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## Perceptions of the impact of the RCVS Certificate in Advanced Veterinary Practice on the careers of its graduates

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Abstract:	<p><b>Background</b> This study aimed to investigate the perceived effect of The RCVS Certificate in Advanced Veterinary Practice (CertAVP) on its graduates with respect to career advancement, professional practice and contentment with work in the veterinary industry.</p> <p><b>Materials/methods</b> A cross-sectional online survey of CertAVP graduates, utilising descriptive analysis of Likert scales, logistic regression of demographic variable associations with key outcomes, and free-text analysis.</p> <p><b>Results</b> The majority (89%) of the 103 respondents felt that the CertAVP led to improvements in professional practice, 56% felt it had helped advance their career, 55% stated it had improved their contentment with work in the veterinary industry. The CertAVP was perceived to improve evidence-based practice, clinical governance, intellectual satisfaction and encouraged lifelong learning but was not perceived to improve work-life balance.</p> <p><b>Discussion</b> Despite respondents reporting career advancement, this was only reflected in mentorship and managing more complex cases; respondents did not feel the CertAVP resulted in promotion, a pay rise or new leadership roles, nor did it afford greater flexibility in their working schedule.</p> <p><b>Conclusions</b> Despite being effective at improving professional practice, recognition and reward of the qualification by employers appears limited.</p> <p><b>Limitations</b> Due to potential response bias this study may not represent the wider population.</p>

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3 1 **Perceptions of the impact of the RCVS Certificate in Advanced Veterinary Practice on**  
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5 **the careers of its graduates**  
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39  
40 circulating the surveys.  
41

42 15 **Data Availability Statement:** The data that support the findings of this study are available  
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44 from the corresponding author upon reasonable request.  
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3 17 **Abstract**  
4

5 18 **Background** This study aimed to investigate the perceived effect of the RCVS Certificate in  
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8 19 Advanced Veterinary Practice (CertAVP) on its graduates with respect to career  
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10 20 advancement, professional practice and contentment with work in the veterinary industry.  
11

12 21 **Materials/methods** This study is a cross-sectional online survey of CertAVP graduates,  
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14  
15 22 using descriptive analysis of Likert scales, logistic regression of demographic variable  
16  
17 23 associations with key outcomes, and free-text analysis.  
18

19 24 **Results** The majority (89%) of the 103 respondents felt that the CertAVP led to  
20  
21 25 improvements in professional practice, 56% felt it had helped advance their career, 55%  
22  
23 26 stated it had improved their contentment with work in the veterinary industry. The CertAVP  
24  
25 27 was perceived to improve evidence-based practice, clinical governance, intellectual  
26  
27 28 satisfaction and encouraged lifelong learning but was not perceived to improve work-life  
28  
29 29 balance. However, despite respondents reporting career advancement, this was only reflected  
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31 30 in mentorship and managing more complex cases; respondents did not feel the CertAVP  
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33 31 resulted in promotion, a pay rise or new leadership roles, nor did it afford greater flexibility in  
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35 32 their working schedule.  
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40 33 **Limitations** Due to potential response bias this study may not represent the wider population.  
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42 34 **Conclusions** Despite being effective at improving professional practice, recognition and  
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44 35 reward of the qualification by employers appears limited.  
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## 37 **Introduction**

38 When vets move from undergraduate teaching frameworks into their postgraduate lives, they  
39 are presented with a wide variety of industry-related educational options. Studying towards a  
40 European or American diploma with subsequent specialist recognition has become a reality  
41 for around 850 of the 33,000 Royal College of Veterinary Surgeons (RCVS)-registered vets  
42 <sup>21</sup>, with alternative career options in research such as PhD and Master's qualifications also  
43 available. Traditionally, the RCVS-recognised postgraduate qualification achievable by  
44 primary practitioners was the RCVS certificate, which was discontinued in 2011 after the  
45 phased introduction of the modular Certificate in Advanced Veterinary Practice (CertAVP)  
46 which sought to clarify the standards of both teaching and assessment by aligning them with  
47 the Framework for Higher Education Qualifications' (FHEQ) level 7, or 'Master's level'<sup>27</sup>.  
48 The professional title of 'Advanced Practitioner' was created by the RCVS to signify 'official  
49 recognition of a veterinary surgeon's particular knowledge and skills in a designated field of  
50 veterinary practice'<sup>18</sup>, and represents a list of practising vets, visible to the public and the  
51 veterinary industry, who have demonstrated a professional skillset in their area of veterinary  
52 practice which exceeds that of their primary veterinary degree. The CertAVP is one route to  
53 Advanced Practitioner (AP) status, but CertAVP-holders need to pass a synoptic examination  
54 to become eligible to apply for this title, and the two qualifications are distinct entities.

55  
56 The modular design of the CertAVP was intended to allow a flexible approach to study<sup>16</sup>, but  
57 arguably the most significant change implemented during the transition from Certificate to  
58 CertAVP was the introduction of mandatory 'professional and key skills' modules which use  
59 a framework of learning objectives including, but not limited to; assessment of animal  
60 welfare, development of critical thinking and appraisal of evidence, the role of audit and  
61 clinical governance, professional communication and self-reflective skills<sup>19</sup>. Underpinning

