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FROM PILL TO PET: NAVIGATING THE COMPLEXITIES OF VETERINARY PHARMACY

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ABSTRACT

Background: As the need for cross-species healthcare expertise grows (Particularly with zoonotic diseases), veterinary pharmacy is an overlooked but highly relevant field for pharmacists. Their training makes them indispensable resources for physicians, veterinarians and researchers alike. Veterinary pharmacy isn't just another career path for pharmacists – it's a gateway to broader public health roles. Pharmacists who understand both human and animal health are poised to make critical contributions in disease control, medication management, and drug development. **Objective:** As community pharmacists increasingly contribute to veterinary patient care in the US, it's crucial for pharmacists and veterinarians to collaborate and define the specific roles pharmacists will play in supporting animal health. This study investigated the perspectives of both community pharmacists and veterinarians to understand their views on working together (interprofessional collaboration) and the potential role of community pharmacists in caring for animals. **Methods:** To gather information on how pharmacists and veterinarians in Ohio view collaboration and the potential role of pharmacists in veterinary care, researchers sent surveys to both professions. These surveys collected information about the individuals (demographics) and explored their opinions on working together, what role they see for pharmacists, what they expect from pharmacists, and their past experiences collaborating. Finally, researchers analyzed the data using a statistical test called a chi-square test. **Result:** While both veterinary pharmacists and specialists dispense medications, ensure compliance, and promote good treatment methods, specialists go further by offering consultations, research, and education. This expanded role is seen as requiring deeper knowledge of veterinary medicine, compared to the more focused duties typically associated with veterinary pharmacists.

INTRODUCTION

Community pharmacists in the World are increasingly taking on responsibilities related to the care of veterinary patients.[1] Historically, veterinarians served as the only source for pet medications. In the past, pet owners obtained all their animal medications directly from veterinarians. Traditionally, the responsibility of dispensing pet medications rested solely with veterinarians.[2]

Following the adoption of the AVMA's ethical guidelines, veterinarians now face a requirement to provide prescriptions to pet owners seeking them, provided a veterinary-patient relationship is established.[3] Since gaining the right to fill prescriptions elsewhere, many pet owners have opted for community pharmacies.[2] The increasing availability of pet prescriptions at community pharmacies has led to a rise in pharmacists dispensing medications for common animals like dogs, cats, and ferrets, fostering more frequent interactions with their clients.[2] While data on the exact breakdown of pet medication dispensing between community pharmacies and veterinary clinics in Ohio is lacking, the rising demand for pet medication, combined with the appeal of convenience and competitive prices at pharmacies, especially for pet owners without pet insurance, suggests a significant portion is likely filled at community pharmacies.[2,4,5]

Community pharmacists who lack thorough knowledge of veterinary medications might have a limited perspective on their role in the well-being of animal. While the Accreditation Council for Pharmacy Education sets guidelines for pharmacy programs, they don't require teaching about animal medications. As a result, there's no consistent education on this topic across pharmacy schools in the country. Many pharmacists lack training in veterinary medication, and this may not be a priority in their education. Studies show that most pharmacists haven't received any prior training in this area. This lack of training, which is common worldwide, can prevent pharmacists from safely dispensing medications for pets and providing proper guidance to clients.[9,10,11]

In addition to lacking knowledge about veterinary medications, community pharmacists may also be unaware of legal limitations on their involvement in certain aspects of animal care. Studies show that pharmacists not only report insufficient training in veterinary drug treatments but also in the legal aspects of preparing medications for animals.[9] For instance, some pharmacists might not realize that recommending over-the-counter medications for pets is illegal unless a veterinarian advises or prescribes them. This lack of awareness about their

legal boundaries can put animal health at risk and potentially expose pharmacists to legal issues.

Furthermore, pharmacy graduates often lack experience collaborating with veterinarians. This is despite ACPE Standard 11 promoting interprofessional education, requiring students to demonstrate teamwork skills, improve patient care through collaboration, and participate in shared decision-making. This highlights a potential disconnect between the required skills and the real-world experience of new pharmacists, particularly regarding veterinary care.[8]

While pharmacy students often learn teamwork with other healthcare providers, they rarely work alongside veterinarians due to limited veterinary pharmacy education. This means pharmacists might not know how to best collaborate with veterinarians or when it's crucial to consult with them. Additionally, pharmacists might ask veterinarians unnecessary questions (like for their NPI number) or for basic information they can find elsewhere. These kinds of interactions can create unnecessary friction in their professional relationship. Even if some veterinary programs try to include pharmacy students, this experience alone might not be enough to fully prepare them to understand the role of pharmacists within animal care.[12]

A survey by the AMVA revealed that veterinarians frequently collaborate with pharmacists, ranking them among the top healthcare professionals they interact with.[6] Although pharmacists are commonly consulted by veterinarians, their working relationship hasn't progressed as significantly as collaborations with other healthcare professionals.[1]

This study aims to explore how community pharmacists and veterinarians view collaborating with each other and how they see pharmacists contributing to the care of animal patients also this review focuses on understanding the opinions of community pharmacists and veterinarians about collaborating with one another and the potential role of pharmacists in treating animals.

