

ORIGINAL RESEARCH

Dutch veterinary graduates leaving practice: A mixed-methods analysis of frequency and underlying reasons

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Abstract

Background: This study aimed to evaluate the frequency of veterinarians graduated between 2009 and 2019 in the Netherlands leaving practice, their reasons for leaving and the relative importance of these reasons.

Methods: Study 1 (focus group sessions, $n = 14$) of this project was aimed at defining the reasons Dutch veterinarians have for leaving veterinary practice within 10 years of graduation. In study 2, the frequency of veterinarians leaving veterinary practice and the relative importance of the reasons for leaving identified in study 1 were investigated through a cross-sectional digital survey. A career in veterinary practice was defined as working in first- or second-line veterinary practice. Leaving practice was defined as ending employment in veterinary practice.

Results: The results of study 1 yielded 20 reasons given by veterinarians to leave veterinary practice within 10 years of graduation. One of the reasons obtained by this study was not mentioned in literature before: leaving veterinary practice as a pre-planned career path. Study 2 demonstrated that the mean percentage of respondents from graduation years 2009 to 2014 who left practice within 5 years of graduation was 16.8%. The most important reasons respondents gave for this career move were poor work–life balance, excessive workload, insufficient remuneration and perceived lack of employer support. **Conclusion:** A substantial number of veterinarians leave veterinary practice within 5 years of graduation. The most important reasons for this decision are excessive job demands or insufficient job resources. Furthermore, these reasons are a result of negative experiences regarding organisation of work, management and remuneration.

INTRODUCTION

Retention of veterinarians in veterinary practice is a topic of growing interest, partly due to the expectation that the demand for veterinary care will keep increasing over the coming years.¹ In addition, there seems to be a growing shortage of veterinarians; veterinary surgeons were added to the Shortage Occupation List in the UK in 2019.² Retention of veterinarians in farm animal practice has been identified as a key issue for the sustainability of veterinary businesses and livestock health.^{3,4}

The imbalance between the supply and demand of veterinary labour seems to be caused by a

growing demand for veterinary services in combination with a limited influx of graduated veterinarians and premature outflow from the profession because of ill-defined reasons. This creates a supply–demand gap, which leads to a higher workload for veterinarians. One way to prevent this gap from growing is to better understand turnover and veterinarians' reasons for leaving veterinary practice.

Turnover intention

Over the past decade, these supply and demand concerns have resulted in a substantial amount of

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research into veterinary turnover, veterinary turnover intention and motives for veterinarians to leave veterinary practice in the UK. The periodic 'Survey of the Veterinary Profession', carried out on behalf of the Royal College of Veterinary Surgeons, revealed that most respondents (79%) intended to stay in the profession for the foreseeable future, 11.5% intend to retire at some point over the next 5 years and 9.5% intend to leave the profession at some point over the next 5 years for reasons other than retirement.⁵ Remarkably, respondents who planned to leave the profession for reasons other than retirement had notably lower average wellbeing scores than those who planned to retire or stay within the veterinary profession. Another online questionnaire of veterinary employees and employers in the UK investigating factors contributing to leaving/staying in current employment and the profession showed that 43.7% of the respondents stated that they were likely or very likely to leave their employment within 2 years.⁶

In the Netherlands, too, there are reported long-term vacancies in the government, and also in private veterinary practices.⁷ Dutch veterinarians have several different job opportunities. For instance, employment in private practice (small medium enterprise or large corporate), with the government (certification), research and educational institutes or industry.¹ There are also rumours that up to half of the graduates, after an initial start in veterinary practice, leave within 5 years to work in other veterinary professional fields. Figures from the Dutch mandatory pension fund do not confirm these rumours. According to the figures from the veterinary pension fund, approximately 3650 veterinarians were working in veterinary practice in the Netherlands in 2015. In 2019, this number had increased to approximately 4200. This seems to be a substantial increase, but a possible growth of part-time working veterinarians can explain the actually perceived shortage of veterinarians in practice.⁸

Causes for veterinary turnover

In the United States, work pressure and increased levels of stress and burnout complaints are found among—especially female—veterinarians.⁹ Numerous studies have been conducted in the last decade about stress and burnout within the veterinary profession.^{10–15} The literature in the domain of work and organisational psychology shows that stress and burnout are positively related to increased turnover intention.^{16–18} On the other hand, work engagement is negatively associated with the intention to leave.^{16,19}