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3 62 these curricular changes was the concept presented by Kinnison and May<sup>14</sup> that outcome-  
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5 63 related continuing professional development (CPD) would lead to more effective behavioural  
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7 64 change in practitioners, with more predictable and wide-reaching benefits than traditionally  
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9 65 narrow-spectrum disciplinary CPD.  
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14 67 Motivating factors that encourage postgraduate vets to engage with CPD have been  
15  
16 68 categorised as intrinsic, extrinsic and social<sup>8</sup>. Self-motivating factors such as an inherent  
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18 69 motivation for learning are classed as intrinsic factors; social motivation may be an  
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20 70 individual's desire to learn as part of a social activity, or simply a desire to meet people and  
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22 71 interact socially. Extrinsic motivators include the promise of pay increases or promotion, as  
23  
24 72 well as obligations to comply with external pressures such as mandatory CPD <sup>8,9</sup>. A study of  
25  
26 73 postgraduate vets revealed that extrinsic factors either 'occasionally' or 'never' motivated  
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28 74 vets to engage with CPD, except where CPD was considered to increase the likelihood of  
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30 75 professional advancement <sup>8</sup>.  
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38 77 After an eight-year hiatus, the role of veterinary surgeon was re-admitted to the UK's  
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40 78 shortage occupation list in 2019, as documented in a recent study which investigated factors  
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42 79 influencing recruitment and retention of postgraduate vets; topics of great concern to the  
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44 80 profession <sup>10</sup>. Questions regarding happiness among early-career vets prompted the inclusion  
45  
46 81 of a widespread graduate consultation process in the Vet Futures Action Plan <sup>26</sup>, with a view  
47  
48 82 to improving outcomes for new graduates. Enmeshed with considerations of veterinary  
49  
50 83 industry retention are concerns regarding the mental wellbeing of vets. In a study of work-  
51  
52 84 related stressors among UK veterinary surgeons, Bartram *et al* <sup>5</sup> listed intellectual  
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54 85 challenge/learning alongside good outcomes and relationships with colleagues as the greatest  
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56 86 sources of satisfaction in the workplace. The aims of this study were to investigate if  
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3 87 CertAVP-holders felt that the qualification had influenced the advancement of their career,  
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5 88 improved their professional practice and improved their contentment with work in the  
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8 89 veterinary industry.  
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## 10 **Materials and methods**

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12 91 A cross-sectional survey was developed using JISC Online Surveys (Bristol). Primary  
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14 92 demographic data collected included; age, sex, years since graduation as a vet, years since  
15  
16 93 completion of the CertAVP, industry sector (small or large animal, equine, pharmaceuticals  
17  
18 94 etc.), and referral vs first-opinion practice (see Supplementary item 1). The subsequent three  
19  
20 95 sections related to three key outcome measures; career advancement, professional practice,  
21  
22 96 and contentment with work in the veterinary industry. Each section started with a statement  
23  
24 97 relating directly to the three key outcomes, namely: 'You feel completing the CertAVP has  
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26 98 contributed to the advancement of your career', 'You feel that completing the CertAVP has  
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28 99 resulted in an overall improvement in your professional practice', and 'You feel that gaining  
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33 100 your CertAVP has improved your contentment with a career in the veterinary industry'.  
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35 101 Following these were a series of statements, relating to that key outcome, that could be  
36  
37 102 scored using a five-point agree-disagree Likert scale. These statements were created by  
38  
39 103 reviewing veterinary and medical postgraduate education literature, as well as appraisal of the  
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42 104 RCVS CertAVP syllabus. Examples of such statements include achieving a promotion or  
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44 105 receiving a pay rise (Re: career advancement), balance multiple responsibilities at work or  
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46 106 better client communication (Re: professional practice), helped your professional life more  
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48 107 closely match your career expectations or increased the intellectual satisfaction you feel in  
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50 108 your professional life (Re: industry contentment). Free text options were available to allow  
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52  
53 109 respondents to explain their answers. The questionnaire was piloted with members of the  
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56 110 Liverpool Veterinary Educational Research Group and core academics in the Veterinary  
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58 111 Postgraduate Unit. No adjustments were required to be made.  
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3 112 The electronic questionnaire was circulated between June and September 2020. Distribution  
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5 113 was via RCVS email communications, who agreed to circulate the link to all CertAVP-  
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7 114 holders that had not yet achieved AP status. Gaining the CertAVP can act as a stepping-stone  
8  
9 115 to achieving AP status, hence eliminating APs from the respondents was requested to reduce  
10  
11 116 ambiguity when interpreting survey results. The questionnaire link was also made available  
12  
13 117 on the social media channels of the authors' institution, again aimed at CertAVP-holders yet  
14  
15 118 to achieve AP status, and was available to respondents via this route between August and  
16  
17 119 November 2020. Respondents were informed that the survey was anonymous, and any parts  
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19 120 of the questionnaire could be left incomplete prior to final submission. Respondents were  
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21 121 made aware that by completing the questionnaire they were consenting to take part in this  
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23 122 study.  
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31 124 The demographics of respondents, stratified by distribution route (RCVS or social media),  
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33 125 were compared using Chi<sup>2</sup> tests to assess whether these data could be combined for analysis.  
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35 126 The responses to the three main outcome statements were converted to binary responses (i.e.  
36  
37 127 positive responses were coded as 1, negative as 0, and 'neither agree nor disagree' as NA  
38  
39 128 values), to allow the exploration of associations between demographic variables and these  
40  
41 129 outcomes using logistic regression. If data enabled, substantive knowledge would be used to  
42  
43 130 select variables to create multivariable models. All statements with Likert responses were  
44  
45 131 analysed descriptively. Free text responses were recorded and broadly interpreted, but not  
46  
47 132 analysed with a systematic qualitative methodology. Selected free text responses are  
48  
49 133 highlighted in the results with the remainder present in the supplementary material (see  
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51 134 Supplementary item 1).  
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3 136 All statistical analyses were carried out using R language (version 3.2.0)<sup>17</sup>. Results were  
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5 137 considered significant where  $P < 0.05$ . The study was approved under a collective ethics  
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7 138 approval by the University of Liverpool ethics board, reference number 5402.  
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## 11 12 140 **Results**

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14 141 A total of 103 surveys were completed: 49 via the RCVS distribution and 54 via social  
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16 142 media. In 2018 there were 902 RCVS registered CertAVP holders<sup>21</sup>, however, the number of  
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18 143 CertAVP holders without AP status was not known, so the response rate could not be  
19  
20 144 calculated. The demographics between distribution groups were similar except in ‘veterinary  
21  
22 145 sector’ where more social media respondents worked in the equine field (Supplementary  
23  
24 146 Table 1.) Due to these similarities, the two distribution groups’ results were combined for  
25  
26 147 analysis. Respondents were predominately female, less than 20 years graduated, less than 5  
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28 148 years certified, within the equine and small animal sector, and received their CertAVP  
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30 149 training at the University of Liverpool (Table 1).  
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37 151 The majority of respondents, 56.3% (95% CI 46.2-66.1), agreed or strongly agreed that the  
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39 152 CertAVP had contributed to career advancement. Respondents overwhelmingly agreed or  
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41 153 strongly agreed, 89.3% (95% CI 81.7-94.6), that completing the CertAVP resulted in  
42  
43 154 improvement in their professional practice. In the final key outcome, 55.3% (95% CI 45.2-  
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45 155 65.1) of respondents agreed or strongly agreed that completing the CertAVP had improved  
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47 156 their contentment with a career in the veterinary industry.  
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### 51 52 158 *Career advancement*

