

In countries with advanced economies, the role of pharmacy technician was introduced based on a need for support staff, trained and educated in such a way that pharmacists could delegate tasks and responsibilities to them. As a result, those pharmacists are able to practice at the top of their expanding licence.^{3,4} In low- and middle-income countries, there is also an increase in the number of pharmacy technicians but with a slightly different rationale behind the development of this role. These countries suffer from a shortage of pharmacists and a subsequent influx into the pharmacy care practice of adjacent healthcare professionals. In order to have pharmaceutical care provided by healthcare professionals who are educated in pharmacy, there is a need to elevate the educational level of pharmacy support staff. In doing so, technicians fill the void created by the shortage of pharmacists.^{5,6}

Since this thesis focusses on pharmacy technicians in the Netherlands, it will now provide the reader with additional insights into the emergence of the pharmacy technician in high income countries. Even though pharmacy as a profession has a longstanding place in society, the identity of pharmacist and the subsequent scope of actions has seen numerous changes. Identity discourses went from 'apothecary', to 'dispenser', to 'merchandiser'.⁷ In recent years, the field of pharmacy has an even greater challenge in

renegotiating its place in modern society. Most of the traditional roles such as compounding and dispensing have changed significantly due to societal transformations (e.g. widespread public availability of drug information, shifting focus to preventative healthcare measures, shared decision making, etc.), leading to new identities of pharmacist as ‘expert medication advisor’ and ‘healthcare provider’.^{7,8} Even though this change in role started around 50 years ago, this transition of the pharmacy practice from product care to patient care is still ongoing.^{7,9} Promoting safe and effective drug therapy nowadays necessitates pharmacists to take on a myriad of new and challenging cognitive pharmaceutical services (clinical medication review, discharge counselling, etc.).¹⁰ It requires them to work in a patient-centred manner and to provide integrated pharmaceutical care in close collaboration with other healthcare professionals.¹¹ As a result, the profession has become more varied, more complex and more time intensive, which is a lot to take on by the individual professional. Adding to the complexity of a profession in transition is the increasingly demanding healthcare setting in which this transition takes place, with strict financial scrutiny by health care insurance policies. Further barriers to change include lack of mandate and legitimacy of pharmacists and readiness to embrace change.¹² The ongoing of this transition period is evidence of how difficult it is to achieve the required changes. Recent research on pharmacist time use and pharmacist burnout adds to the perspective that getting to the idealized and envisioned pharmaceutical care is now starting to take a personal toll on pharmacists.¹³⁻¹⁵ As mentioned previously, one way of facilitating and supporting the pharmacist in this transition is the freeing up of time by delegating tasks and responsibilities to support staff. The resulting need for higher educated support staff therefore gave grounds for the development of the profession of pharmacy technician.

2. The Dutch pharmacy workforce – facts and figures

Dutch pharmacy care is organized into primary (community pharmacies) and secondary (hospital and outpatient pharmacies) care. In the Netherlands, with a population of 17.4 million people, 2000 community pharmacies, 105 hospital pharmacies and 60 outpatient pharmacies are present.^{16,17} On average, a community pharmacy serves 7300 patients, with 1.5 fte of pharmacists and 5.7 fte of pharmacy assistants.^{16,18} 98% of the community pharmacy assistants are female.¹⁸ It is estimated that since the start in 2003 of the educational program for pharmacy technicians in The Netherlands, approximately 700 pharmacy technicians have graduated.¹⁹

Professional roles and responsibilities in pharmaceutical care

In the Netherlands, pharmaceutical patient care entails all activities necessary to achieve optimal drug use by the individual patient, with the main goal to sustain and/or improve quality of life.²⁰ This definition leads to the main roles and responsibilities of a pharmacy team: checking of, counselling on, (preparation of) and dispensing of prescription medication. In this setting, a pharmacist is defined as the pharmaceutical expert. They are considered to be accessible healthcare providers, and are responsible for the delivery of clinically appropriate and tailor-made pharmacotherapy.^{20,21} The pharmacy assistant will, under pharmacist supervision, check and process the dispensing of prescription medication, and advise and counsel patients on medication management.^{22,23}

Education for pharmaceutical care – pharmacist and pharmacy assistant

A pharmacist and a pharmacist assistant are educated on different levels in the Netherlands. Pharmacy assistants follow a three-year training course at the vocational education level, before they are eligible to work at a pharmacy. Focus lies on more general, protocolized patient care, dispensing the right medication in the right dose to the right patient. Pharmacists are educated at university level in a six-year undergraduate curriculum, divided in a Bachelor and Master phase, in line with the European agreements of the Bologna declaration.²⁴ The learning outcomes of the curriculum are based on the Dutch ‘2016 Pharmacist Competency Framework’, emphasizing the pharmacists’ responsibility towards the patient to pursue the best possible outcomes of medication therapy.^{9,21} After graduation, a two-year postgraduate training and registration phase is mandatory for both public and outpatient pharmacists. Hospital pharmacists require four years of postgraduate training.

In the following section on the pharmacy technician, the rationale behind and the educational set up of the program for pharmacy technicians is described.

3. What we know about the Dutch pharmacy technician – starting point and educational program

In international research literature regarding the pharmacy technician, there is a conversation ongoing, albeit in the early stages and somewhat limited to task descriptions.²⁵⁻²⁷ However, contributions from the Dutch

point of view on the profession are lacking.²⁸ Therefore, this part of the general introduction presents the generally known facts on the intentions and goals of the educational program in the Netherlands, and how the envisioned profession was discussed and acknowledged in the field of pharmacy, leading up to the research question of this thesis.

