

Qualified but not yet fully competent: perceptions of recent veterinary graduates on their day-one skills

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Abstract

Background The goal of veterinary education is to prepare learners to successfully enter the profession. However, the transition from learner to professional can be an intense and stressful phase. In this study, recently graduated veterinarians' perceptions of readiness to work independently and to successfully cope with early career challenges are addressed.

Methods A survey based on five commonly occurring entrustable professional activities (EPAs) in primary care was sent to newly qualified veterinarians (graduated between six months and three-and-a-half years ago and working in primary veterinary clinics). The survey was a combination of open and Likert scale-type questions and contained items on the self-reported need for supervision for these EPAs. One hundred and fifty-six participants (response rate 41.2 per cent) answered the survey. Descriptive statistics were used to analyse and present the quantitative data.

Results The day-one after graduation levels varied per EPA between 'with direct, proactive supervision' and 'supervision at a distance'. On average after 6.8 months participants felt ready to execute all five tasks with distant supervision. After almost 10 months, participants had the feeling of being fully competent to execute the EPAs unsupervised.

Conclusion This study provides insight into early career challenges faced by recently graduated veterinarians. The results emphasise the importance of adequate preparation of veterinarians during education and the importance of guidance during early career to foster a successful transition from veterinary school to clinical practice.

Introduction

Veterinary curricula aim to educate learners to be optimally prepared to enter the veterinary profession. However, the transition from veterinary education to primary veterinary practice is experienced as a challenging period of rapid personal and professional development.^{1,2} Many recently graduated veterinarians start and thrive in a successful career; however, a substantial number struggle. For some graduates this period is accompanied by elevated stress levels,^{3,4} negative emotions,⁵ depression⁴ and signs of burn-out.⁶⁻⁸ Moving from university life into veterinary practice

initiates challenges, including isolation (moving away from family and friends),⁹ increased working hours, including night and weekend shifts,¹⁰⁻¹² and increased responsibilities.¹³ A study by Sans *et al*¹⁴ illustrated that recently graduated veterinarians can experience a gap between their expectations and professional reality at the start of their professional career.

Difficulties in the transition from an undergraduate to a professional hold not only for veterinary medicine. In medical education the transition from a medical learner to a newly qualified professional is a similar topic of debate.¹⁵⁻¹⁷ The trajectory towards unsupervised practice is a continuum from undergraduate to postgraduate ('becoming a qualified doctor') to specialist training (residency) and continues into the first few years of practice.⁵ The transition from undergraduate to postgraduate training has been described as critically intense learning periods in which doctors (and other newly qualified professionals) continue to learn under supervision.^{15,16} In veterinary medicine, however, directly after graduating from

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veterinary school, recent graduates are licensed to practise unsupervised. This requires veterinary schools to ensure that graduates entering veterinary clinical practice meet professional and societal demands.^{18 19} An adequate initial set of personal and professional skills is therefore indispensable to foster a successful transition from veterinary education to practice.^{20 21} However, research shows that a substantial percentage of recently graduated veterinarians lack confidence in their own skills and abilities,^{8 22} which is also recognised by employers.²³

Knowing and understanding one's strengths and weaknesses provides the opportunity to discuss these with future colleagues and employers, as well as the level of supervision that would be most appropriate, being a new graduate performing various professional activities. Entrustable professional activities (EPAs) can increase transparency regarding abilities and activities in the workplace from the very beginning of training until full responsibility to perform a professional activity.²⁴ EPAs are those professional tasks that together constitute the mass of critical elements that operationally define the activities of a professional.^{25 26} EPAs were introduced to operationalise competency-based medical education and to facilitate the guidance and evaluation of learners in clinical workplaces. Furthermore, EPAs lead to recognisable outputs that are observable and measurable, and which in turn leads to the decision about whether the activities were well executed or not.^{24 25} The EPA descriptions should be well elaborated to shape and focus experiences for the learner, with a clear goal of preparing learners for entrustment decisions. The use of EPAs can be described as a movement within the competency-based educational concept, to situate competencies within workplace contexts.²⁷ Trust allows the graduate to experience increasing levels of participation and responsibility in the workplace in a way that builds competence for future practice.²⁸

Competence is a threshold for entering the profession rather than an end stage of development.²⁵ This leads to the question which clinical tasks recent graduates are able to do that cannot be expected directly after graduation, and to the question how much supervision is required, directly after graduation and in the more distant future, to become a professional. This study aims to provide insight into recently graduated veterinarians' perceptions of their readiness for independent practice in the first year after graduation. The concept of EPAs^{25 26} was used to explore these perceptions of readiness together with levels of satisfaction about received guidance and related challenges.