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54 159 No demographic variable was associated with feeling that CertAVP completion led to career  
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56 160 advancement (Table 2). Despite the majority of individuals stating that the CertAVP had  
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3 161 positively influenced career advancement, most statements linked to this outcome were viewed  
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5 162 negatively with 71% stating that it did not improve work schedule flexibility, 70% stating that  
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7 163 the CertAVP did not lead to promotion, 66% stating that they did not receive a pay rise, and  
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9 164 60% stating that it did not result in obtaining clinical leadership roles (Fig 1). The only  
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11 165 positively viewed statements were that the CertAVP led to mentorship (56%), and that it led to  
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13 166 managing more complex cases (50%).  
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19 168 Survey respondents provided a total of 24 free-text responses to this section, which help to  
20  
21 169 contextualise the Likert responses. See supplementary material for all free text responses.  
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23 170 Many of the comments suggested that career benefits, such as pay rise or promotion, would not  
24  
25 171 be seen by CertAVP graduates until they moved into a new job, or took the required steps to  
26  
27 172 gain Advanced Practitioner status, as seen below:  
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30 173 *'I had to move jobs to gain flexibility and financial gain from my CertAVP.'*

31 174 *'(the CertAVP) Allowed me to differentiate myself when moving jobs.'*

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33 175 *'My employer does not recognise the Cert as being useful. None of the four clinical directors  
34  
35 176 hold a cert.'*

36 177 *'Financial rewards are not considered until advanced practitioner status is gained.'*

37 178 *'Pay rise once I get designated certificate not CertAVP.'*

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41 180 *Professional Practice*

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43 181 Due to the overwhelming majority (>89%) of individuals stating that the CertAVP resulted in  
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45 182 an overall improvement in professional practice, univariable analysis was not possible for the  
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47 183 majority of variables. The only variable that could be analysed was whether the respondent  
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49 184 worked at a referral practice. The odds of feeling an improvement in professional practice was  
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51 185 0.06 times lower in referral vets compared to those working in other parts of the profession  
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3 186 (OR=0.06, 95%CI 0.002-0.48) (Table 2). Most statements in this group were neither  
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5 187 predominately viewed negatively or positively (Fig 2). The statements that were mainly agreed  
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7 188 with included considerations of evidence-based medicine decision making (85%),  
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9 189 understanding the importance of clinical governance (67%), and improved confidence in client  
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11 190 communication (51%). Only one statement had the majority of respondents disagreeing; that  
12  
13 191 the CertAVP had improved their ability to achieve a sustainable work-life balance (59%  
14  
15 192 disagreed).

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21 194 In this section of the survey there were three stand-out topics among the free-text comments.  
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23 195 The first related to work-life balance, and the influence of additional postgraduate study:

26 196 *'Completing the CertAVP requires significant time commitment'*

28 197 *'The CertAVP required a large amount of 'home' time to complete. It is not however the*  
29  
30 198 *CertAVP's fault I am a work-a-holic!'*

33 199 *'Almost negatively affected work life balance as now want to research cases more fully and*  
34  
35 200 *don't have time in work so do at home.'*

37 201 The second theme considers the overwhelmingly positive responses to Q21. (use of evidence-  
38  
39 202 based medicine), but placed in the context of a challenging work environment:

42 203 *'Studying for the certAVP has definitely made me question the information I read and more*  
43  
44 204 *critically assess the information provided'*

47 205 *'I would love to have had a journal club but the practice considered it a waste of time. In*  
48  
49 206 *some ways the CertAVP increased my frustration in 1st opinion equine practice.'*

51 207 *'Practices I worked at were only bothered about profit, not making time to evaluate*  
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53 208 *procedures etc. and not interested in bettering themselves.'*

56 209 Finally, some responses appeared to focus on the topic of improved clinical practice, rather  
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58 210 than the broader topic of professional practice:

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3 211 *'(The) Cert AVP has improved my clinical knowledge – (it) has no relation on my ability to*  
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5 212 *work in a team, deal with risk or lead my team'*

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7 213 *'It helped advance my clinical knowledge. This is the only advantage to me in doing this*  
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9 214 *qualification'*

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15 216 *Contentment with a career in the veterinary industry*

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17 217 No demographic variable was associated with feeling that CertAVP completion led to  
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19 218 improved contentment with a career in the veterinary industry (Table 2). All statements within  
20  
21 219 this section were viewed positively, with 88% agreeing that the CertAVP provided structure to  
22  
23 220 CPD, 86% felt pride in achieving a CertAVP, 84% felt it helped to increase intellectual  
24  
25 221 satisfaction at work, 78% felt it encouraged them to pursue continued learning, and 53% felt  
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27 222 that it enabled their professional life to match career expectations (Fig 3).

