SOFT SKILLS AND EMPLOYABILITY: THE IMPORTANCE OF CURRICULAR AND PROFESSIONAL INTERNSHIPS FOR VETERINARY MEDICINE STUDENTS, ACCORDING TO THEIR EMPLOYERS

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Abstract

The gap between the skills of recent graduates and the requirements of the job market represents a significant challenge. In this context, it is essential that Higher Education Institutions (HEIs) adapt their educational programs to the demands of the employment market. Fostering Critical Thinking emerges as a fundamental tool to facilitate the transition between the academic and professional contexts, optimizing the integration and performance of new employees. In this article, we present the results of the content analysis of the transcript from the interviews that were conducted with 18 veterinary Doctors, who were separated into three focus groups.

Fostering critical thinking in veterinary internships requires a collaborative effort involving proactive students, dedicated and trained supervisors, and supportive universities. By strategically designing internship programs, promoting effective teaching practices, the veterinary profession can cultivate graduates who are not only competent in clinical skills but also equipped with the analytical and evaluative abilities necessary to navigate the complexities of veterinary practice and contribute to its advancement. The emphasis should shift from simply providing practical experience to intentionally cultivating the intellectual agility and independent judgment that define a critically thinking veterinary professional. Professionals also mentioned the importance of possessing a set of non-technical skills, such as effective communication, problem-solving, emotional intelligence, adaptability, and critical thinking, considered essential for success in the workplace.

Keywords: Critical Thinking, Internships, Soft skills, University-Industry collaboration.

1 INTRODUCTION

The existence of internships dates back hundreds of years, when individuals were chosen to work with a master craftsman with the aim of learning from an experienced mentor and continuing certain employments [1]. The definition of an internship can encompass service-based learning, cooperative learning, co-operative education, work experience, or practical experience, but the common thread across all perspectives is that it involves an individual in training, the intern, who may be paid but is a temporary employee [2].

The main objective of an internship is to offer young people the opportunity to acquire more comprehensive skills, knowledge, attitudes, and perceptions. As much as possible, the experience should be sufficient to establish a vocational identity [3]. Gaining real professional experiences helps higher education students put what they have learned into practice within the context of their academic training, which facilitates the transition to the job market, where they arrive with a global mindset and broadened horizons [4]. Furthermore, it allows them to experience what it's really like to work in their field of study and learn how to deal with the problems in that area, as well as assess the level of their professional training, also serving to evaluate their career plan. This is also an effective way to gain insight into future trends in the sector and to become familiar with company policies for the development of professional skills [5]. Globalization has brought greater competitiveness, and according to literature, students who possess competence, experience, an international perspective, and a professional attitude correspond to more responsible and courageous workers, demonstrating more effective, applicable, and goal-oriented performance [3]. In a study conducted with nursing students, an area in which internships play a significant role in academic training, the students' critical thinking was developed through professional practice. Critical thinking is understood as 'purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, and contextual considerations upon which that judgment is based [6].

Essentially, an internship is a collaborative agreement between the student, the supervisor at the host organization, and the academic supervisor [2]. A truly effective and efficient internship program acts as a vital bridge, strengthening the ties between the academic institution and the local community in various ways [7]. Tutoring and mentoring are fundamental and must be developed effectively through careful evaluation. The academic supervisor guides and assists the students in defining their internship objectives and establishing how they will achieve and measure these objectives, but the overall development and achievement of learning goals are the intern's responsibility [7]. In turn, supervision by professionals at the host organization has the potential to help students learn from mistakes, learn through networking, or even through numerous interpersonal experiences [5].

2 METHODOLOGY

The work presented here is the result of conducting three focus group interviews with 18 veterinary doctors (six per group), who have responsibilities in the supervision of internships. These interviews were part of one of the phases of a larger study within the scope of the European project Think4jobs. [8]. For this article, we selected one of the sections from that interview, in which the following four questions were asked:

- 1 Do you consider why the internship program is suitable for promoting critical thinking?
- 2 Do internships promote critical thinking or clinical reasoning more? What is your perception of the role of the internship supervisor?
- 3 Do you have any recommendations for possible implementation in internships?