In the UK, the most frequently cited reasons for considering leaving the profession in several studies were poor work–life balance, not feeling rewarded/valued (non-financial), poor management, low salary, long/unsocial hours and chronic stress. Veterinarians who were recently qualified, on lower salaries or female were more likely to plan to leave.^{5,6} When looking at farm animal veterinarians more

specifically, Adam et al.²⁰ found that choosing to give up farm work was influenced by both personal and professional circumstances and related frequently to management issues in practice. Some examples of management issues named by the respondents were lack of flexibility or understanding of employees facing challenging personal circumstances, a sense of not feeling appreciated or even bullying from employers.

Research among veterinarians in the Netherlands shows that only one in seven recently graduated veterinarians perceive themselves as highly engaged, which in itself can be a reason to look for other professional opportunities.²¹ The transition from university to veterinary practice is experienced as a period of rapid personal and professional development, accompanied by elevated stress levels and negative emotions.^{22,23} The same applies to doctors working in the health-care sector, and this could be a trigger for leaving the profession and drop-out.²⁴ However, apart from a negative interpretation due to increased stress levels, the transition period can also be interpreted positively as challenging, full of learning opportunities and opportunities for high performance.²⁵

The main reasons for veterinarians to change jobs or consider a job change as extracted from relevant studies in Northern America, Australia and the UK are as follows^{6,26–30}:

- content of the job,
- dismissal or discontinuance of the employment contract,
- excessive workload,
- insufficient remuneration,
- lack of development opportunities,
- lack of preparation for veterinary practice during education,
- location reasons,
- low collegiality between colleagues,
- physical working conditions,
- poor management,
- poor work–life balance.

The job demands-resources model

When motives for leaving veterinary practice are investigated, factors known to be negatively related to wellbeing should be considered (as reduced wellbeing in a work situation can be a factor in considering another job). Earlier published work by Bakker and Demerouti³¹ has sought to categorise work characteristics. The psychological job demands–resources (JD-R) model distinguishes between demands and resources. Job demands refer to those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with certain physiological and/or psychological costs.³² Job resources refer to those physical, psychological, social or organisational aspects of the job that are functional in achieving work goals, reduce job demands

and the associated physiological and psychological costs, or stimulate personal growth, learning and development.^{31,33} With JD-R theory, it is possible to understand, explain and make predictions about employee wellbeing, job performance and turnover.

Study objective

Hagen et al.⁶ found that 17.2% of veterinarians were considering leaving the veterinary field or taking a break, and 31.7% of this group had potential plans to look for different work in the veterinary field. However, little research has been conducted to differentiate between a job change within the same work domain (i.e., first- or second-line veterinary practice) and a job change that implies a search for work outside of veterinary practice. Additionally, no research has been performed on the actual leaving frequency of recently graduated veterinarians. Lastly, to the knowledge of the authors, the JD-R model has not previously been used to categorise the reasons that veterinarians have for leaving veterinary practice.

Therefore, the aim of this project is to answer the following research questions:

1. What reasons do Dutch veterinarians have when leaving veterinary practice within 10 years of graduation?
2. What is the relative importance of these reasons?
3. What is the frequency of Dutch veterinarians leaving veterinary practice within 5 years of graduation?

MATERIALS AND METHODS

Procedure

A mixed-methods sequential exploratory design has been used for this research.³⁴ The aim of study 1 was to construct an extensive list of reasons that Dutch veterinarians have when leaving veterinary practice within 10 years of graduation. For study 1, the data were collected in three face-to-face focus group sessions that took place in February 2020. The focus groups were facilitated by Yvonne Goverts. The researcher did not share any personal motivations with the participants prior to the focus group sessions. The purpose of the focus groups was to gain all the reasons why veterinarians could potentially leave veterinary practice. To achieve this, the focus group sessions consisted of three parts: the introduction, the open discussion on the basis of a predefined structure and interview guide and finally a pre-composed list of reasons to stop working as a veterinarian was introduced into the discussion. The pre-composed list was made on the basis of a literature review. Each session took 1 hour 30 minutes. The sessions were audio-recorded with consent from the participants, and field notes were also made by a note-taker. After the third session, no new information was discovered in the data analysis; thus, data saturation was achieved and no subsequent sessions were required.