Methods

Setting

The study was conducted among newly qualified veterinarians who graduated from the Faculty of Veterinary Medicine, Utrecht University (FVMU), the Netherlands. The FVMU is the only institution in the Netherlands that provides veterinary education. The faculty has three training streams: companion animal health, equine health and farm animal health. Clinical education (after a three-year bachelor programme) is mainly organised in clinical settings, consisting of a clinical rotation programme (years 1 and 2) and a track (year 3) period. The uniform period comprised general clinical clerkships for all animal species and a specific clinical clerkship for the species of choice.

Participants and procedure

A survey study was conducted to explore recently graduated veterinarians' perceptions of readiness to work independently and their day-one required supervision level (see [table 1](#)). The survey also included items on participants' satisfaction with the guidance received and on early career challenges encountered while performing the EPAs. The target population (n=378) comprised all veterinarians who graduated

The expanded entrustment and supervision scale*	Adaptations used in the current study
1. Not allowed to practise EPA.	
1a. Inadequate knowledge/skill; not allowed to observe. 1b. Adequate knowledge, some skill; allowed to observe.	
2. Allowed to practise EPA only under proactive, full supervision.	
2a. As coactivity with supervisor. 2b. With supervisor in room ready to step in as needed.	1. Execution of the task with direct, proactive supervision.
3. Allowed to practise EPA only under reactive/on-demand supervision.	
3a. With supervisor immediately available, all findings and decisions double-checked. 3b. With supervisor immediately available, key findings and decisions double-checked. 3c. With supervisor distantly available (eg, by phone), findings and decisions promptly reviewed.	2. Execution of the task under reactive/on-demand supervision with supervisor immediately available, all findings and decisions double-checked. 3. Execution of the task with reactive supervision, on request and quickly available, findings and decisions promptly reviewed.
4. Allowed to practise EPA unsupervised.	
4a. With remote monitoring (eg, next day check-in for learner questions). 4b. Without monitoring.	4. Execution of the task with supervision at a distance and/or post-hoc and with remote guidance (eg, next day check-in for learner questions). 5. Execution of the task unsupervised without guidance.
5. Allowed to supervise others in practising the EPA.	

*See Chen *et al.*²⁴
EPA, entrustable professional activity.

in the Netherlands between March 2015 and March 2018. The target population is carefully selected to a maximum of three-and-a-half year after graduation, as newly graduates will remember the most accurate details of the first day in clinical practice. Before the survey, the veterinarians were introduced (by email) to the objectives and purpose of the study. Data were collected in June and July 2018 through an electronically administered survey (using SurveyMonkey). Two reminders were sent.

EPA selection process

To make the survey manageable for the participants, a maximum of five EPAs was deemed to be sufficient. The length of a questionnaire is important because it can directly affect response rates and data quality. To select appropriate EPAs recently graduated veterinarians frequently encounter in primary veterinary practice, the question '*Name three clinical tasks essential to be mastered by any graduated veterinarian, as expected by a veterinary employer, patient owner (or farmer) and colleagues*' was sent out to 25 veterinarians (maximum of five years after graduation), of whom 23 answered the question. These 25 veterinarians were at a maximum of five years after graduation and working in primary veterinary companion animal, equine or farm animal clinics. This resulted in a list of five EPAs mentioned most often:

1. Management of a digestion problem of an individual patient, including differential diagnosis, diagnostic plan and treatment.
2. Management of a circulation problem of an individual patient, including differential diagnosis, diagnostic plan and treatment.
3. Execution of a common minor surgical procedure (eg, castration).
4. Obtaining a blood sample in the presence of the patient owner, for further diagnosis and interpretation of the results.
5. Execution of an obstetrical delivery, including instruction of the patient owner.

To decrease the difference in interpretation of the EPAs, the participants were asked to think about common cases within their specialty of expertise.

