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Career aspiration in UK veterinary students: the influences of gender, self-esteem and year of study.

Abstract

It is widely reported that the veterinary profession is becoming increasingly female-dominated, but there are concerns that this is not represented in positions of leadership. Although there are well-documented data describing the under-representation of women in various senior veterinary positions (academic deans, practice owners, positions on professional councils and corporate boards), it is less clear why this occurs. Although likely multifactorial, the relative contributions from a gender divide in intent to pursue leadership positions, women being dissuaded from considering senior roles, or differences in success rate (e.g. in leadership appointments), are unknown. This study was performed to investigate whether there is a gender divide among veterinary students in intent to pursue a leadership role and also to explore other influencing factors in career aspiration in veterinary students. Students from five UK veterinary schools were surveyed using an electronically distributed questionnaire. Career aspiration and leadership ambition were identified as being influenced by gender, with a greater proportion of male students (83 per cent) than female students (73 per cent) indicating they aspired to owning a practice. Career aspiration was also positively influenced by self-esteem, confidence and previously holding a position in the students' union or other club or society; however, all of these were also more apparent in male students than female students. Career aspiration also appeared to be influenced by year of study, with a decline seen at each increasing student year group, and this was unrelated to gender or self-esteem.

Introduction

Data from surveys of the veterinary profession demonstrate an increase in proportion of female practitioners and graduates in both the UK and North America (Irvine and Vermilya 2010, RCVS 2014a). Despite this, evidence suggests that women are not occupying leadership positions, such as ownership of practices or membership of veterinary industry corporate boards, in equivalent proportions, even after accounting for age and experience (DVM 360.com 2008, RCVS 2014b). Reports from North America observe that the increasing feminisation of the profession has occurred in parallel with a declining interest among males to enter veterinary education and a decline in veterinary salaries compared with professional positions in general (Lincoln 2010). Cause and effect are challenging to demonstrate, although the suggestion has been made that an increase in female presence in a profession, together with stagnation of wages, actively dissuades males from entering (Lofstedt 2003). Because of this association, some cite fears that feminisation of the profession may contribute to declining veterinary incomes (Lofstedt 2003), an opinion that draws on findings that female veterinary surgeons were satisfied at lower salaries than their male counterparts, and have lower expectations for salary increases (Cron and others 2000, Bristol 2011). Others have voiced concern that a female profession in which females do not aspire to leadership roles may lead to a continued increase in non-veterinary ownership of practices or a profession in which corporate ownership is the norm (Henry and Treanor 2012). Since practice ownership is associated with higher earnings (Cron and others 2000, Gordon and others 2010), an under-representation of female veterinary practice owners also exacerbates the gender pay differential in the profession. Evidence of the impact of gender diversity on the performance of business management teams is variable (Homberg and Bui 2013); however, many studies report beneficial effects on sales and profits (Hoogendoorn and others 2013) and diversity in teams can improve information sharing, introduce broader perspectives and improve the quality of decision-making (Homberg and Bui 2013). Addressing the gender balance in veterinary leadership therefore offers the potential to positively impact the profession in various ways, as well as increasing role models for early career vets.

The reasons for the documented gender divide in veterinary leadership and practice ownership have not been fully explored, and it is not known at what stage career aspirations are set. Strategies aimed at encouraging female vets to apply for leadership roles or consider practice ownership may be ineffective if a disinclination to pursue a leadership role is established during or before undergraduate veterinary education. The aims of this study were therefore to investigate whether there is a gender difference in career aspiration in veterinary students and to evaluate potential contributing factors to differing career aspirations, such as prior student experiences and inherent confidence and self-esteem. It is hoped that the findings of the study

will be of benefit in better understanding why individuals (both male and female) do or do not aspire to take on professional leadership roles and will be of interest to those developing strategies to encourage more veterinary graduates into veterinary leadership.