The interviews were conducted by two experienced researchers, who recorded and transcribed them. Content analysis processing was carried out based on thematic analysis [9, 10]. Content analysis matrices were constructed and organized into categories and subcategories [11], which emerged from the analysis of the interviews, based on the extraction of content. During the content analysis process of the interviews, the categories and subcategories were reformulated through a cyclical process of improvements, syntheses, and reflections, in which the transcriptions were reread several times to select the relevant textual excerpts for the objective of this investigation. In this process, NVivo software was used. After the content analysis matrices were completed, the aggregated results of the three focus groups were organized and presented, with a code assigned to each interviewee and each of the recording units. In this article, we opted to use only sequential code for the recording units.

3 RESULTS

Given the page limit available for writing this article, it was not possible to include the tables with the matrices produced. Therefore, we opted to present the results in a running text, integrating the recording units in a connected manner with the text, to give textual and narrative meaning to the content, facilitating its understanding. Sixty-one recording units were extracted and distributed across 6 categories: "Predominance in internships of the development of Critical Thinking or Clinical Reasoning"; "Suitability of internship programs for the promotion of critical thinking"; "Practices for promoting critical thinking in internships"; "Aspects to improve the training programs of internships to promote critical thinking"; "Supervisors' expectations regarding interns during their training"; "Perceptions about the supervisor's role"; and "Other suggestions/recommendations."

3.1 Synthesis of the content analysis by category

Next, we present the main ideas that emerged from the analysis, by category.

3.1.1 Predominance in internships of the development of Critical Thinking or Clinical Reasoning

Three key ideas emerged in this category: the perception that the development of clinical reasoning takes precedence over the development of critical thinking in a hospital or clinic. "(...) In the hospital, I believe it's more clinical reasoning than critical thinking (...) we don't give as much opportunity for that aspect to be discussed with the student" UR_1; the idea that the development of critical thinking takes precedence over the development of clinical reasoning in other areas of veterinary practice "(...) I work on a livestock farm (...) the clinical aspect is quite reduced, and obviously we look more at the herd and not at the individual (...) our interns end up having far fewer stimuli for clinical thinking than for critical thinking, because we end up pushing them to question the small things they see in their daily routine,

whether it's about feeding, handling, veterinary aspects like prophylaxes, whatever it may be, but we end up stimulating critical thinking more than clinical thinking (...)" UR_2, "(...) in beekeeping, it ends up being a bit removed from the clinical aspect, much more geared towards clinical reasoning, more towards case diagnosis and problem-solving (...)" UR_3, and finally, the idea that in other host institutions, the development of both occurs, both critical thinking and clinical reasoning "(...) in my case, they would be on an equal footing; perhaps often the 'out of the box' insight, often perhaps I encounter more complex situations, with challenges, trying to understand parameters, whether environmental, equipment problems, sometimes with issues that are not related to the animals. And with my clinical decisions, I try to understand what is happening currently, because at this time of year, with this climate, I try to gather all possible variables, and sometimes it's not even to resolve a situation, it's to predict or prevent it in the future. Not in that more purely clinical component" UR 4.

3.1.2 Suitability of internship programs for the promotion of critical thinking

Professionals explained that this suitability can depend on the interns' attitude "(...) The truth is that everything depends on what each individual wants to do (...) and one has to draw upon all the basic training (...)" UR_5, as well as the internship location "It's necessary to frame the type of internship" UR_6, or the scientific supervisor "(...) it's important that there is advice from the internship supervisor regarding the student [so that they do their internship] in the most suitable places for what they intend to do." (...) Now, if it's well utilized, and I think the professor's guidance is fundamental there, I think it is, it can be a very positive and decisive experience" UR_7. It was also mentioned that the internship is an opportunity to work in the area of interest, and that interest promotes a predisposition for critical thinking "(...) opportunity to witness clinical cases that I hadn't had at the university, in the contact it provided regarding the species, regarding contact with clients" UR_8 "(...) we try to ensure that the intern already has some project in the area where they will be working, some project they want to develop to stimulate their critical thinking. We accept interns who already have a research project in mind and want to put it into practice." UR_9.