The aim of study 2 was to gain more insight in the frequency of Dutch veterinary graduates leaving veterinary practice within 5 years postgraduate and the most important reasons they have for this career move. For this aim, a cross-sectional survey was performed in February 2020. The online digital survey (www.surveymonkey.com) was open for submission in March 2020. Incentives for participants were contributing to science and that three randomly drawn participants would receive a gift card. The questionnaire was composed of 36 items concerning demographic information (gender, year of birth, year of graduation, specialisation), career path and the cumulative number of years that the participant has worked in veterinary practice. No validated surveys to determine the relative importance of these reasons in relation to each other are available.

The relative importance of the reasons for the decision to leave veterinary practice that were obtained from the focus group sessions was assessed using a combination of a ranking question ('Please indicate below which reasons were decisive for you to quit working in veterinary practice, point out a maximum of five reasons and rank them in order of importance') followed by a rating question ('The following reasons to quit working as a general practitioner were important in my decision'). Only participants who described leaving veterinary practice in their career path were asked to answer these ranking and rating questions. The reasons that were ranked in the top five of each respondent were scored in accordance with the position: reasons at position 1 were assigned 5 points, position 2—4 points, position 3—3 points, position 4—2 points and position 5—1 point. The scores from each respondent were added to create an overall ranking of the reasons. In the rating question, participants rated their agreement on a five-point Likert scale (1—strongly disagree; 5—strongly agree).

A major disadvantage of using a ranking method in study 2 is the inability to determine the absolute importance of the reasons. Meanwhile, a disadvantage of the rating method is that respondents often cluster their scores within a narrow range, creating a uniform set of data.³⁵ By combining a rating and a ranking method, the most important disadvantages from both methods are mitigated. McCarty and Shrum³⁶ have shown that using the ranking method before applying the rating method leads to more differentiation in the rating question. The order of the reasons was randomised between participants to prevent order effects.

Finally, participants were asked whether they thought that some reasons were missing in the list and to state the missing reason(s).

Populations and sample methods

For both studies 1 and 2, convenience sampling was used. The respondents were recruited via messages on social media, in professional journals and via email from the Utrecht University's alumni office

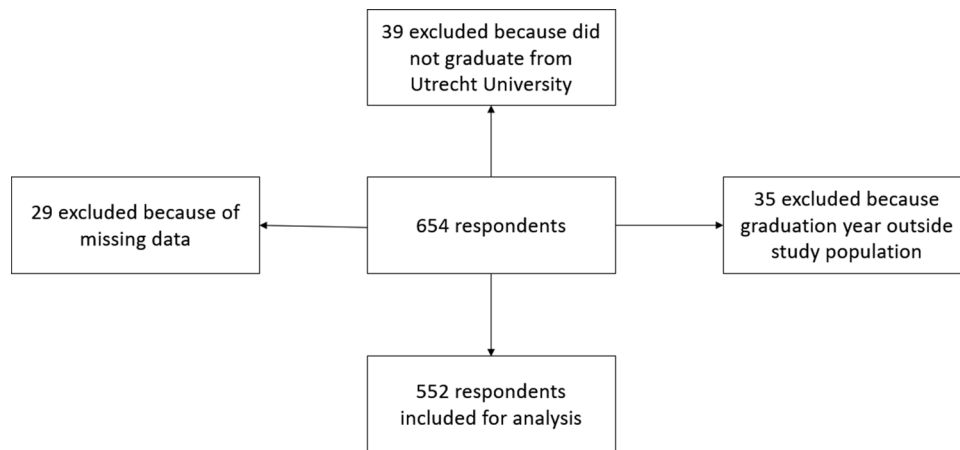


FIGURE 1 Flow chart illustrating process of participant inclusion

(1406 alumni reached via email). Potential participants confirmed prior to the study that they met the inclusion criteria.

Participants for study 1 were selected out of a population that is defined as follows: ‘all veterinarians who graduated from the Faculty of Veterinary Medicine in Utrecht between 2009 and 2019, who started their career in a veterinary practice and ultimately left veterinary practice within 10 years of graduation’. A career in veterinary practice was defined as working in first- or second-line veterinary practice—positions with the government or university were not included. Leaving practice was defined as ending employment in veterinary practice.