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33 224 In this final section of the survey there were fewer free-text responses, some of which were  
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35 225 very positive:

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37 226 *'The certAVP course provided by (University provider) provides an excellent structured*  
38  
39 227 *learning experience. The combination of lectures, discussion boards, journal clubs, case*  
40  
41 228 *reports, case report discussions and examinations all provide different learning methods and*  
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43 229 *help to cement the information gained.'*

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47 230 While some were negative, with evident frustration at the challenges faced by the synoptic  
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49 231 examinations (an award over-and-above the CertAVP course) and efforts towards gaining  
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51 232 Advanced Practitioner status:

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54 233 *'I would have wanted to continue learning whether or not I did the CertAVP - but it did not*  
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56 234 *act as the jump to residency I wanted it to - I do not feel proud of the CertAVP - I'd feel proud*  
57  
58 235 *if I managed to pass the synoptic - but at the moment it feels impossible....'*  
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3 236 The final comments in this section are relevant to the position of the CertAVP in an industry  
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5 237 where CPD is mandatory:

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8 238 *'Have always done a large amount of CPD regardless'*

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10 239 *'I have always been motivated towards learning. Doing the CertAVP has been part of it,*  
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12 240 *however I would have continued to do CPD even if I wouldn't (sic) have done the certificate.'*

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17 242 **Discussion**

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19 243 The vast majority of respondents indicated that completing the CertAVP led to an improvement  
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21 244 in their professional practice, while just over half felt the qualification had helped advance their  
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23 245 career, with a similar proportion stating the qualification had improved their contentment with  
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25 246 a job in the veterinary industry.

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30 248 Considering the outcome of improved professional practice, a recent study was performed  
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32 249 using narrative analysis of online discussion on the topic of veterinary professionalism<sup>2</sup>, which  
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34 250 highlighted certain defining characteristics, such as 'balancing multiple responsibilities' and  
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36 251 'teamwork'. Similar characteristics were incorporated into the outcome-associated variables in  
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38 252 the current study, which yielded variable levels of agreement from respondents despite an  
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40 253 overwhelming majority reporting an improvement in professional practice after completion of  
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42 254 the CertAVP. These findings suggest that efforts to identify what defines professionalism or  
43  
44 255 professional practice may vary greatly between individuals. These conclusions align with a  
45  
46 256 study performed in the field of human medical education, which suggests that professionalism  
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48 257 cannot be defined by lists of characteristics or traits<sup>12</sup>, while a 2010 study of veterinary  
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50 258 undergraduates discussed the challenge of both defining and teaching professional skills<sup>13</sup>.

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3 260 Some positive responses regarding professional practice in this study are likely to stem from  
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5 261 perceptions of improved clinical practice or clinical skills. The RCVS Code of Professional  
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7 262 Conduct for Veterinary Surgeons<sup>20</sup> presents five guiding principles, the first of which is  
8  
9 263 ‘Professional competence’; the overlap between professional and clinical skills may have been  
10  
11 264 a focus-point for survey respondents as suggested by those free text responses which discussed  
12  
13 265 improvement in clinical skills only, rather than professionalism more broadly, after completing  
14  
15 266 the CertAVP. It should be noted that overlap also exists between the outcomes of career  
16  
17 267 advancement and industry contentment, with respect to the associated variables presented in  
18  
19 268 this study. In the category of career advancement, 56% of respondents felt that the CertAVP  
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21 269 contributed to further work as a mentor, and 50% of respondents felt that the qualification  
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23 270 allowed them to manage an increasingly complex caseload.  
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31 272 A more mixed set of responses was seen to the variable of autonomy, with 47% positives and  
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33 273 30% negative responses. Autonomy in the workplace has been shown to correlate with feelings  
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35 274 of wellbeing among medical residents<sup>11</sup>, and may be considered synonymous with ‘decision  
36  
37 275 latitude’ when using the Demands-Resources model of work-related wellbeing; presented in  
38  
39 276 the veterinary context by Bartram and Turley<sup>3</sup>. The model theorises that individuals working  
40  
41 277 in an environment where the demands made of them outweigh the resources at their disposal  
42  
43 278 will experience work-related stress. This concept is further developed in the veterinary context  
44  
45 279 by Cake *et al*<sup>7</sup>, where autonomy was placed alongside ‘opportunities for professional  
46  
47 280 development’ as defining characteristics of the resources part of the model, which serves as a  
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49 281 reminder that the outcomes and variables presented in this survey have conceptual overlap, and  
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51 282 affect one another reciprocally rather than being suitable for consideration in isolation.  
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3 284 A complementary model for work-related stress is that of the Effort-Reward model, first  
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5 285 presented by Siegrist in 1996<sup>23</sup>. The model was designed to communicate workplace  
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7 286 considerations, and seems relevant when applied to postgraduate vets seeking CPD and  
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10 287 professional qualifications while working in a challenging environment. The ‘effort’ required  
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12 288 to achieve the CertAVP could be described academically: 60 credits (i.e. 600 hours of study)  
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14 289 spread over six semester-long modules which do not need to be completed consecutively, with  
15  
16 290 teaching and assessment presented at FHEQ level 7 (i.e. Master’s level). The free-text  
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18 291 responses seen in the professional practice portion of the results, and relating to the  
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20 292 qualification’s required time commitment, present a more subjective view of the effort required  
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22 293 to complete the CertAVP.  
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27  
28 295 A cross-sectional study of the UK veterinary profession<sup>4</sup> listed reported sources of satisfaction  
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30 296 among vets, with ‘intellectual challenge/learning’ ranking third at 32.4%, after good clinical  
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32 297 outcomes (41.5%) and relationships with colleagues (33.7%). A positive-psychology approach  
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34 298 to veterinary education was championed by Cake and colleagues<sup>6</sup> who document sources of  
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36 299 satisfaction among veterinarians as ‘based in meaningful purpose, relationships and personal  
37  
38 300 growth’, again presenting intellectual challenge as a primary source of satisfaction among vets.  
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40 301 The link between intellectual challenge and workplace satisfaction was used in this study to  
41  
42 302 create the ‘intellectual satisfaction’ variable, akin to a ‘reward’ component of the effort-reward  
43  
44 303 model, with 84% of survey respondents stating the CertAVP increased the intellectual  
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46 304 satisfaction they feel in their profession life. Given the documented importance of career  
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48 305 expectations among recent graduates<sup>25</sup>, further studies investigating correlations between  
49  
50 306 intellectual satisfaction and industry contentment are warranted.  
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3 308 Extrinsic factors such as salary, and how they contribute to feelings of contentment, cannot be  
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5 309 overlooked from a rewards perspective, especially given the financial cost of postgraduate  
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7 310 courses. The existence of Advanced Practitioner status adds complexity to the discussion, and  
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9 311 appraisal of the effect of AP-status on individuals was outside the scope of this project but  
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11 312 would make suitable avenues for future research. A notable dichotomy in our results is seen in  
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13 313 the outcome of career advancement versus its associated variables; while 56% of respondents  
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15 314 felt the CertAVP contributed to the advancement of their professional career, the vast majority  
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17 315 of responses to variables such as 'received a pay rise', 'received a promotion' and 'took-on  
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19 316 clinical leadership roles' were resoundingly negative. The reasons for this discord may be that,  
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21 317 while the CertAVP helps to develop academic, clinical and professional aspects of an  
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23 318 individual's career, and thereby perceptibly 'advancing' it, industry recognition of the  
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25 319 qualification via traditional employment measures of advancement such as pay and job title is  
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27 320 currently lacking. Although this is speculation, the importance of industry recognition for  
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29 321 postgraduate qualifications such as the CertAVP can be considered from the perspective of  
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31 322 each postgraduate individual's professional identity, as presented in a recent paper considering  
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33 323 UK veterinary graduates<sup>1</sup>, whereby inclusion in a new professional community (CertAVP  
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35 324 holders in this case) aids the formation of an individual's professional identity. There may be  
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37 325 negative psychological consequences for individuals who do not experience an expected level  
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39 326 of recognition after joining such a community<sup>1</sup>, so appraisal of the opinions of the wider  
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41 327 industry stakeholders with respect to the CertAVP qualification would be a useful next step in  
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43 328 enquiry, with the potential to inform the expectations of prospective postgraduate students.  
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53 330 There were several limitations to this study. The total numbers of questionnaires circulated  
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55 331 electronically was not calculable, precluding calculation of response rate. Additionally, of the  
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57 332 social media respondents there were proportionally more equine vets when compared to a  
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3 333 recent survey of the veterinary profession<sup>21</sup>, and the survey respondents cannot be said to truly  
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5 334 represent the wider population. As such, response bias cannot be overlooked when interpreting  
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8 335 the results of this study.  
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12 337 The results presented here contribute to an understanding of the effect of the CertAVP on its  
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14 338 graduates, and should serve to inform prospective candidates of the challenges and benefits of  
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16 339 the programme, as well as providing objective data regarding areas for curricular development  
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18 340 within the CertAVP. What vets expect of their postgraduate education, and how the realities of  
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20 341 available courses match these expectations, could form the basis of future longitudinal studies.  
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22 342 Incorporating factors such as job security and perceived employability would make sensible  
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24 343 additions to such further work.  
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31  
32  
33 346 Thanks are due to all CertAVP graduates who took the time to complete the surveys, and thanks  
34  
35 347 are due to Britta Crawford and Linda Prescott-Clements at the RCVS for their help in  
36  
37 348 circulating the surveys.  
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### 40 349 41 42 350 **Author Contributions**