Still within this category, the professionals offered a set of recommendations for Universities, specifically that the Universities themselves should provide the internships, and no other institutions, "I think that practical training internships (...) should be, obligatorily, or preferably, provided by the university (...) the faculty should be responsible for this internship (...) leaving the student, in this way... a bit out there... isn't it?... to intern anywhere, seems a bit inconsistent with the quality of education we want (...) I always prefer that students do their internships at the faculty" UR_10, "I think the mother institution [University] should be responsible for more comprehensive training, in practical terms as well!... and not forgetting that we are veterinary doctors, and it could happen that one of our colleagues goes to do an internship in a slaughterhouse and suddenly starts wanting to treat dogs or horses" UR 11. However, one professional emphasized the limitation of the universities' capacity to respond "I don't believe that any faculty has the capacity to provide internships to all students in all possible professional areas: that's the big problem. One of the major difficulties..." UR 12. Another interesting aspect would be to promote more practical components. "(...) more practical experience and making it mandatory to go through all the practices, as a way to guarantee the quality of what one might do in the future." UR 13. Within this category, it was also mentioned that the final internship should be focused on an area of interest to the intern "to be specific to what they want" UR_14 and that the existence of short-term internships throughout the course would be beneficial "(...) if possible, there should be internships throughout the entire course, so that students have a perception of various realities. They shouldn't be left only for the final year. I think there should be practical internships, which doesn't mean it's their future, but which demonstrate other realities" UR 15, "six weeks for each area that the course can lead to, or, at worst, that in the 4th and 5th year they start with these practical training sessions in the various areas" UR_16.

3.1.3 Practices for Promoting Critical Thinking in Internships

The interviewees mentioned some practices for the stimulation of transversal skills, such as argumentation, discussion, and sharing of ideas "(...) a final discussion. There has to be a discussion and an exchange of ideas and a debate of ideas (...) that will always require a presentation and a discussion of the case itself" UR_17, "(...) we discuss the points of view, and I think that's the only way, after 5 years of theory, for them to have to go into the field and show... every day ..." UR_18. Another strategy is the use of practical cases: "(...) we use practical cases, and we ask students to do a written assignment and try to identify the problems of that farm, covering all aspects, from handling, general management, biosecurity, feeding, and infectious diseases... and then write a report on what they saw on the farm and indicate two to three corrective and preventive measures. (...) they must have the ability to relate all the knowledge in the various areas they have acquired over the years" UR_19. Dialogue

was also valued "we keep dialoguing and developing methods for approaching [animal] farms" UR_20 and autonomous research work "they would take topics home to study" UR_21, "(...) [I] I would send topics for them to study, yes (...) to do a review, if I noticed they had more difficulty in one area or another, I would give them a topic to study (...) they are the ones who do the study, but then we guide the things they do, in other words, not spoon-feeding them the information" UR_22.

Another practice identified was the assignment of responsibility through contact with reality "(...) I send them to the farms alone, that is, they go to do clinical work without me, and I do the anamnesis approach (...) in contact with the producer, I get the producers to push them, to ask questions" UR 23. One of the participants mentioned, regarding this aspect, that: "The model that S2 mentioned is excellent; in fact, nothing is better than students being faced with a real situation and trying to solve the problems." UR 24, "It's putting them in the field, and that's the big question; when they look for an internship at the hospital, they have to be in the field, they have to be the ones doing the consultation, doing everything, having the discussion at the end, being able to make the decisions, already with the decisions made, right? for the exams, with everything (...) An internship has to be [done] in the field" UR 25. In contrast to this idea, another participant states that "I also agree, but I can't put them into practice. I would like to (...) but if I sent an intern to visit a client like that, my life would be ruined. (...) I don't have that ease; the interns I've had had a more passive role because the individual value of the animals is high, on the one hand, and on the other hand, the client's expectations are also high and they don't tolerate mistakes or us being there for training (...) if I could do what S2 does, I think it would be fantastic. (...) the problem is how a person can do that, even in a sufficiently controlled environment to minimize errors (...) In a private clinic, I've never dared. Maybe due to a lack of courage, but I would like to." UR 26. The same idea is mentioned by another colleague "(...) not all clients allow it, but there are clients who don't mind students having contact with the animals (...) And with a lot of luck, when we have producers open to it, including surgical situations, I let the students perform the surgery, not entirely, but almost entirely, from anesthesia to the entire surgical procedure." UR_27. Furthermore, it's also important to support and quide towards the job market "(...) if they seek out the internship supervisor, we also have to quide them in their professional life. And we address the different strategies for entering the market in certain areas that may be of interest to them." UR 28.

