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## INTRODUCTION

The pharmacist's responsibility to provide high-quality pharmaceutical care for both human and animal patients is the same. When dispensing medicinal products, pharmacists have a legal obligation to ensure that the medication prescribed, the dose, route of administration and frequency are suitable according to its intended use. Pharmacists are uniquely positioned to assist clients in solving medication issues and to collaborate with veterinary surgeons to provide the best care for their mutual patients.<sup>1</sup>

Traditionally, curricula for pharmacy students, are centred around humans and their disease states. This challenges the pharmacist's knowledge on aspects of veterinary pharmacy such as disease states affecting companion animals, pharmacotherapy options, posology and administration, adverse effects, drug information resources and client counselling.<sup>2</sup>

## METHOD

### Phase 1

The perception of the role of pharmacists specialised in human medicines within the veterinary pharmaceutical sector was evaluated by means of three separate questionnaires.

3 Questionnaires	Design of Questionnaires
<ul style="list-style-type: none"> <li>i. Veterinary Surgeons (VSP-Q)</li> <li>ii. Pharmacists (PHP-Q)</li> <li>iii. Pet Owners (POP-Q)</li> </ul>	<p>VSP-Q, PHP-Q and POP-Q consist of three sections:</p> <ul style="list-style-type: none"> <li>- Section A Demographic data</li> <li>- Section B Challenges of access to medicine</li> <li>- Section C Perception of the role of the pharmacist and pharmacy services</li> </ul> <p>PHP-Q contained an additional section dedicated to pharmacists working in the community to identify current practices</p>

### Phase 2

A training programme for pharmacists in veterinary pharmaceutical sciences was designed

Identification of main areas	Development	Validation
<ul style="list-style-type: none"> <li>• Literature search in pharmacy-education related journals</li> <li>• Published training material in veterinary pharmacy</li> <li>• Data from VSP-Q, PHP-Q and POP-Q</li> </ul>	<p>For each of the main areas:</p> <ul style="list-style-type: none"> <li>• Description of the content</li> <li>• Aims</li> <li>• Learning outcomes                             <ul style="list-style-type: none"> <li>- Knowledge and understanding</li> <li>- Skills</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Two-round Delphi technique</li> <li>• Round I and II: 8 experts</li> </ul>

Figure 1: The perception of pet owners, pharmacists and veterinary surgeons on the ability of pharmacists to safely dispense and provide advice for medication use in animals