43  
44 351 CMG developed the study concept. EH, CMG, and JT designed the survey. JT designed and  
45  
46 352 performed statistical analysis. EH wrote the first manuscript draft. All authors edited and  
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48 353 approved the final manuscript.  
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51 354

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1  
2  
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4  
5 357 University of Liverpool, a provider of teaching and assessment for the CertAVP. The authors  
6  
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8 358 have no other potential conflicts of interest relevant to this study.  
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431 **Tables and Figures**432 **Table 1 Respondent demographics of a survey exploring career impacts of the RCVS**433 **CertAVP**

<b>Survey Distribution</b>	Percentage of Respondents
RCVS Distribution	47.6% (n=49)
Social Media Distribution	52.4% (n=54)
<b>Years Graduated</b>	
<10	40.8% (n=42)
10-20	47.6% (n=49)
>20	11.7% (n=12)
<b>Years Certified</b>	
<5	76.7% (n=79)
>=5	23.3% (n=24)
<b>Sex</b>	
Female	79.6% (n=82)
Male	19.4% (n=20)
Did not answer	1.0% (n=1)
<b>Veterinary Sector</b>	
Equine	35.0% (n=36)
Small Animal	39.8% (n=41)
Production Animal	4.9% (n=5)
Other	20.4% (n=21)
<b>University Provider of CertAVP</b>	
University of Liverpool	84.5% (n=87)

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University of Edinburgh	3.9% (n=4)
Royal Veterinary College	7.8% (n=8)
Other	8.7% (n=9)

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435 **Table 2.** Univariable logistic regression analysis of demographic associations with the statements that the CertAVP led to career advancement,  
 436 improved professional practice, and improved contentment within the veterinary industry.

Demographic Variables	Career Advancement		Professional Practice		Contentment	
	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value
<b>Years Graduated (Ref &lt;10)</b>						
10-20	0.62 (0.18-1.96)	0.42	Not Calculable		0.82 (0.31-2.14)	0.69
>20	1.33 (0.18-27.6)	0.81	Not Calculable		3.84 (0.60-75.4)	0.23
<b>Years Certified (Ref &lt;5)</b>						
>=5	0.48 (0.15-1.64)	0.23	Not Calculable		1.03 (0.35-3.29)	0.95
<b>Sector (Ref = Small Animal)</b>						
Equine	1.47 (0.33-7.83)	0.62	Not Calculable		1.51 (0.51-4.58)	0.46
Other	0.22 (0.05-0.81)	0.03	Not Calculable		0.90 (0.28-3.01)	0.86
Production Animal	Not Calculable		Not Calculable		0.52 (0.02-14.1)	0.66
<b>Referral (Ref N)</b>						
Y	3.30 (0.55-63.4)	0.28	0.06 (0.002-0.48)	0.02	0.39 (0.12-1.28)	0.12
<b>Sex (Ref M)</b>						

F	1.60 (0.39-5.76)	0.49	Not Calculable		0.85 (0.25-2.62)	0.79
University	Not Calculable		Not Calculable		Not Calculable	

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439 **Figure 1:** Likert scale responses to statements associated with career advancement post CertAVP qualification

440 **Figure 2:** Likert scale responses to statements associated with improvement in professional practice post CertAVP qualification

441 **Figure 3:** Likert scale responses to statements associated with contentment within the veterinary industry post CertAVP qualification