Methods

All Royal College of Veterinary Surgeons (RCVS)-accredited universities in the UK and Ireland were contacted to request permission to survey their veterinary medicine students; students (in all years of study) from those that responded affirmatively were then emailed and invited to participate by completing an online questionnaire. The survey was conducted via independent, web-based software (SurveyMonkey, Palo Alto, California, USA) and institutional ethics committee approval was obtained.

The survey was divided into three sections. The first collected demographic information and asked for details of prior experience in university leadership positions (e.g. in clubs or societies), prior employment and curriculum business content. The second section asked for information relating to confidence, self-esteem and career aspiration, and the final section contained questions relating to women at work (e.g. awareness of female veterinary role models, childcare facilities and flexible work hours). Confidence and self-esteem were evaluated using five-point Likert scales measuring a participant's self-perception of their worth and abilities in a specific situation. This approach was based on a single-item adaptation of Rosenberg's self-esteem scale (Robins and others 2001). Veterinary scenarios were added because of the potential for situational variability in confidence and self-esteem (Harter and others 1998); by providing context, it was intended that measurements of these parameters would relate to confidence and self-esteem specifically in the veterinary workplace. For assessment of confidence, participants were asked to imagine they were in a veterinary environment and were requested to perform a task they had never done before. They were then asked to rate their confidence, ranging from 'No confidence in myself at all' to 'Confident that I can succeed at anything'. Similarly, for self-esteem, the situation presented was 'A clinician makes the statement that you are a veterinary student with less experience than them' and the Likert scale ranged from 'I feel completely worthless' to 'I feel full of worth and value'.

Career aspiration was evaluated using a previously validated Career Aspiration Scale (Cheng and Yuen 2012), with minor modifications to increase relevance for veterinary students. Participants were asked to assign a numerical score from 0 (not true of me) to 4 (very true of me) in response to a series of questions such as 'I hope to become a leader in the veterinary field' and 'I hope to move up through any organisation or practice I work in'. From the results, a leadership and achievement aspirations factor (LAAF) was calculated, which indicates a respondent's

aspirations to achieve a leadership position within their field. A similar set of questions were also used to calculate an education factor (EF), which indicates the respondent's aspiration to continue their education.

Students were also asked to rank various features of practices according to the priority given to each when selecting a desirable first employment. The features included were promotion potential, flexibility of rotas, income and benefits, location, autonomy and work freedom, high case load, availability of a mentor, type of veterinary work (species or specialty), company culture and high complexity of cases. For the purposes of data handling, the feature ranked first was allocated a score of 1, that ranked second a score of 2 and so on. When rankings were collated, lower scores therefore indicated a higher importance attributed by respondents.

A web link to the questionnaire was distributed either via email or advertisement on an institutional intranet or virtual learning environment accessible to students in accordance with each university's local policy. The questionnaire was estimated to take 10 minutes to complete, based on initial pilot testing, and was open between May and October 2014.

Data Analysis:

Survey data were compiled by the independent web-based software and collected in a spreadsheet. Data were then extracted and analysed using statistics software (IBM SPSS Statistics, V.22). Results were examined graphically for normality of distribution; normally distributed data are reported as mean \pm sd and non-parametric data as median (range). Simple gender comparisons of normally distributed data (such as scores for confidence and self-esteem) were analysed using t tests. Gender comparisons of categorical data were analysed using χ^2 or Fisher's exact test, and comparisons of continuous non-parametric data were analysed using Mann-Whitney U. Significance was assumed at a P value <0.05.

Results

Respondent demographics

Five universities responded to the initial request for permission to survey their veterinary students, and all gave permission; therefore, the study represents data from Bristol University, the Universities of Edinburgh, Liverpool and Nottingham, and the Royal Veterinary College. Because each institution distributed the survey internally, it is impossible to calculate exactly

how many students received it, and therefore to generate a precise response rate. However, based on calculations from published student numbers (RCVS 2011, 2012, 2013, 2014a), there were approximately 3400 students at the included institutions at the time of survey distribution. A total of 1080 students completed the survey, and their demographics are shown in Table 1. The distribution of male and female response rate is demonstrative of the veterinary student population (22 per cent male), based on the RCVS data quoted above.