Professionals indicated that they identified difficulties among students in relating knowledge and in managing stress "(...) I still notice that difficulty in students in relating the various pieces of knowledge (...) they have in relating all the knowledge they have acquired over the 5 years of their training and applying it and identifying the critical points that exist on that farm." UR_29 and "(...) faced with stress, they get nervous or completely blocked. The most difficult thing we have with these students is knowing how I'm going to promote critical thinking in a person who studies immensely but freezes in a stressful situation." UR_30.

3.1.4 Aspects for Improving Internship Training Programs to Promote Critical Thinking

Within this category, four subcategories were identified. The first is the need for training of the professional internship supervisors, at the level of raising awareness among professionals regarding critical thinking "(...) raising awareness among the professionals who will be providing the internship, who will be accompanying the interns (...) giving them that importance, the professionals in the field, also integrating them into this dynamic of critical thinking. And the simple fact of already being alert to these issues (...) the person ends up taking a better approach (...) forcing them to make other decisions forces the intern to be exposed and make decisions alone to see how it goes, forcing them to think more for themselves" UR_31, and "the university itself ensuring that the person who will be hosting the intern also has critical thinking." UR_32. It's important "(...) to also have tools to demand that evaluation from the internship supervisor" UR_33.

The second idea concerns the promotion of moments of contact with real situations, stimulating their responsibility "(...) to try to put them in situations where they were really the ones taking charge, indirectly assuming responsibility for a case (...)" UR_34. However, the idea also remains that this depends on the intern's attitude, and that this reflects the decisions made "(...) it's really the moment to do what we want, and obviously, the choice is ours (...) the internship always ends up being a reflection of our choices, that is, what we choose to do." UR_35 "(...) And it's also our responsibility to look for a place that stimulates our critical thinking (...)" UR_36, "(...) it's important that when people choose their internship locations, they have a reference" UR_37. The choice regarding the duration of internships is also highlighted "I think students perhaps make a mistake by wanting to gain many experiences in the short period of time the internship lasts, and I think critical thinking and all that is also built with a bit of confidence and time. But... if you do four internships in a month and you're rushing around, just when

you start to feel comfortable in one place, you're already moving on again. And what's important is to look at everything and realize that when we were interns somewhere, it wasn't in 15 days that we felt comfortable and started questioning everything. We must adapt to the reality, to the place where we are, and that takes time." UR_38, "(...) I think having 3 to 4 months in one place is more beneficial than spending one month here and another month there, 100% agree on that aspect, yes." UR_39.

And finally, they highlighted that it is important for supervisors to have the availability to welcome interns and to promote critical thinking "(...) within the institutions themselves, for those who would make themselves available, with the doctor's willingness, obviously (...) there should be people more responsible for the interns and their interaction. Because no matter how much goodwill and proactivity the interns have, if it doesn't coincide with a person who allows them to give vent to critical thinking, to that proactivity, perhaps it won't be valued as much." UR_40, "As a veterinarian who is going to receive an intern, you can't be uncomfortable in refusing and being sincere, in saying, 'here I'm not in a position, nor is it a good phase for us to receive interns,' there has to be that openness (...) and explain to them what they will really come here to do and what we can or cannot give them, and understand their expectations and manage the interns' expectations." UR_41, because "(...) not everyone has the vocation to teach or even the interest in accompanying and wanting to teach and guide an internship. I think it's important to define who is available to do it" UR_42.

3.1.5 Supervisors' Expectations Regarding Interns During Their Training

Expectations are closely linked to personal and interpersonal skills, meaning they expect interns to have proactivity, curiosity, the ability to question, availability, autonomy, and interest "(...). In my interns, I value more than technical skills, whether they are good people and willing to learn... It's a matter of time (...) if they are willing to learn and don't deceive themselves, so if they are honest with themselves, they will eventually get there (...) But the truth is that after a few years... that perception... if the person is willing, that perception ends up emerging, developing, and the person manages to gain a good degree of technical proficiency" UR_43.