Participants included for study 2 were Dutch veterinarians who graduated from Utrecht University between 2009 and 2019. A total of 590 veterinarians completed the survey and 552 were found to match the criteria for inclusion (see Figure 1). Only fully completed surveys were analysed.

Qualitative data analysis

All focus group conversations were audio-recorded. The tapes were used to draft transcripts that were analysed using the software program QDA Miner Lite. The unit of analysis is defined as text units providing information on the reasons of veterinarian leaving practice. These units were coded axially using the open method. The basis for the coding was formed by the categories extracted earlier in a literature study. If it was not possible to place an item under these categories, a new category was created. Finally, selective coding was applied to establish interrelationships between the data.

A researcher who played no role in the focus group sessions (Danse Sonneveld) coded and categorised the data and a second researcher (Chantal Duijn) coded and categorised one-third of the transcripts. To minimise subjective interpretation of the data, the coding and categorisation of both researchers were compared. Inter-rater reliabilities above 80% are con-

sidered satisfactory.^{37–39} The points on which they had a different opinion were discussed, after which the researchers came to an agreement and the first researcher completed the process of coding and categorisation.

After the list of reasons was obtained, the reasons were classified as excessive job demands or insufficient job resources, following the definitions by Bakker and Demerouti,³¹ by two researchers (Nicole Mastenbroek and Danse Sonneveld).

Quantitative data analysis

The survey data were exported from SurveyMonkey and loaded into R (www.R-project.org/). Reported values for the descriptive statistics pertain to mean \pm standard deviation unless stated otherwise. Deviation from the expected (neutral) score of 3 on the Likert scale in the rating question was assessed by means of a one-sample *t*-test. Effects of factors on the decision to leave veterinary practice were assessed by means of a logistic regression, with age as a continuous and gender and study direction included as factors. A *p*-value below an α of 0.05 was deemed significant.

RESULTS

Study 1

Reasons to leave veterinary practice

Nineteen veterinarians were registered for the focus group sessions; however, five of them had to cancel their registration due to practical reasons or did not show up at the sessions. Therefore, 12 veterinarians from the research population participated in the focus group sessions, with four in each focus group session. In addition, two veterinarians who started their career outside veterinary practice participated in sessions 1

TABLE 1 Scores obtained by ranking reasons for leaving practice

	Reason	Job demand/job resource/other	Score
1	Poor work–life balance	Excessive job demand	200
2	Insufficient challenge	Insufficient job resource	138
3	Insufficient development opportunities	Insufficient job resource	133
4	Insufficient remuneration	Insufficient job resource	124
5	Excessive workload	Excessive job demand	120
6	Lack of mentorship	Insufficient job resource	116
7	Bad experience with animal owners	Excessive job demand	87
8	Location reasons	Other	86
9	Low perceived collegiality	Insufficient job resource	85
10	Lack of preparation for veterinary practice during education	Insufficient job resource	69
11	Little influence on the organisation	Insufficient job resource	57
12	Excessive physical load	Excessive job demand	48
13	Lack of support by the employer	Insufficient job resource	37
14	Dismissal	Other	30
15	Working with other than preferred animal species	Excessive job demand	29
16	Discontinued employment contract	Other	22
17	Lack of possibility to become practice co-owner	Insufficient job resource	17
18	Moral dilemmas	Excessive job demand	15
19	Insufficient quality or availability of equipment	Insufficient job resource	12
20	Pre-planned career path	Other	8

and 3. Due to the explorative nature of this research, these veterinarians were allowed to participate.

Ten females and four males participated. Four graduated with small animal, seven with farm animal and two with equine focus. The mean age was 32.4 ± 3.6 years. During the three focus group sessions, 20 reasons to leave veterinary practice were mentioned one or more times by the participants. One of the reasons mentioned by the focus group participants was not mentioned in the studies used to draft a list of reasons. This reason was that leaving veterinary practice was a pre-planned career path. After collecting a list of reasons in the focus group sessions, the reasons were classified as excessive job demand, insufficient job resource or other. The list of reasons with classification is shown in Table 1. Corresponding quotes from the focus group session transcripts are included in Appendix 1.

Study 2

With a target population of 2014 veterinarians who graduated during the period 2009–2019, as reported by Utrecht University, roughly 27% of the theoretical total population participated in the questionnaire ($n = 552$). Respondents had a mean age of 32.6 ± 4.1 years. Of these respondents, 53% graduated within companion animal health, 30% farm animal health, 15% equine health and 1% had another focus area. Eighty-four percent of the respondents were female and 16% were male. This distribution is comparable to the total research population.