Pilot and survey

The survey questions were Likert scale-type questions.²⁹ The first section aimed to obtain demographic information about the participant, such as age, work experience and gender. The second section was designed to assess the participant's perception of readiness at graduation. A common entrustment and supervision scale as applied in medical education³⁰ was adapted by the research team to comply with early graduates' perceptions of readiness to perform the EPA (see [table 1](#)). The participants had to score their own day-one after graduation levels per EPA, indicating how much supervision they thought they would need when performing the EPA. In addition, the participants were asked to mention the number of months it took them to

reach level 4 (supervision at a distance and/or post-hoc and with remote guidance) and level 5 (execution of the task unsupervised without guidance). Third, their satisfaction with the supervision received in their early career was surveyed on a 5-point Likert scale (1: poor supervision; 5: excellent supervision). Of note, levels of supervision used were an adapted form of the common entrustment and supervision scale numbers.³⁰

A pilot study was conducted to test the survey in a small sample of five newly qualified veterinarians, who were not included in the survey population. This revealed some spelling errors, ambiguous questions and other minor errors that could hamper completion of the survey.³¹ The final survey was corrected and adjusted after this pilot.

Data analyses

Descriptive statistics were used to analyse the data. The percentage of respondents indicating the perceived level of supervision needed at day one and the mean scores and standard deviations concerning the time it takes before participants felt capable to perform each of the five EPAs at level 4 and level 5 (in months; according to the survey participants) were calculated. Furthermore, participants' satisfaction with the guidance during their first year in clinical practice was evaluated with a single question.

Results

In total, 156 veterinarians responded to the survey (response rate 41.2 per cent). Of the participants, 6.5 per cent (n=10) had never been in practice; for them, the survey terminated automatically. In addition, 5.8 per cent (n=9) continued their career outside clinical practice. The data from these participants were still useful because they had experienced day-one practice and could therefore assign a level to their own ability (before they left clinical practice) to perform the EPA at level 4 or 5. The response rate may be an underestimation, as it appeared that some veterinarians possibly never received the questionnaire; it is unknown exactly how many. The respondents had, on average, 20.7 months (range 3–42 months) of experience in clinical practice. The mean age of the participating veterinarians was 27.48 (sd 2.10) (range 24–34 years). The gender distribution was 83 per cent female and 17 per cent male. Almost two-thirds (63 per cent) were working for a first employer, while 37 per cent had shifted from one practice to another.

Perceptions of readiness towards EPAs

For an overall view of perceived early graduates' readiness, see [table 2](#). The perceived day-one levels varied per EPA between 'with direct, proactive supervision' and 'supervision at distance and with remote guidance'. After 6.83 months on average, participants felt ready to execute all five tasks at level

Table 2 Average number of months since graduation before participants reached level 4a* and 4b†, respectively

	% of respondents indicating level 4a or 4b at graduation as day-one level (level 4b)	Months after graduation when level 4a was reached, mean (sd)	Months after graduation when level 4b was reached, mean (sd)
1. Management of a digestion problem of an individual patient.	36.3 (1.5), n=135	2.37 (2.9), n=131	5.58 (4.8), n=124
2. Management of a circulation problem of an individual patient.	43.7 (4.8), n=126	2.88 (3.6), n=122	5.85 (5.3), n=117
3. Execution of a common minor surgical procedure.	1.6 (0.0), n=125	6.83 (6.5), n=103	9.04 (7.2), n=98
4. Obtaining a blood sample for further diagnoses and interpretation of the results.	72.8 (38.4), n=125	1.00 (1.7), n=124	2.45 (3.2), n=124
5. Execution of an obstetrical delivery, including guiding and assuring the patient owner and giving advice.	19.35 (0.8), n=124	6.54 (7.5), n=108	9.70 (8.5), n=97

There is variation in 'n' per EPA. When participants did not yet feel ready to perform the EPA at level 4a or 4b, he or she filled in '-' or 'not applicable'. Sometimes participants filled in an imaginary level of the EPA (in the future) because the months of working were less than the months in the answer. In this case the answer was removed from the data.

*Supervision at a distance and/or post-hoc and with remote guidance.
†Execution of the task unsupervised without guidance.
EPA, entrustable professional activity.

4. After almost 10 months on average, participants felt fully competent to execute all five EPAs unsupervised, that is, at level 5 in the adapted scale.

Satisfaction with guidance

The majority (60 per cent) of respondents evaluated the early career supervision as sufficient or excellent (see table 3).

Discussion

The aim of this survey study was to gain insight into recently graduated veterinarians' perceptions of readiness to perform professional activities (EPAs) after graduation, their evaluation of the received guidance and the challenges encountered during a phase of transition into clinical practice. The results of this study provide insight in two different perspectives. The first perspective is the time it took recently graduated veterinarians to reach the level to perform an EPA with supervision at a distance and with remote guidance, and to execute an EPA unsupervised without guidance. The second is the perceived satisfaction of received guidance during the transition into clinical practice.