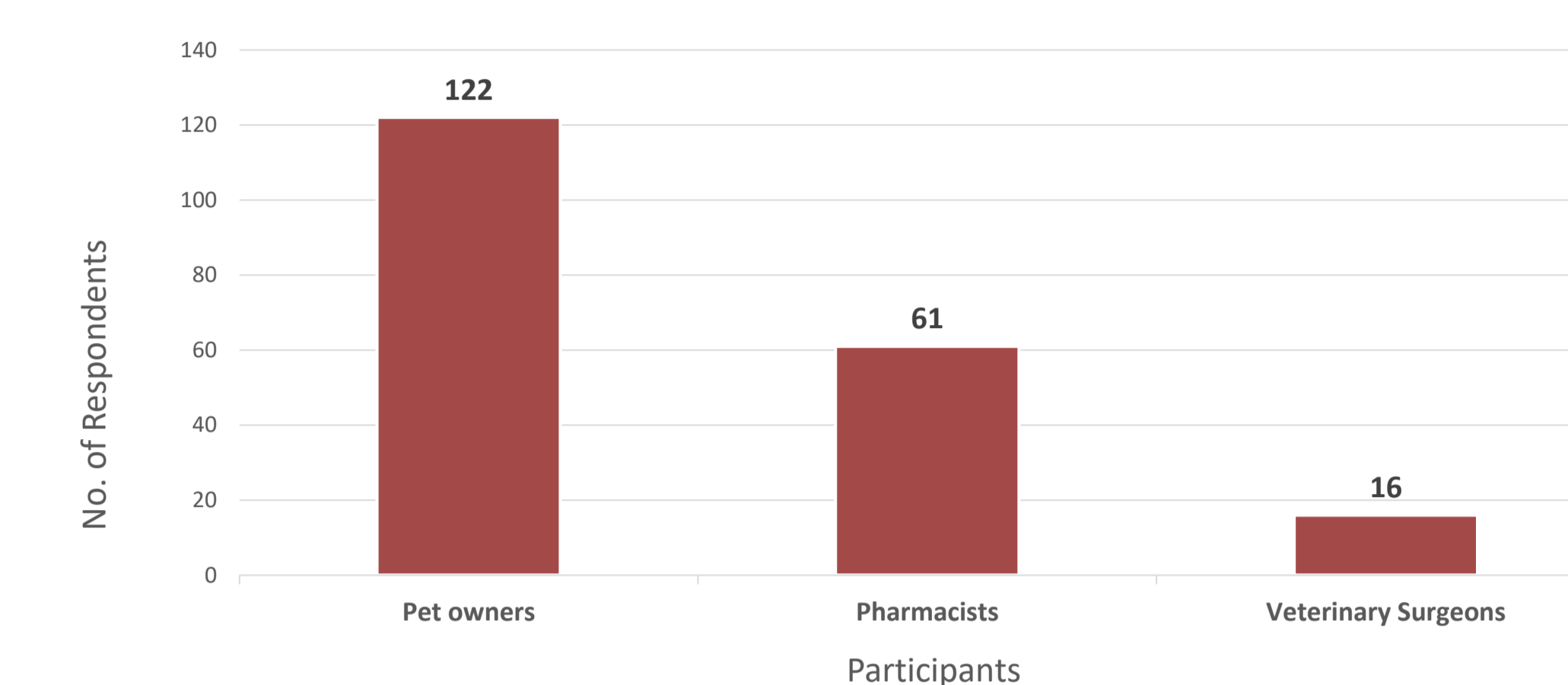
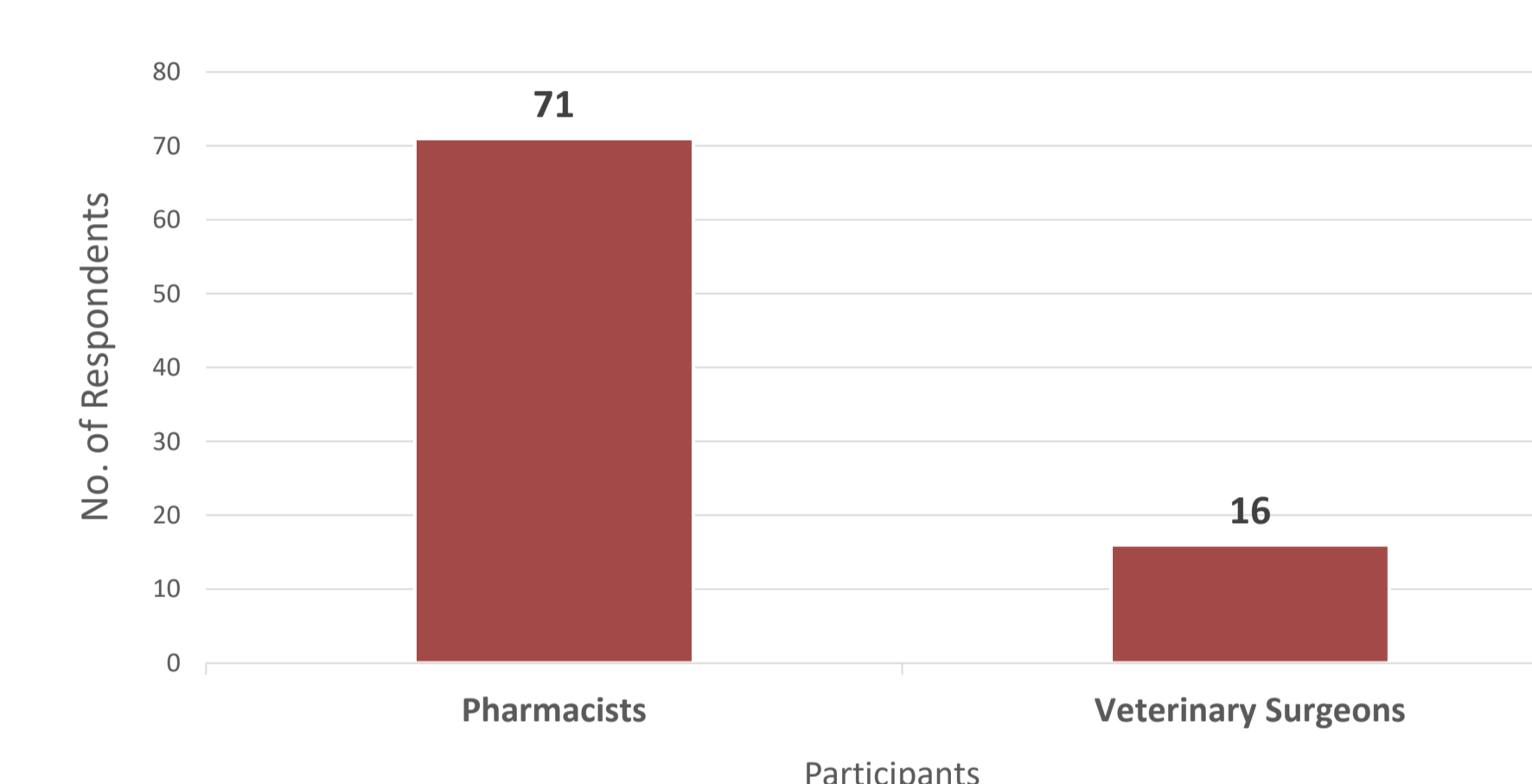