Career trajectories

Out of 552 survey respondents, 502 respondents (90.9%) started a career as a veterinary practitioner after graduation. Of these 502 respondents, 382 (76%) have continued working in veterinary practice to date. See Figure 2 for a complete overview of career trajectories.

Leaving veterinary practice

The mean amount of time from graduation till leaving practice was 3.6 ± 2.4 years. Table 2 shows the percentage of respondents who left practice within 5 years of graduation for each graduation year. The mean frequency of leaving practice within 5 years was 16.8% for the graduation years 2009–2014.

The survey data showed that, from the 20 possible reasons for leaving veterinary practice, four reasons had a mean score significantly higher than that of 3 (the neutral score): poor work–life balance (3.8 ± 1.1), insufficient remuneration (3.6 ± 1.1), excessive workload (3.6 ± 1.3) and lack of support by the employer (3.3 ± 1.3). For an overview of the results obtained by rating the 20 potential reasons for leaving veterinary practice, see Figure 3.

Table 1 shows an overview of the 20 reasons obtained from the focus group sessions, the classification in job demands and job resources, and the overall scores and rank of the suggested reasons for leaving practice. For work–life imbalance (position 1), insufficient remuneration (position 4) and high

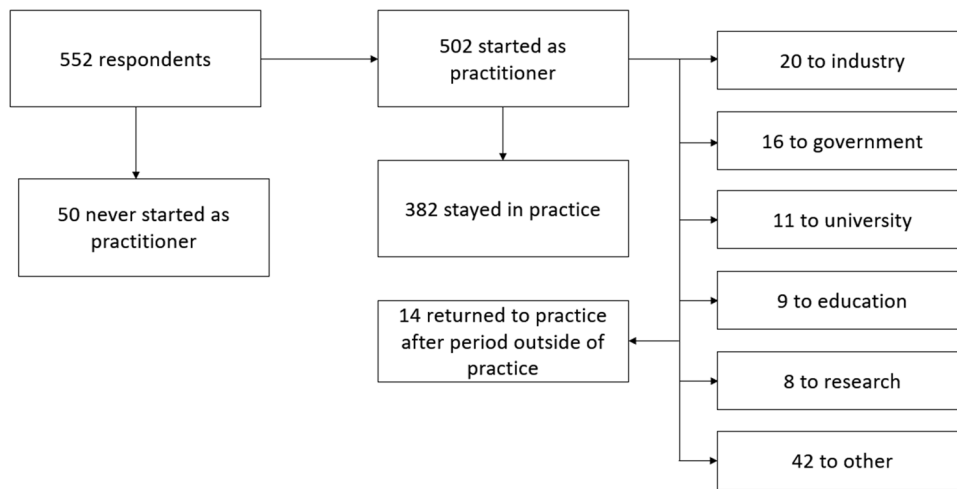


FIGURE 2 Flow chart of participants' career trajectories

TABLE 2 Percentage of veterinarians leaving practice within 5 years of graduation for each graduation year

Graduation year	2009	2010	2011	2012	2013	2014
Respondents still working in veterinary practice 5 years after graduation, <i>n</i> (%)	39 (85%)	34 (89%)	32 (82%)	49 (82%)	74 (84%)	43 (77%)
Respondents who left veterinary practice within 5 years of graduation, <i>n</i> (%)	7 (15%)	4 (11%)	7 (18%)	11 (18%)	14 (16%)	13 (23%)
Total number of respondents, <i>n</i>	46	38	39	60	88	56