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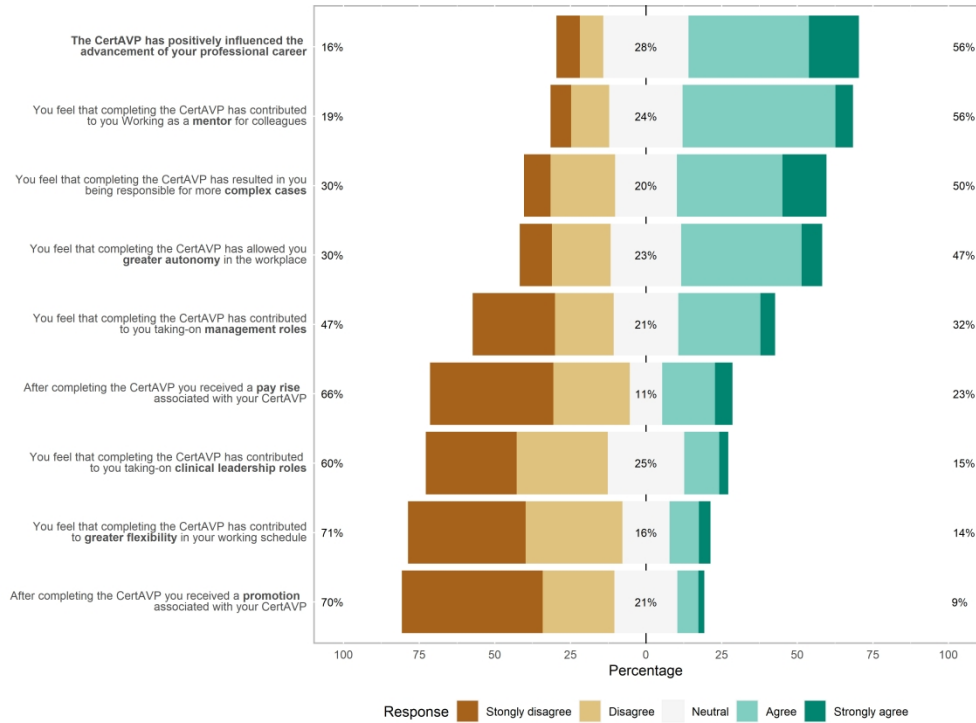


Figure 1. Likert scale responses to statements associated with career advancement post CertAVP qualification

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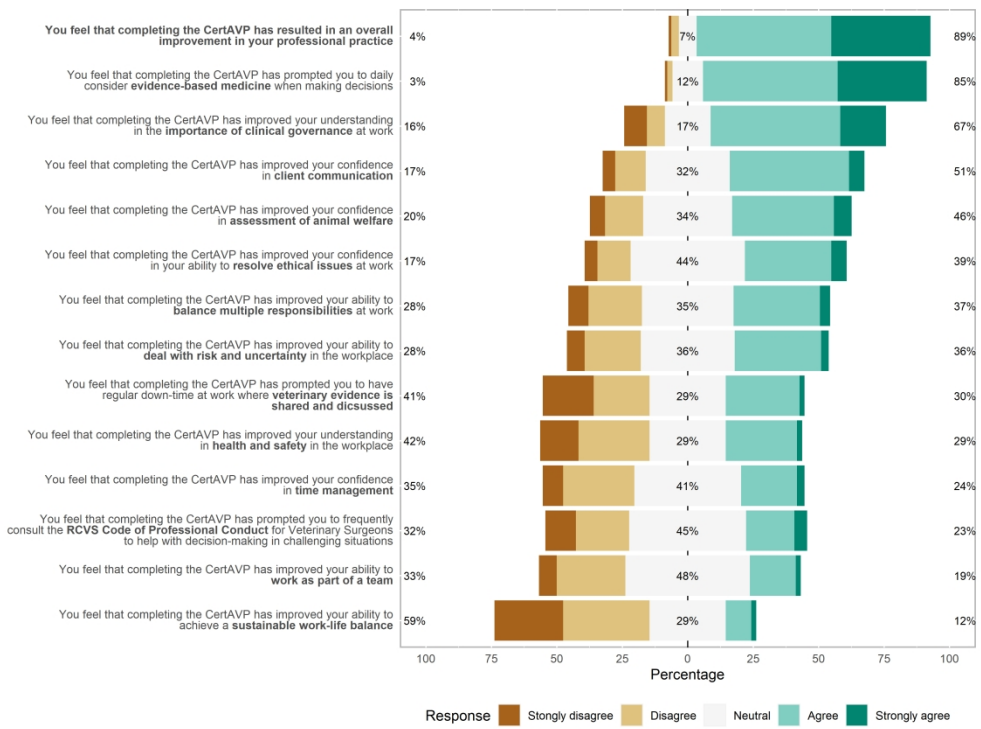


Figure 2: Likert scale responses to statements associated with improvement in professional practice post CertAVP qualification

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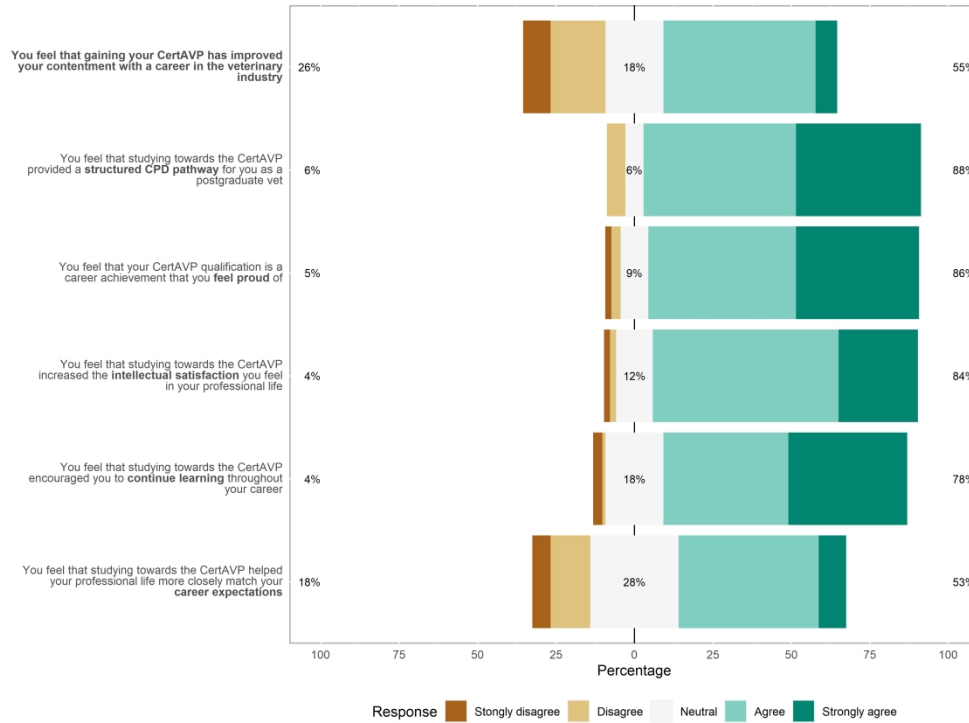