Influence of gender on responses

There were gender differences in response to many of the survey questions. A greater percentage of male students (83 per cent) than female students (73 per cent) indicated they had an aspiration to own a practice ($P=0.029$). Regarding prior experience in holding leadership positions, 15 per cent of male students compared with 8 per cent of females had held positions in the Students' Union (SU) ($P=0.004$), and 40 per cent of males compared with 29 per cent of females had held positions in other clubs or societies ($P=0.002$). Male students also had significantly higher scores than female students for confidence (2.9 ± 1.3 v 2.5 ± 1.2 , $P<0.001$), self-esteem (3.0 ± 1.4 v 2.7 ± 1.3 , $P<0.001$) and leadership aspiration (9 (-8 to 16) v 7 (-5 to 16)), $P<0.001$). In contrast, the EF scores, indicating a respondent's aspiration to continue their education following graduation, showed no gender difference (2 (-4 to 4) for both males and females, $P=0.554$). There were also gender differences noted in attitudes relating to family life. Although no gender difference was detected in intent to have children (55 per cent women answering yes to this question compared with 59 per cent of men, $P=0.384$), 65 per cent of women were prepared to work reduced hours for the purposes of childcare needs, compared with 47 per cent of men ($P<0.001$).

Responses associated with an aspiration of practice ownership

Overall, 75 per cent of students answered yes to the question, 'Do you have an aspiration to become an owner/part-owner in any practice at some point?'. This declined with year of study ($P=0.01$): among first years, 69 per cent answered yes to this question compared with 55 per cent in final year respondents. There was an association between aspiration of practice ownership and having held a previous position in the SU (71 per cent of students aspiring to practice ownership in those who had held an SU position compared with only 65 per cent in those who had not, $P=0.009$), with a similar association being present for those who had previously undertaken paid work (67 v 65 per cent interest in practice ownership, $P=0.021$).

There was a suggestion of a similar trend for students aspiring to practice ownership when they had held a position in another society or club (67 v 65 per cent, $P=0.054$). Median career aspiration score (LAAF) was higher in students interested in practice ownership (9, -8 to 16) compared with those who were not interested (4, -3 to 16) ($P<0.001$). Similarly, confidence scores (3.0 ± 0.9 v 1.8 ± 1.5) and self-esteem (3.2 ± 1.0 v 2.0 ± 1.6) were also higher in students who aspired to practice ownership compared with those who did not ($P<0.0001$ and <0.001). Students were also asked whether they knew of a female practice owner; 67 per cent responded that they did, with no differences between male and female respondents; however, this did not appear to influence the female respondents' aspiration to own a practice ($P=0.110$). Among students who reported they had received some business teaching as part of their veterinary course, fewer indicated an aspiration to own a practice compared with those who had not received business teaching (64 v 66 per cent, $P=0.023$).

As aspiration to own a practice decreased with year of study, further analyses were performed to try to explain this finding. Neither confidence (2.5 ± 1.25 in year 1 v 2.8 ± 1.3 in year 5) nor self-esteem (2.8 ± 1.3 in year 5 v 2.5 ± 1.25 in year 1) showed any change with year of study ($P=0.415$ and 0.131 , respectively). The decline in practice ownership aspiration did not appear to have a gender influence; when male and female students were analysed separately, the decline in students who answered 'yes' to this question was no more pronounced for either gender ($P=0.84$ for female and 0.91 for male students). Among first years, 66.8 per cent of female and 80 per cent of male students had an aspiration to own a practice, in final year this had decreased to 52.3 per cent of female and 67.7 per cent of male students.