One of the interviewees states that they like "(...) interns who ask many questions and are curious, who don't accept everything we say as right, who study, who make an effort, who are available, but who raise questions (...) and what is expected of an intern is that they want to grow and learn for themselves, there has to be openness and ease for them to be able to criticize and express any idea they have" UR_44, "(...) I look for more proactivity and availability (...) confidence and that they start to gain more knowledge. I hope they evolve to a point where we can start to look at them as a member of our team" UR_45, and "(...) we look for that availability, that interest, curiosity in interns, that desire to know more, to want to learn (...) that has to come from the intern themselves (...) the intern is required to have these factors that are more important: that availability, interest, and curiosity (...)" UR_46.

3.1.6 Perceptions of the Supervisor's Role

Regarding "Perceptions of the Supervisor's Role." the professionals mentioned that a supervisor must have the willingness and availability to explain "(...) to have availability for them (...) and the willingness to explain and spend our time, to have a person there by their side who sees and asks questions (...) and to help in the whole process, in whatever they need" UR 47, because "(...) as supervisors (...) they must be willing and have the same availability to receive them to answer questions (...) it's very important that the person really wants to and is available" UR_48, In other words, it requires this "(...) availability (...) the supervisor being motivated and having the desire to teach" UR 49. It's also important not to be too demanding "We don't demand that they know too much; I don't think ethically they have to know everything and get everything right the first time" UR_50, and to have the ability to adopt personalized approaches according to each intern "(...) to try to understand what that person's, the intern's, approach would be (...) if it aligns with ours, or possibly discuss and try to understand different perspectives and different approaches, because often both are correct" UR 51, "(...) it's about understanding the intern's own interests (...) understanding where they have more or less confidence" UR 52, because "(...) the versatility of a supervisor, if they are capable of realizing that each intern who passes through their hands has their own personality, each has their own way of being, some more reserved, others not, others more confident or open to trying or suggesting new options (...) understanding what each one's strengths are" UR 53.

Finally, the importance of professionals not being obligated to supervise is expressed "(...) not everyone should feel obligated to supervise either." UR_54, and that they should stimulate critical thinking "(...) to stimulate and try, therefore, to ask for that responsibility from the intern, and to foster that a little. I think those are really two important aspects to highlight in a potential internship supervisor," and to possess

experience "(...) curriculum vitae, I think an internship supervisor has to have some experience (...) they will have to have already made their mark in the job market to be able to guide the internship in the respective area in which they have the interns (...) they must have a developed critical thinking to stimulate the critical thinking of those they supervise (...)" UR_56.

3.1.7 Other Recommendations for Possible Implementation in Internships

In this last category, professionals directed suggestions and recommendations to both the host institutions of the interns and the Universities. Regarding the host institutions, the participants mentioned the importance of being open to welcoming the interns' actions "(...) "openness so that interns would have the possibility of fully integrating into the team (...) being able to make decisions (...) making a difference in the job market (...) if there were at least that openness (...) for them to have that availability, that closer contact with the animal's tutor, that decision-making, I think it would only be beneficial points for the internship (...) not all institutions will allow this because it requires a lot of responsibility on their part." UR 57. For the universities, they advised four ideas: the final internship to be focused on a specific area. "(...) the final internship of courses and in the curricular internship to focus on one area and not on small internships is fundamental for a person not to have that initial adaptation that doesn't stimulate this part of critical thinking as much. (...)" UR 58; to have short-term internships during the course "(...) if students, even during their degree, had internships, even if shorter, or experimented in various areas, started to understand what they want (...) it would be good for this critical thinking to start being stimulated earlier" UR 59; to establish institutional protocols (...) to try to understand if those places will effectively be a good place to receive interns (...) If they are really capable of it, and if within that same place, there are effectively people, veterinarians, willing, able, and qualified to receive and guide interns (...) Regarding the development of critical thinking, it ends up being a bit vague, doesn't it, and not very stimulated" UR 60; and to proceed with the monitoring and supervision alongside the host institutions "(...) universities can play a more important role in policing (...) whether the student is really developing that critical thinking or not, and being stimulated to do so (...) evaluating who is supervising that intern, and then perhaps requiring some proof of that monthly. Although it's complicated, but well... that's my opinion" UR 61.