Since 2003, pharmacy assistants in the Netherlands have the possibility of advancing their career in pharmacy practice by participating in the educational program of the pharmacy technician (University of Applied Sciences, EQF level 6, CROHO 39209). The educational program was constructed based on a number of arguments. Firstly, an enhancement of pharmaceutical knowledge and improvement of communication skills were deemed necessary for the pharmacy team, since the emergence in healthcare of 'shared decision making' and a rise in available drug information led to empowered and more articulate patients.^{29,30} Secondly, an added layer within the pharmacy team with better people skills was envisioned to counteract the then emerging threat of commercialization of pharmaceutical care (web-based pharmacies).²⁹ Thirdly, contemporary changes in clinical pharmacy practice, such as the increase in pharmaceutical care activities (e.g. medication reviews, drafting of medication formularies, implementing medication guidelines and clinical rules, patient adherence counselling), also required higher educated support staff.^{29,31} These three societal arguments were complemented by a fourth impulse, one of a more financial nature. In that moment of time, pilot projects (undertaken by health care insurance companies) remunerated pharmacists and their staff for the delivery of the new pharmaceutical care activities, such as medication reviews.²⁹ A pharmacist could decide to start conducting multiple of those activities, since reimbursement and financial rewards were now in order. The resulting increase of its workload would be overcome by including and working together with higher educated support staff in these activities. Thus, the educational program aimed to train pharmacy staff with a focus on pharmaceutical patient care, medication safety, patient communication and psychology, quality assurance and collaboration with other health care disciplines. Pharmacy technicians were conceptualized to deal with the more complex patient and less predictable medication management situations. The aim was that they will be capable of taking on (delegated) responsibilities in medication reviews, play a role in the professional development of the pharmacy team and function as link between the pharmacist and the other members of the pharmacy team.²⁹

The part-time educational program runs for four years and consists of 240 EC. Students are required to work in a pharmacy for a minimum of two days a week (16h), since 28 EC of the yearly 60 EC are dedicated to work-place-based learning. This is an important element of the didactics of the program. Furthermore, it is a competency-based program, with weekly e-learning sessions and monthly face-to-face classes. The learning trajectories of the program are based on medical-pharmaceutical knowledge ((patho)-physiology and medication), the psychosocial elements of patient communication, care management (project management and coaching of the team) and practice-based research skills.²⁹

4. What we don't know

We have insight into the official documents, illustrating the goals and set up of the educational program with regards to this new profession in the field of pharmacy. However, what is not known, or based on anecdotal evidence only, is how graduated pharmacy technicians are received in the field. For example, were they welcomed by the pharmacist and other team members? Were they successful in exercising their newly acquired knowledge, skills and attitudes in their daily practice of public, outpatient and hospital pharmacies? And was there a fit between these daily activities and the competencies they achieved within the program?

Those, and other relevant questions still remained unanswered. Therefore, this thesis will have a practical focus on how the profession of pharmacy technician was received in the field, and the subsequent role development, influenced by daily pharmacy practice.

5. Research questions and outline of this thesis

The field of pharmacy is said to benefit from higher educated mid-level support staff: the pharmacy technician. This profession is designed to improve pharmaceutical patient care, aims at redirecting the workload of pharmacists, and provides the possibility of additional education and career development for pharmacy assistants. However, little is known about the practical outcomes of the addition of the profession of the pharmacy technician to the pharmacy workforce.

Therefore, the central research questions guiding each individual research project in this thesis are:

1. What are the roles and responsibilities pharmacy technicians have taken on, both nationally and internationally?
2. How is the addition of this new profession in existing pharmacy practice construed?

To this end, chapters 2 and 3, both international studies, report on how the pharmacy technician is perceived and positioned within the provision of pharmacy services, regarding content and functionalities. Chapters 3 and 4, document what different stakeholders consider to be valued competencies in order for pharmacy technicians to properly function and how the actual role development of a pharmacy technician is put into effect.

In doing so, this thesis will provide a clearer view of the position and added value of this profession. This knowledge may positively influence the entry to practice and career satisfaction of pharmacy technicians, lead to a reform in the pharmacists' workload, and aid the further evolution and advancement of pharmaceutical patient care.

Outline of the thesis

The involvement of the pharmacy support workforce in worldwide pharmaceutical care varies according to country context. There is no international understanding of the diversification of roles, supporting education, regulation and expected competencies. Therefore, **chapter 2** describes a scoping review, reporting key papers on the relationship between pharmacy technicians, pharmacy support workforce and pharmacists and the increasing interest in utilizing pharmacy support workforce to allow the extension of clinical roles of pharmacists.

In addition to this literature review, and to get a broader picture of training, supervision and regulation, **chapter 3** presents international research into specific country jurisdictions and comparisons between regions. It documents a variety of roles and responsibilities for pharmacy technicians and other pharmacy support workforce cadres globally, with wide differences in supervision requirements, education systems and supportive legislation.

These findings lead to **chapter 4**, which reports on a more detailed understanding of specific practice settings in The Netherlands. A competency framework for pharmacy technicians was developed and validated, based on experiences and opinions of stakeholders from the Dutch pharmaceutical field.

In **chapter 5** the focus is on role development of the pharmacy technician. It set out to explore factors influencing this process by interviewing pharmacy technicians, pharmacists and pharmacy assistants in public, hospital and outpatient pharmacies. Analysis of the interviews yielded five inter-related themes, influencing the development and implementation of the pharmacy technician role.

The final **chapter 6** summarizes the main findings of this doctoral thesis. It discusses the results in light of recent literature on other advanced practice professionals in health care, such as nurse practitioners, dental hygienists and physician associates. The strengths and limitations of this thesis are considered, practical implications based on the findings are suggested and recommendations for future research are provided.

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