Figure 3: Likert scale responses to statements associated with contentment within the veterinary industry post CertAVP qualification

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# Investigating the perceived impact of the CertAVP on its graduates.

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## Page 1: Survey introduction

As someone who has completed the Certificate in Advanced Veterinary Practice, you are being asked to participate in a research study that aims to investigate how vets holding the CertAVP feel this qualification has influenced their career progression, professional practice and level of contentment with work in the veterinary industry. Results from this research will help us improve the programme for future participants.

As a part of the study, you will be asked to answer a questionnaire, which will take less than ten minutes. Your participation is completely voluntary and you do not need to answer every question. Rest assured that you can stop participating at any time and your answers to the survey will be kept anonymous and confidential. Please do not hesitate to contact [e.holdsworth@liverpool.ac.uk](mailto:e.holdsworth@liverpool.ac.uk) if you have any questions about the project or the survey.

## Page 2: About you as a postgraduate

Before we start the survey questions, we would like a small amount of information about you as a postgraduate. This will help us to understand how the CertAVP influences different vets working in different industry sectors. All questions in this entire communication are optional.

How long ago did you graduate as a vet (i.e. gain your undergraduate veterinary degree)?

Please select no more than 1 answer(s).

- 5 years or less
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26 - 30 years
- 31+ years

How long ago did you gain your CertAVP?

Please select no more than 1 answer(s).

- 0-2 years
- 3-4 years
- 5-6 years
- 7-8 years
- 9-10 years

Which sector of the veterinary industry do you work in?

Please select no more than 2 answer(s).

- small animal
- production animal
- equine
- mixed practice
- academia
- pharmaceuticals
- Other

If you selected Other, please specify:

If your work involves seeing clinical cases, is this in a dedicated referral setting?

Please select no more than 1 answer(s).

- Yes
- No
- Not applicable

What sex are you?

Please select no more than 1 answer(s).

- Female
- Male
- Prefer not to say

If you are a resident of the United Kingdom, which region do you live in? Please enter the **first half** of your postcode only

Your answer should be no more than 4 characters long.

Which University provider did you use to gain your CertAVP? If the majority of your modules were completed with one provider, tick that box. If your modules were split evenly you may tick two boxes.

Please select no more than 2 answer(s).

- The University of Liverpool
- The University of Edinburgh
- The Royal Veterinary College
- Other

If you selected Other, please specify:

Thank you for providing this information. We will now move onto the survey statements.

## Page 3: Career advancement

The following questions relate directly to the survey outcomes. Please indicate your level of agreement with each statement and you may use the text boxes to explain your answers where available.

You feel that completing the CertAVP has positively influenced the advancement of your professional career.

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
You feel that completing the CertAVP has positively influenced the advancement of your professional career.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After completing the CertAVP you:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Received a pay increase associated with gaining your CertAVP.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Received a promotion as a result of gaining your CertAVP.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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You feel that completing the CertAVP has:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Allowed you greater autonomy in the workplace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resulted in you being responsible for more complex clinical cases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You feel that gaining your CertAVP has contributed to the following new aspects of your job:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Working as a mentor for colleagues in the workplace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Greater flexibility in your working schedule.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Taking-on clinical leadership roles, such as clinical director.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking-on management roles in your practice such as writing protocols or being involved in financial decision-making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use the following text box to explain your answer to the above question if you wish.

## Page 4: Professional practice.

You feel that completing the CertAVP has resulted in an overall improvement in your professional practice.

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
You feel that completing the CertAVP has resulted in an overall improvement in your professional practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You feel that completing the CertAVP has improved your ability to:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Work as part of a team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deal with risk and uncertainty in the workplace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Balance multiple responsibilities at work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Achieve a sustainable work-life balance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use the following text box to explain your answer to the above question if you wish.

You feel that completing the CertAVP has improved your confidence in:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Time management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicating with clients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assessment of animal welfare.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your ability to resolve ethical issues at work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You feel that completing the CertAVP has improved your understanding of:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Health and safety in the workplace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 The importance of 2 clinical governance 3 at work. 4 5 6 7 8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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9 You feel completion of the CertAVP has prompted the following changes to your working  
 10 environment:  
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12 Please don't select more than 1 answer(s) per row.  
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	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
14 15 16 17 18 19 20 Daily consideration 21 of evidence-based 22 medicine when 23 making decisions. 24 25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26 27 Frequent 28 consultation of the 29 RCVS Code of 30 Professional 31 Conduct for 32 Veterinary 33 Surgeons to help 34 with decision- 35 making in 36 challenging 37 situations. 38 39 40 41 42	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43 44 Regular down-time 45 at work where 46 veterinary evidence 47 is shared and 48 discussed e.g. 49 journal club. 50 51 52	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 54 Please use the following text box to explain your answer to the above question if you  
 55 wish.  
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# Page 5: Contentment with work in the veterinary industry.

You feel that gaining your CertAVP has improved your contentment with a career in the veterinary industry.