Prioritisation given to practice features when pursuing first employment

The rankings awarded to different features of ideal first employment destination are shown in Table 2. Both genders prioritized type of veterinary work and availability of a mentor as the most important aspects of a first practice, and ranked high caseload and high case complexity as the least important or desirable feature in their first job. There were minor gender differences in ranking of salary, income, promotion potential and schedule flexibility; these data were not analysed further.

Discussion

The results of this study suggest that the gender divide in practice ownership and veterinary leadership observed in the profession (RCVS 2014b) is also evident in students' aspirations (higher percentages of male students than female students had an aspiration to own a practice) and experiences (male students were more likely to have held positions in the SU and other clubs and societies). However, in contrast to data obtained from the profession, the students' gender differences were comparatively small. For example, compared with the 83 per cent of male and 73 per cent of female students who had an aspiration of practice ownership in this study, the RCVS survey of the profession (2014b) demonstrates the male:female representation in different roles is 7.6 per cent (male) versus 3.1 per cent (female) for practice principal, 24.5 versus 6.5 per cent for director, 11.8 versus 2.8 per cent for partner and 36.7 per cent (male) versus 70.7 per cent (female) for assistant or practice employee. There is little data available to evaluate aspirations of practice ownership in graduated veterinary surgeons (i.e. among those who are not yet employed in a leadership or ownership role, but may aspire to be), although it was reported that a North American survey demonstrated that twice as many men than women aspired to practice ownership during their early career (below the age of 40) (BVA Congress 2006). It is interesting to note that no gender difference was noticed in career aspiration among students applying to veterinary school (Amass and others 2011); however in a prior study of first-year students, males had already become significantly more likely than females (74 v 48 per cent) to expect to become a practice owner (Bristol 2011). Future work will be helpful in evaluating whether the smaller gender divide in career aspiration noted in this study transfers to a smaller gender leadership gap when these students graduate and reach the level of experience associated with practice ownership or whether other forces early in the veterinary career actively dissuade or challenge men and women differently in their pursuit of leadership roles. The comparison between industry and an academic career is also of interest, as previous work has suggested female veterinary students are more likely to aspire to continue postgraduate training (internship/ residency or doctorate programmes) (Byington 2006), and this work suggested that the educational aspirations of the male and female students were equal. Although the representation of women in senior academic positions is increasing, veterinary academic leadership currently shows a similar male gender bias as that seen in industry (Leadley and Sloane 2009, Irvine and Vermilya 2010).

The gender divide in veterinary leadership and practice ownership has previously been attributed (at least in part) to the challenges of combining leadership with family responsibilities (Irvine and Vermilya 2010). Although the authors did document that female students were more likely to consider flexible or reduced hours for reasons of childcare, it was

interesting to note that 47 per cent of male students stated they would consider this. Although more female than male veterinary surgeons work part time, the proportion has remained static for women (25–26 per cent between 2006 and 2014), whereas for male vets, the percentage working part time has increased sharply to 11 per cent in 2014 from 5.5 per cent in 2010 (RCVS 2014b). Although family responsibilities may help explain the gender divide seen in leadership in the profession, one would not expect this to have the same impact on the students' prior leadership roles (such as in the SU). An additional explanation for the observed gender effect on leadership aspiration may lie in differences in confidence and self-esteem, observed in this study as well as in another recent report of veterinary students (Miller and others 2015), reports of students in general (Abouserie 1994) and in the population as a whole (Kling and others 1999). The authors found that students of either gender with higher confidence and self-esteem were more likely to aspire to practice ownership; in the earlier study of self-esteem in veterinary students, higher self-esteem students had more positive views of their learning and skills development, and of their educational experience, and experienced less stress, all of which may positively influence their pursuit of leadership roles. Gender differences in students' career and leadership ambition may also result from traditional gender stereotypes, characterising women as kind, helpful and concerned about others, and men as decisive, independent and forceful (Heilman 2001). Implicit gender stereotypes and self-concepts (the gender-related assumptions an individual makes about their own abilities and the roles in which they can see themselves being successful) negatively influence women's ability to imagine themselves in leadership roles, which are assumed to require more classically 'masculine' traits (Rudman and Phelan 2010). Interestingly, gender-related self-concepts show some degree of malleability: assigning women into high-power groups or designating them as group leaders appeared to strengthen women's perceptions of their own leadership traits compared with their peers (Haines and Kray 2005). However, in contrast, exposure to women in non-traditional feminine leadership roles risked the opposite effect; women perceived that these female leaders possessed atypical or 'masculine' personality traits, which they themselves lacked (Rudman and Phelan 2010). Encouraging more female students into leadership roles (e.g. in the SU) may therefore exert a beneficial effect by challenging gender stereotypes and self-concepts; the same cannot be assumed to result from simply exposing female students to women veterinary leaders. This aligns with the authors' observation of a lack of effect on female students' career aspiration that resulted from knowing a female practice owner.