4 CONCLUSIONS

The analysis of perspectives from veterinary professionals underscores the relationship between critical thinking and clinical reasoning within internship programs. While clinical reasoning often takes precedence, the development of critical thinking is recognized as equally vital across the broader spectrum of veterinary practice, fostering analytical skills applicable to diverse scenarios, from herd management to complex diagnostic challenges. The perceived balance between these two cognitive processes can vary significantly depending on the internship environment. The effectiveness of internships in nurturing critical thinking is not automatic; it requires a confluence of factors. The intern's proactive engagement and knowledge are crucial prerequisites. Furthermore, the strategic selection of the internship location and the active guidance of a supervisor who aligns with the intern's interests are vital. The opportunity to grapple with real-world cases and pursue self-directed projects within their chosen field activates a natural curiosity and a drive for in-depth analysis, thereby fostering critical thinking.

A key debate emerges regarding the role of universities in shaping internship experiences. While some professionals advocate for university-led programs to ensure consistent quality and pedagogical alignment, others recognize the practical limitations of such a model given the scope of veterinary specializations. A balanced approach suggests that universities should enhance the practical components of their curricula and facilitate well-structured internships, potentially incorporating shorter placements early in the program to expose students to diverse facets of the profession. Emphasizing focused final-year internships in areas of specific interest is also deemed essential for cultivating deeper analytical skills. Several pedagogical strategies are identified as effective in promoting critical thinking during internships. Encouraging open dialogue, argumentation, and the exchange of ideas through case discussions and presentations allows interns to articulate their reasoning and engage with alternative viewpoints. The use of complex, real-world cases that require the integration of knowledge from various disciplines challenges interns to think holistically and develop comprehensive solutions. Assigning autonomous research tasks and fostering a supportive mentoring relationship that encourages questioning and independent inquiry are also highlighted as valuable practices. A particularly impactful, yet sometimes challenging, approach involves delegating interns with increasing levels of responsibility in real-world settings, including direct interaction with clients and independent case management. While this immersion fosters invaluable problem-solving skills and the ability to make decisions under pressure, its implementation can be constrained by factors such as the perceived value of animals and client expectations, particularly in private practice. Finding a delicate balance between providing hands-on experience and ensuring a supportive learning environment remains a critical consideration.

Supervisors identify common challenges among interns, including difficulties in integrating knowledge across different domains and managing stress effectively in high-pressure situations. Addressing these requires pedagogical approaches that emphasize the connection of veterinary knowledge and strategies to build confidence and resilience. Recommendations for enhancing internship programs to better cultivate critical thinking include the training of supervisors in effective mentoring techniques and the importance of fostering analytical skills. Creating more opportunities for interns to engage with real-world challenges and take ownership of cases, while ensuring appropriate guidance, is also crucial. The duration of internships is highlighted, with longer placements in focused areas considered more conducive to developing in-depth critical thinking abilities. Ultimately, the willingness and capacity of supervisors to act as effective mentors who prioritize the development of critical thinking are paramount.

Supervisors' expectations of interns extend beyond technical proficiency, emphasizing essential personal and interpersonal attributes such as proactivity, curiosity, the ability to ask pertinent questions, a strong work ethic, and genuine interest in learning. They value interns who are self-motivated, eager to learn, and possess the intellectual honesty to recognize their limitations and attempt for improvement. The perceived role of the supervisor is multifaceted, demanding not only technical expertise but also a willingness to invest time in mentoring, explaining concepts, and fostering a supportive learning environment. Adapting supervisory approaches to individual intern needs and learning styles is considered essential. Importantly, supervisors should possess well-developed critical thinking skills themselves and should not feel obligated to supervise if they lack the capacity or inclination to provide effective guidance. Recommendations for universities include establishing robust protocols for selecting and evaluating internship sites, promoting longer, focused internships, integrating shorter practical experiences throughout the curriculum, and actively monitoring intern progress and the quality of supervision.

In conclusion, cultivating critical thinking in veterinary internships necessitates a collaborative and intentional effort involving engaged students, well-trained and dedicated supervisors, and supportive academic institutions. By strategically designing internship programs, promoting effective pedagogical practices, and ensuring robust oversight, the veterinary profession can foster graduates who are not only clinically competent but also possess the analytical prowess and independent judgment essential for navigating the complexities of veterinary medicine and contributing to its future advancement. The focus must shift from simply providing practical experience to actively nurturing the intellectual agility and critical reasoning skills that define a highly effective veterinary professional.

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