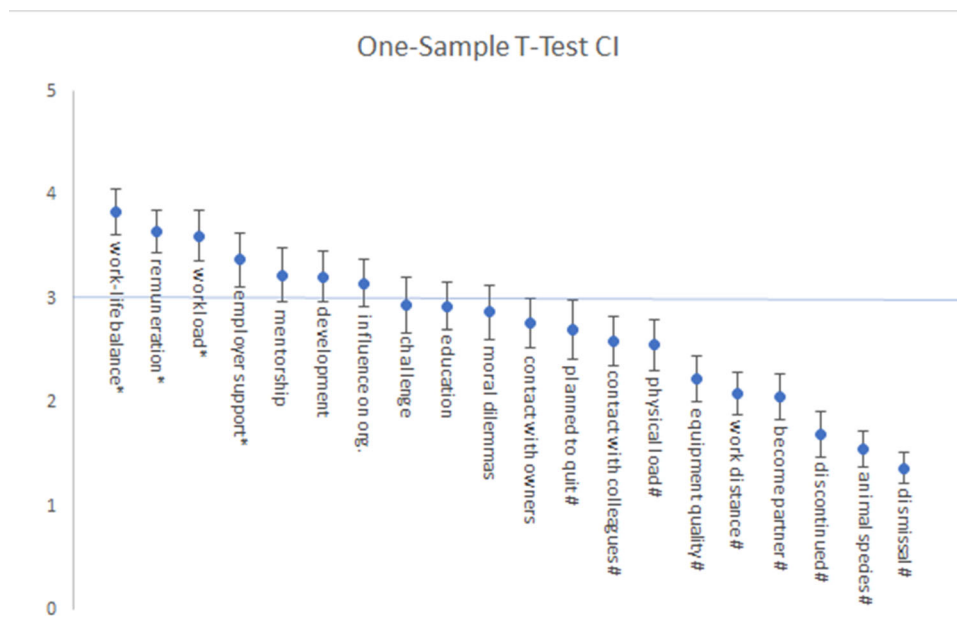


FIGURE 3 Confidence interval (CI) scores of reasons for leaving veterinary practice. Reasons marked with '*' had a score significantly higher than 3.0 (the neutral score), the reasons marked with '#' had a score significantly lower than 3.0. The unmarked reasons showed no significant difference from 3.0.

workload (position 5), the results obtained by rating were confirmed by respondents when they were asked to rank the most important reasons. Though rated on position 4, participants ranked 'lack of support by the employer' on position 13. Two of the reasons that showed no significant difference from the neutral score did have a high position when

ranked: insufficient challenge (position 2) and development opportunities (position 3). Two reasons were added by respondents in the 'other' text box: development of animal-related allergies and the difficulty of combining a part-time job in veterinary practice with other employment. All respondents gave more than one reason to leave veterinary practice.

Demographic factors affecting likeliness to leave veterinary practice

Regression analysis showed no effect of gender on whether the veterinarian in question left veterinary practice, and a significant positive odds ratio for those who were trained as a companion animal veterinarian (1.3, $p = 0.041$).

DISCUSSION

The aim of this study was to better understand why veterinarians leave practice during the first years of their career. There is a growing shortage of veterinarians in veterinary practice, and though there are anecdotal reports of veterinarians leaving practice within a short period after graduation, to the knowledge of the authors, there is no systematic research available into the actual numbers of veterinarians leaving practice and the reasons for doing so. Our interviews identified a reason that was not mentioned in literature before: leaving veterinary practice was a pre-planned career path. Secondly, we gained insight in the frequency of Dutch veterinary graduates leaving veterinary practice within 5 years of graduation and the most important self-reported reasons they have for this career move. A large majority of graduates start in practice, and a substantial group of about one-sixth of these practitioners leave practice after about 3.5 years. The decision to leave practice was not related to gender in our data. The most important reasons respondents gave for this career move were poor work–life balance, excessive workload, insufficient remuneration and perceived lack of support from the employer.

The most important factors from this research may play a role for a large group of recent veterinary graduates. However, because all 20 proposed reasons for leaving practice were identified in the focus group sessions, we might assume that some reasons for leaving practice, which according to our data are of minor importance, can play a big role for an individual. It is important to note that the participants gave a number of distinct reasons to leave veterinary practice. In addition, the main reasons differ per person. Because the main reasons for the decision to leave veterinary practice differ per person and because in most cases multiple reasons are involved, it is unlikely that there is a single measure that can solve this problem.