In understanding students' career aspirations, it is also of interest to explore the decline that the authors observed in practice ownership intention over the course of study, particularly as this

did not appear to be attributed to confidence or self-esteem (both of which remained stable) or to gender (female and male students were similarly affected). In this context, it was interesting to see that exposure to business teaching also appeared to have a slight inhibitory effect on students' aspirations to own a practice. These findings may suggest that exposure to veterinary industry (as happens progressively over the course through extramural placements, as well as in curricular business teaching) raises students' awareness of the challenges of practice management and leadership, resulting in a change in aspiration towards being an employee rather than a practice owner. In a study of medical students, although the genders were equal in the appeal they perceived in having a leadership role in healthcare, the female students appeared more aware of the conflicts and tensions associated with combining such roles with family commitments, and this contributed to a declining intent to pursue leadership in female medical students (Drinkwater and others 2008). In other (non-healthcare) science fields, this observed decline in leadership aspiration is not reported, year of study having either no effect on leadership intent (Egidio and Boatwright 2003) or leadership aspirations increasing as students progress through their undergraduate education (Nauta and others 1998). In a study of engineering students, female students did demonstrate a declining interest to persist in engineering, but this was associated with declining confidence in their abilities (Cech and others 2011). The gender-neutral declining interest in career ambition that is unrelated to confidence may therefore be an anomaly for veterinary students and merits further investigation.

Previous authors have postulated that the teaching style adopted for leadership training in veterinary students may actively discourage female students in their leadership ambitions (Taylor and Robinson 2009). This suggestion was based on gender literature that contrasts masculine and feminine ways of knowing: 'feminine' learning is described as relational in nature, facilitated when learning is a shared and connected experience, with responsibility emphasised over competition; 'masculine' ways of knowing are described by an authoritarian and patriarchal learning style, separation between students and teacher, and emphasis on justice, rules and competition. Taylor and Robinson (2009) use this to suggest that a more relational teaching style, with emphasis on responsibility over competition, may encourage more female students to maintain an interest in veterinary leadership. Such characterisations are likely an overgeneralisation, and the practice of teaching to match student-preferred learning style is largely unsupported by the evidence-based literature (Norman 2009). However, in a study of healthcare workers, psychosocial mentoring (role modelling, shared concerns and doubts, social interaction) was found to improve self-esteem more effectively than career mentoring (authoritarian, focuses on coaching and setting challenges) (Koberg and others 1998). One may therefore postulate that a leadership teaching strategy that is more

relational and collaborative may have advantages in the veterinary and healthcare professions, in which responsibility, shared decision-making and relational care form a significant component of the contemporary professional identity (Armitage-Chan and others 2016). Indeed, such collaborative learning approaches have already been associated with success in the veterinary course (Ryan and others 2004, Khosa and others 2010). Emphasising such teaching approaches in veterinary leadership training may help to offset the observed disparity between the preferred attributes of the contemporary veterinary surgeon (interpersonal skills, competence in managing emotional situations, excellent communication skills and acknowledgement of the human-animal bond) and those that are perceived as representing the identity of the veterinary leader (eschewing family responsibilities, becoming less emotional, adopting a 'tough persona') (Ormerod 2008, Irvine and Vermilya 2010), and may therefore be of benefit to veterinary students of both genders as an attempt to prevent the observed decline in leadership ambition.