Figure 2: Number of pharmacists and veterinary surgeons who disagreed or strongly disagreed that pharmacists should be given training in veterinary pharmaceutical sciences



## AIMS

To develop a regulatory and an academic framework in veterinary pharmaceutical sciences.

## RESULTS

Twenty-one veterinary surgeons, 91 pharmacists and 232 pet owners compiled the questionnaire. Sixteen veterinary surgeons, 61 pharmacists and 122 pet owners disagreed or strongly disagreed that pharmacists are prepared to safely dispense and provide advice for medication use in animals (Fig. 1). Seventy-one pharmacists and 16 veterinary surgeons agreed that pharmacists should be given training in veterinary pharmaceutical sciences (Fig. 2).

The training programme developed is intended for pharmacists who would like to develop skills and competencies in veterinary pharmaceutical sciences. The training programme focuses on three main areas with a description of the content and a validated list of aims and learning outcomes for each of the areas.

Veterinary disease states	Veterinary Pharmacotherapy	Legal and Regulatory Considerations
<ul style="list-style-type: none"> <li>• Ten common disease states affecting companion and food-producing animals                             <ul style="list-style-type: none"> <li>• Behavioural disorders</li> <li>• Pain management</li> <li>• Endocrine disorders</li> <li>• Renal disorders</li> <li>• Cardiovascular disorders</li> <li>• Gastrointestinal disorders</li> <li>• Respiratory disorders</li> <li>• Dental disorders</li> <li>• Ophthalmic disorders</li> <li>• Dermatological conditions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Pharmacotherapy options for the ten common disease states affecting companion and food-producing animals.</li> <li>• For the most commonly used drugs:                             <ul style="list-style-type: none"> <li>• Indications</li> <li>• Mechanism of action</li> <li>• Dosing</li> <li>• Adverse effects</li> <li>• Safety profiles</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Introduction to the regulation of veterinary medicinal products and its historical background.</li> <li>• Similarities and differences between the regulation of human medicinal products and veterinary medicinal products.</li> <li>• Objectives and importance of regulation in the pharmaceutical field and how it impinges on the practice of veterinary pharmacy</li> </ul>

## CONCLUSION

Pharmacists are accessible to counsel pet owners and collaborate with veterinary surgeons to provide the best care for animal patients. Pharmacists dispensing medication for use in animals should be familiar with common disease states and comparative pharmacotherapy. Knowledge facilitates counselling, making it more effective and improves animal care. There is the need to familiarise pharmacy students and pharmacists with veterinary medicinal products so as to strengthen competence and confidence in providing advice on use of medicines in animals.<sup>1</sup>

Historically, the educational curriculum in pharmacy has centred around the human as the centre of disease states. The growth seen in veterinary pharmacy practice has not been paralleled by an increase in pharmacist education in the areas of veterinary disease states, pharmacotherapy and legal and regulatory issues. The training programme developed in this study has been designed to provide guidance, to those disseminating the information, on what the most important aspects are to be discussed in order to achieve the required aims and learning outcomes.<sup>3</sup>

## REFERENCES

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- Miller JC, Sehgal I. A Veterinary Comparative Counseling Elective Featuring Web-based, Student-created, Client Information Sheets. *American Journal of Pharmaceutical Education* 2016;80(1):15.
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## SETTING

Veterinary clinics, veterinary pharmacies, community pharmacies.