Methods

Research method

This Delphi study received approval from the Massachusetts College of Pharmacy and Health Sciences Institutional Review Board. We chose the Delphi technique because it allows experts to reach consensus on complex issues, like defining professional roles. This method gathers opinions without requiring participants to meet in person, eliminating potential biases

that can arise from group dynamics. Using the Delphi technique allows us to generate valuable information for decision-making in a clear and systematic way.[13,14]

This method, known as the Delphi technique, relies on anonymity, repeated rounds of feedback, and expert opinions summarized statistically to achieve consensus.[14]

Advisory group

The Advisory group included veterinarians specializing in large, small, and exotic animals, pharmacists from both hospitals and community settings, and a pharmacy educator. The group's first meeting focused on discussing what the research says about the pharmacist's role in veterinary care. They also brainstormed the types of information to include in the first questionnaire.

Based on their discussion, the group created 10 open-ended questions. These questions explored different aspects of the roles, training needs, and challenges faced by pharmacists who work with veterinarians, as well as those who specialize solely in veterinary pharmacy. The questionnaire didn't define the roles of 'veterinary pharmacist' (a traditional pharmacist who assists veterinarians) or 'veterinary pharmacy specialist' (a pharmacist focused solely on animal care). This allowed experts to use their own understanding of these roles when answering.

The study didn't include definitions of "veterinary pharmacist" or "veterinary pharmacy specialist" on the questionnaire. Experts were asked to use their own understanding of these roles. The advisory group identified 20 experts in each of 7 relevant fields. This resulted in inviting a total of 143 experts to participate in the study.

Survey design

Researchers reviewed existing studies to understand the current collaboration between community pharmacists and veterinarians. This review also helped them design the framework and specific questions for a survey on this topic.[14] Two online surveys were designed, one for pharmacists and one for veterinarians. Both surveys collected basic information about the participants, including gender and age. Respondents always had the option to select "choose not to answer" for sensitive questions.

The survey asked participants if they worked in community settings – those who didn't were excluded. The rest of the survey focused on four areas: attitudes about collaboration, expected

roles of pharmacists, previous collaborative experiences, and a section for open-ended comments. Questions used terms like 'pets' and 'animal patients' interchangeably. Each survey was piloted, with feedback used to improve clarity and validity. The Northeast Ohio Medical University Institutional Review Board approved this study.

Survey distribution

Researchers got permission from the Ohio State Board of Pharmacy and the Ohio Veterinary Medical Licensing Board to access lists of all licensed pharmacists and veterinarians in the state. They then sent an email invitation to participate in the study, including details about the research and a link to the online survey. setting should complete the survey. Participants consented to participate in the study by clicking a confirmation link. No identifying information was collected, and all responses were anonymous. Surveys were distributed to potential participants via email on August 7, 2019. A reminder email was sent out every week for three weeks, and the survey closed on September 3, 2019**.**

Data analysis

he study only analyzed complete surveys. Responses on the 4-point scale were combined into "agree" and "disagree" categories, and percentages for each statement were reported. For other sections, the percentage of participants choosing each option was reported. Group comparisons used chi-square tests, and SPSS software analyzed the data. Finally, qualitative analysis of open-ended responses identified recurring themes.

Veterinary pharmacist versus veterinary pharmacy specialist role

Both the veterinary pharmacist and the veterinary pharmacy specialist were seen as playing crucial roles in seven key activities. However, the specialist's role was viewed as encompassing a wider range, including clinical practice, research, and education. Wildlife/exotic animal vets, community pharmacists, and small animal vets agreed that pharmacists specializing in veterinary medicine should maintain references for both animal and human drugs, and provide relevant information to pharmacists and veterinarians alike. Furthermore, community pharmacists believed that nearly all listed activities should be included when defining the role of veterinary pharmacist.

Pharmacy educators had the most limited view of the veterinary pharmacist's role. Nearly all listed tasks were agreed upon for veterinary pharmacy specialists (except for three specific

ones). However, significant disagreement among those rating community veterinary pharmacists prevented reaching a clear consensus on these tasks.

Veterinary pharmacist versus veterinary pharmacy specialist training needs

The study also explored the perceived training needs for both roles. Experts agreed that a veterinary pharmacy specialist requires in-depth knowledge of animal physiology, diseases, and drug behavior (Pharmacokinetics) – much more than a traditional veterinary pharmacist. Experts didn't all agree on the specific training needs for veterinary pharmacists compared to veterinary pharmacy specialists.

Most panels, except for hospital pharmacists, felt that preparing and compounding medications for animals was crucial training for veterinary pharmacists. However, only panels directly involved in veterinary pharmacy practice (Clinical, hospital, and community pharmacists) believed that understanding common animal diseases was also important for this role.

Experts believed specialists required more extensive training. Veterinarians (wildlife/exotic, large, and small animal) saw both classroom learning and hands-on experience as crucial preparation. The advisory group even considered residency or fellowship important, although not everyone agreed (Average score 3.78, with some variation).

DISCUSSION

Traditional methods for determining training needs are not always applicable to emerging fields. The Delphi process was used to gather expert opinions in the developing field of veterinary pharmacy. This process helped establish a shared understanding of roles, duties, and training needs for veterinary pharmacists and specialists.

CONCLUSION

This study, the first of its kind, used the Delphi technique to explore the roles and education needs of veterinary pharmacists and specialists. Our findings suggest that while pharmacists primarily focus on dispensing medications and providing drug information, specialists take on wider responsibilities, including consultations, research, and education. This research lays the groundwork for educators to develop relevant curricula in the evolving field of veterinary pharmacy.

Though both pharmacists and veterinarians believe collaboration is important, they disagree on the pharmacist's exact role in animal care. To improve patient outcomes, this difference in perception needs to be addressed. Education and initiatives focused on clarifying roles could foster a stronger working relationship between these healthcare professionals. It would also be valuable to research specific obstacles to collaboration and how pharmacists and veterinarians prefer to communicate.

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