Conclusions and study limitations

The results of this survey suggested that previous leadership experience and higher confidence and self-esteem scores were more likely in students aspiring to own a practice, with male students being proportionately more likely to be represented by each of these descriptors. Intent to own a practice seemed to decline with year of study and did not appear to be positively influenced by business teaching within the curriculum or (for female students) exposure to a female practice owner. However, an important limitation of this study approach is its inability to provide deeper understanding of the underlying factors that contribute to students' career ambitions and the reasons for the observed gender differences. For example, the focus on practice ownership as an indicator of leadership ambition neglected alternative leadership roles, for example, in academic, professional or regulatory bodies, or on corporate practice boards; it is possible that students, and female students in particular, may perceive these very differently compared with the risks and challenges of owning a practice. It was also not possible to draw out contributions surrounding stereotypical gendered family responsibilities (and the impact that flexible work schedules may have on this), the impact of female role models and the extent to which gender stereotypes influence the roles in which female students can see themselves as being successful. Postulated effects arising from leadership teaching styles, and exposure to the veterinary business workplace, also merit further investigation to evaluate their contributions to declining practice ownership ambition in progressive year of study. This finding in itself needs further investigation as it is not possible to distinguish the potential

contribution of the veterinary course (or increasing life-awareness) in dissuading students from pursuing leadership roles from the possibility that the first-year students surveyed will retain their higher career ambitions. There are similar differences noted in the students surveyed compared with other reports of the profession. For example, the percentage of male students who indicated they would consider part-time working is higher than the percentage of male veterinarians who currently work part time, and the gender gap in career aspiration noted in this study is narrower than the gender imbalance in leadership reported in the profession. It would be interesting to explore whether the student attitudes reported here transfer to an evolving professional culture or whether the students alter their attitudes when they enter the workforce. Although some interesting contributions to career and leadership aspiration have been identified, further work, building on these findings, is necessary to inform future curriculum development in this area.

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Table 1. Respondent demographics.

		n	(%)
	Total respondents	1080	(100)
Gender	Male	231	(21)
	Female	839	(78)
	Skipped question	10	(1)
Age: median (range)	21 (17-41)		
	Skipped question		
University	Bristol University	197	(18)
	Royal Veterinary College	337	(31)
	University of Edinburgh	148	(14)
	University of Liverpool	202	(19)
	University of Nottingham	182	(17)
	Skipped question	14	(1)
Year of Study	1	244	(23)
	2	241	(22)
	3	212	(20)
	4	147	(14)
	5	216	(20)
	6	19	(2)
	Skipped question	1	(0)

Table 2.

Table 5 – Job Aspects and Gender

Mean ± SD Ranking	Male Ranked Job Aspects	Female Ranked Job Aspects	Mean ± SD Ranking
3 ± 2	Type of Veterinary Work	Type of Veterinary Work	3 ± 2
4 ± 3	High Mentor Availability & Quality	High Mentor Availability & Quality	4 ± 3
4 ± 3	Work Environment	Work Environment	4 ± 2
5 ± 2	Income & Benefits	Location	5 ± 3
5 ± 3	Location	Income & Benefits	5 ± 2
6 ± 2	Autonomy/Work Freedom	Schedule Flexibility	6 ± 2
6 ± 3	High Promotion Potential	Autonomy/Work Freedom	7 ± 2
7 ± 2	Schedule Flexibility	High Promotion Potential	7 ± 2
7 ± 2	High Caseload	High Caseload	7 ± 2
8 ± 2	High Complexity of Cases	High Complexity of Cases	8 ± 2

Rankings of job aspects, according to the importance placed on each by students when considering first employment destination. A low value (ranking 1) indicates students rated this aspect as highly important.