The four most important reasons to leave practice are already identified in the field of human resource management (HRM) as areas where job satisfaction and organisational commitment can be improved to increase retention.⁴⁰ In the following sections, the four main reasons to leave practice will be discussed and illustrated by citations from the focus group sessions. The first main reason to leave practice was a poor work–life balance:

‘Combining family with out of office hour duty and a 40-hour work week was impossible. Working part-time

was not negotiable. In the end I left veterinary practice completely’. [FG2Vet4]

Though several decades of research on the relationship between work–life and nonwork–life roles have uncovered various mechanisms affecting the extent to which these domains are enriching, depleting or both, it is still unknown if these results can be applied to improve work–life balance in the veterinary field.⁴¹ The second reason was an excessive workload:

‘We got more and more customers, but the work had to be done with fewer veterinarians. I thought I should persist not to burden my colleagues, but I was under a lot of stress at the time’. [FG3Vet4]

Working conditions are, among other factors, determined by the workload and play an important role in the amount of job satisfaction and retention of employees.⁴⁰

Another important reason was insufficient remuneration:

‘Veterinary education is not easy and you learn a lot. When you step into practice, you notice that the financial reward does not outweigh the investment you made during college’. [FG1Vet1]

While remuneration is generally viewed as a lower order, hygiene need, Winterton⁴⁰ stresses that it is important to maintain adequate remuneration levels, especially among high performers, for whom the costs of replacement are particularly high.

The last important reason was a lack of support from the employer:

‘I noticed that I went to work more and more reluctantly. When I indicated it was not going quite well, that was not accepted at all. Sick leave was not accepted either, it was a very tedious process to eventually be able to leave the practice’. [FG2Vet3]

In the field of HRM, studies have indicated that perceptions of supervisor support are related to increased levels of perceived organisational support, decreased turnover intention and increased extra-role behaviour.^{42–44}

The lack of a gender effect in our findings does not align with the finding that female veterinarians might be more likely to leave veterinary practice due to higher reported stress and family reasons than their male colleagues.⁴⁵ The lack of gender effect may have been caused by the sample in combination with the skewed ratio between the number of female (84%) and male (16%) respondents, though the ratio of female to male respondents does correspond with the ratio in the total population.

The results of this research show a big overlap with the reasons veterinarians have for (intending to) changing jobs according to studies from the UK, Canada and Australia.^{6,26–28,30} All the categories known from previous studies were mentioned by the participants of the focus groups. This confirms that the reasons that this small group of Dutch veterinarians had, not only for changing jobs but also for leaving the veterinary profession, comply with results from previous studies. Only one reason was, to the authors' knowledge, not described in other literature on this

subject: leaving veterinary practice as a pre-planned career path. The argumentation for the participants to plan a limited time in veterinary practice beforehand were that they, for instance, wanted to pursue a corporate or research career. They recognised that experience as a general practitioner was valuable to get to know the veterinary sector and the people and animals in it. Furthermore, they expected a future employer to favour applicants with experience as a general practitioner.

By looking at these reasons for leaving veterinary practice in light of an occupational stress model, one might be able to explain why veterinarians in different countries look for another job for the same reasons. The JD-R model helps us to understand, explain and make predictions about employee wellbeing (e.g., burnout, health, motivation, work engagement) and job performance.⁴⁶ According to the JD-R model, working conditions can be categorised into two broad categories, job demands and job resources, that are differently related to specific outcomes. The reasons for leaving practice appear to be a combination of high job demands that promote stress and burnout and limited job resources that prevent people from engaging with work and instead direct them into the health impairment process. Though the reasons for leaving can be largely classified as either job demands or resources, some reasons did not fit the classification: dismissal, discontinuance of the employment contract, location reasons and pre-planned career path. This suggests that reasons outside of the JD-R model should also be considered.

A meta-analysis by Crawford et al.⁴⁷ showed that a positive association exists between job demands and burnout, whereas job resources and burnout are negatively associated. Because burnout relates to increased job turnover, their findings support the importance to reduce job demands and increase job resources in order to lower the chance of burnout and increase retention in the veterinary profession.⁴⁸ In line with these results, Mastenbroek et al.²¹ showed that high job demands (such as excessive work-home interference and high workload) as well as a lack of job resources (such as superior support and opportunities for professional development) were among the strongest predictors of exhaustion in Dutch veterinarians between 0 and 10 years after graduation. This is fully in line with the results of the current study in which, again, a poor work-life balance, excessive workload and a lack of support by the employer were identified as the most important reason for leaving the practice. The prevalence of burnout among Dutch veterinary professionals is 14% within the first 10 years of graduation, and 18% within the female respondents in their first 5 years after graduation.⁴⁹ These numbers underscore the importance of job demands and resources in job turnover in the veterinary field.