The participating newly qualified veterinarians needed almost a year to feel ready to execute critical professional tasks independently. The day-one required supervision levels varied per EPA between 'with direct, proactive supervision' and the feeling of being ready without supervision. For the more critical or difficult EPAs (minor surgery and obstetrical delivery; see table 2), participants still felt not ready to execute the task unsupervised without guidance after six months in practice. Concerning the perceived satisfaction of received guidance, 60 per cent of the participants evaluated early career supervision as good or excellent.

Table 3 Evaluation of satisfaction with guidance during their early career

Level of satisfaction	Respondents (%) (n=142)
Poor	2.84
Insufficient	12.06
Moderate	25.53
Sufficient	41.13
Excellent	18.44

This is in contrast to other studies reporting that large numbers of recently graduated veterinarians work with little supervision and without appropriate guidance from colleagues.^{2 4 32 33} Apparently, the need to provide appropriate supervision to newly graduated veterinarians is not widely acknowledged within the practice. A failure to provide requested supervision and guidance during the first year in clinical practice can lead to disillusionment and early attrition from the profession.³⁴ Newly qualified veterinarians have a strong preference for employment in veterinary practices with initial close mentoring and oversight.²²

Veterinary education, as well as other health professions' education programmes that provide a licence to contribute to healthcare at graduation, may be viewed by many as an adequate and sufficient preparation for unsupervised practice.^{35 36} Given the breadth of expected competencies and the challenges practice provides, 'readiness for practice' appears to be a concept that needs to be nuanced. Practice at 'day-one' is not the same as practice at 'day-200'.³⁷ Using representative EPAs identified as core educational objectives suggests that they should be mastered at an expected level of 'without guidance'. The fact that not all standards of graduation are attained completely at graduation does not necessarily devalue veterinary training. Educators, employers and the public should be aware that education and learning in the health professions does not stop at graduation or licensing (and even specialty certification), but requires active monitoring and guidance after the transition to practice.³⁸

Recommendations for practice and future research

Many newly qualified veterinarians experience a gap between education and veterinary practice. From other professions it is known that much of professional workers' learning happens in the workplace.³⁹⁻⁴³ Experiential education is vital in enhancing the preparation and success of learners and bridges the gap between career expectations developed in the classroom and the reality of employment.⁴⁴ Adopting

EPAs and supervision specifications can highlight and potentially narrow this gap, enhancing patient safety and increasing confidence in the care these newly qualified professionals provide in the first months after graduation.⁴⁵ The attainment of EPAs may help to justify decisions to delegate tasks or to reconsider the appropriateness of delegation to newly qualified veterinarians in light of patient safety.^{45 46} Experience with the EPA concept is yet limited, as many programmes are in transition to using EPA and only few have graduates from EPA-based programmes.⁴⁷ More studies are needed to determine whether and how EPAs can contribute to improvements in training. When every recently graduated veterinarian enters the profession with a clear set of EPAs for which an adequate level of supervision is specified and assessed, employers, together with the newly qualified veterinarians, can specify the need for supervision and coaching in the first year after graduation.

Strengths and limitations

The present study has limitations which need to be considered while interpreting the results. This study was performed in one country with graduates from one vet school, which limits the generalisability of findings. Not all respondents completed the entire survey, which resulted in lower response rates for some questions. Another limitation is the possibility that respondents may have had difficulty thinking back up to three-and-a-half years. However, given the challenging nature of the transition period, it is also possible that the new graduates remembered details of their first steps in clinical practice accurately. The gender distribution (83 per cent female) appears skewed, but is comparable with that in veterinary schools in the Netherlands and the UK.³⁹

Conclusion

In conclusion, this study emphasises the importance of adequate preparation of veterinarians during education, but also the importance of guidance during the first year after graduation to foster a successful transition from veterinary school to clinical practice. Accurate and up-to-date information about the readiness for independent practice for both the recent graduate and the employer is of crucial importance to smoothen the transition and to optimise the curriculum.

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Competing interests None declared.

Ethics approval The study was approved by the Ethical Review Board of the Netherlands Association for Medical Education (NVMO-ERB, report number 1034). Participation was voluntary and participants were assured of confidentiality (informed consent) and anonymity. Written informed consent was obtained from all participants of the survey.

Data availability statement All data relevant to the study are included in the article. No data are available.

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