In this project, the focus lies mainly on negative aspects of the profession that could result in leaving veterinary practice. Some of the respondents suggested a more positive view on the subject when they

were asked if they thought the list of 20 reasons was incomplete. One of the respondents stated: 'Working outside of veterinary practice can simply also be very fun and challenging'.

The number of graduates who start their career as a general practitioner (90.9%) is higher compared to the results from a previous survey among Utrecht University graduates that show 77% of respondents graduated between 1999 and 2009 were working in a veterinary practice.²¹ This could be due to the difference in recruitment text and distribution channels, which could have resulted in a higher number of practitioners who responded.

Strengths and limitations

To the knowledge of the authors, no other research has been done to specifically determine the percentage of recent graduated veterinarians who leave veterinary practice. Some studies give an indication of the number of veterinarians who switch to another animal species.^{28,49} Other studies focus on the intention to leave employment rather than leaving veterinary practice,^{5,6,30} though there is no full correlation between turnover intention and actual turnover as shown by Cohen et al.⁵⁰

One of the limitations of this project was the impossibility to determine the sample frame due to the various distribution channels used. They also involved social media, which could lead into a coverage error, a lack of representation of the entire population, difficulties in identifying possible bias and the lack of possibility to generalise the research findings. Therefore, we must interpret the results with some caution, and it is clear that the results cannot be generalised to the entire research population.

Another limitation could be that two of the participants of the focus group sessions had not worked in veterinary practice. However, their responses did not affect the final results as they were mentioned by other participants as well.

A final limitation caused by using a ranking method is that no widespread statistical method to analyse these data is available. This might explain the differences found between the order of the reasons determined via ranking in comparison to rating. As a result, the rating data are deemed more reliable.³⁵

Future research

A suggestion for future research is to determine the importance of the reasons that showed no significant difference from the neutral score. Another suggestion for future research is to include 'leaving veterinary practice was a pre-planned career path', as well as the two additional reasons were added by respondents (development of animal-related allergies and the difficulty of combining a part-time job in veterinary practice with other employment), when assessing

reasons for turnover or for leaving veterinary practice. Furthermore, veterinary professional retention is a growing challenge not just in general practice but also in specific subfields, so further research could also focus on subfield retention.

CONCLUSION

Though most of the respondents started their career in veterinary practice, a substantial number of veterinarians leave veterinary practice within 5 years of graduation. The most important reasons respondents gave for this career move (poor work–life balance, excessive workload, insufficient remuneration and a perceived lack of support from the employer) confirm findings in earlier studies and show that reasons to leave veterinary practice are at least partially due to negative experiences. The research uncovered a novel reason for leaving practice, namely that, for some veterinarians, leaving veterinary practice can be a pre-planned career path. Because the main reasons for this decision differ per person and in every individual case there may be a combination of factors at play, it is unlikely that this problem will be solved by a single solution or policy. Prevention of attrition from veterinary practice requires tailored solutions to retain young professionals within the veterinary workforce. This research shows that veterinarians leave practice soon after graduation mostly due to negative and preventable experiences. Reducing job demands and increasing job resources should be a top priority within veterinary practice to empower veterinarians and contribute to reducing the veterinary shortage. More research on the reasons why veterinarians leave practice is crucial to contribute in prevention of this problem.

AUTHOR CONTRIBUTIONS

Roger Bougie, Yvonne Goverts, Nicole Mastebroek and Danse Sonneveld contributed to the design of the work. Yvonne Goverts and Danse Sonneveld acquired the data. Roger Bougie, Guido Camps, Chantal Duijn, Yvonne Goverts, Nicole Mastebroek and Danse Sonneveld contributed to data analysis and interpretation. Guido Camps, Yvonne Goverts, Nicole Mastebroek and Danse Sonneveld wrote the initial draft of the manuscript. All authors approved the final version of the manuscript and agree to be accountable for all aspects.

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CONFLICT OF INTEREST

The authors declare they have no conflicts of interest.

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DATA AVAILABILITY STATEMENT

Author elects to not share the qualitative data due to privacy restrictions. Quantitative data available on request from the authors.

ETHICS STATEMENT

Informed consent from the participants was obtained, explicitly stating that participation was voluntary and full confidentiality would be assured. Ethical approval was not required for focus group-based studies or questionnaire-based studies in the Netherlands at the time the study was conducted. The authors confirm that legal and ethical requirements have been met.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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