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
You feel that gaining your CertAVP has improved your contentment with a career in the veterinary industry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You feel that studying towards and gaining the CertAVP:

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Provided a structured CPD pathway for you as a postgraduate vet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helped your professional life more closely match your career expectations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Increased the intellectual satisfaction you feel in your professional life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encouraged you to continue learning throughout your career.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please use the following text box to explain your answer to the above question if you wish.

Your CertAVP qualification is a career achievement that you feel proud of.

Please don't select more than 1 answer(s) per row.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Your CertAVP qualification is a career achievement that you feel proud of.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## Page 6: Final page

Thank you for taking the time to complete this survey. The results will be important in highlighting avenues for development and improvement in the CertAVP curriculum. Publication of results will be communicated directly with all recipients of the survey.

Your answers are saved automatically, so you are free to close this webpage now to exit the survey.

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**Supplementary Table 1.** Comparing demographic data between the two groups of survey respondents, those distributed by the Royal College of Veterinary Surgeons (RCVS) versus those distributed by social media.

	RCVS Distribution (n=49)	Social Media Distribution (n=54)
<b>Years Graduated</b>	No significant difference, P=0.27	
<10	34.7% (n=17)	46.3% (n=25)
10-20	49.0% (n=24)	46.3% (n=25)
>20	16.3% (n=8)	7.4% (n=4)
<b>Years Certified</b>	No significant difference, P=0.26	
<5	79.6% (n=39)	74.1% (n=40)
>=5	20.4% (n=10)	25.9% (n=14)
<b>Sex</b>	No significant difference, P=0.22	
Female	75.5% (n=37)	83.3% (n=45)
Male	22.4% (n=11)	16.7% (n=9)
Did not answer	2.0% (n=1)	0
<b>Veterinary Sector</b>	Significant difference, P=0.007*	
Equine	22.4% (n=11)	46.3% (n=25)
Small Animal	55.1% (n=27)	25.9% (n=14)
Production Animal	4.1% (n=2)	5.6% (n=3)
Other	18.4% (n=9)	22.2% (n=12)

\* Veterinary sector RxC table did not meet Cochran's criteria (Rosner 2000). Production animal and 'other' variables were combined to meet the criteria. The resultant P value is based on this combined table.

### Supplementary Material Item 1: Complete free text responses divided by survey section.

#### Section 1 – responses related to the outcome of Career Advancement:

'I was already a clinical director involved in leadership, etc'

'I started a clinical pathology residency at the end of my CertAVP so it did not have any impact on clinically when I finished. I do feel that it helped me secure my residency place.'

'People will discuss cases but no mentoring'

'I was promised a pay increase and never got one. I was told what area I had to study by work while other male vets were given a choice'

'You are considered as slightly more experienced first opinion veterinarian.'

'There is not the space for career advancement in my current practice'

'I don't work in clinical practice and completed a Cert in business management so the clinical questions don't apply to me'

'The CertAVP helps you gaining clinical and professional knowledge but I don't feel it helps developing your managerial skills (unless you have chosen business modules). It gives you more clinical confidence and this is useful when you are dealing with cases or mentoring'

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3 colleagues. The financial gain in my practice is not that significant and having achieved the  
4 CertAVP hasn't allowed me to obtain a more flexible working schedule.'

5  
6 'Completing CertAVP helped me get a residency, then residency training  
7 replaced/overwhelmed any improvement the CertAVP might have contributed.'

8  
9 'I am a partner and already had leadership and mentoring roles. BUT I am better able to do  
10 these jobs these days.'

11  
12 'I get asked about decisions on somethings that make me feel very much part of the team and  
13 a valued team member and that the bosses value my opinions, not sure if this is related to the  
14 AP status or just that my nature means I try to be approachable and take an active interest in  
15 the business and want it to do well.'

16  
17  
18 'Employer hasn't recognised this to date.'

19  
20 'May result in these things if I were to move jobs but no change in my current position'

21  
22 'I had to move jobs to gain flexibility and financial gain from my CertAVP. I was a clinical  
23 director prior to my certificate but struggled to complete it in this role.'

24  
25 'It's given me the confidence to set up on my own with a view to bringing in more vets as we  
26 get busier. This course has solidified my knowledge and given me confidence in my skills.  
27 Also if I pass next week will allow me to be different from the other practices round here'

28  
29 'My employer does not recognise the Cert as being useful. Non of the 4 clinical directors  
30 hold a cert.'

31  
32 'Financial rewards are not considered until advanced practitioner status is gained'

33  
34 'I also have a European diploma so feel this has influenced my career more than the  
35 CertAVP, however the CertAVP helped with revision and progression through the diploma  
36 and I can help younger colleagues with the cert as I have done it'

37  
38 'Was already a director in a practice prior to doing Cert AVP so remuneration and  
39 professional responsibilities unchanged in relation to completion of Cert AVP'

40  
41 'Allowed me to differentiate myself when moving jobs. There was no progression within my  
42 clinical role at all'

43  
44 'No recognition whatsoever in gaining this qualification. Since obtaining it I worked in  
45 clinical practice for some time and moved to regulation a few years ago'

46  
47 'Pay rise once I get designated certificate not CertAVP'

48  
49 'I have completed clinical modules but also completed CertVBM which has been most useful  
50 in helping me assess my decision to become director of our practice and helped me managing  
51 the practice'

52  
53 'Being a senior member of the veterinary team I already had autonomy and was responsible  
54 for complex cases. Studying for the CertAVP however has improved my approach to these  
55 cases. The CertAVP was undertaken for personal progression rather than progression within  
56 the work place'

**Section 2 – responses related to the outcome of Professional Practice:**

‘Completing the CertAVP requires significant time commitment’

‘The CertAVP required a large amount of 'home' time to complete. It is not however the CertAVP's fault I am a work-a-holic!’

‘during studying, I was so stressed my mental health was poor and it caused physical damage to my eyesight. There was not enough time to do what they wanted on top of work, that said the coursework in modules was achievable. The bit that wasn't was the synoptic exam. There is little guidance to tell you what it is like, and the conditions in my exam were certainly not common conditions. There needs to be more guidance and some sort of practice questions to help learn what is expected’

‘Almost negatively affected work life balance as now want to research cases more fully and don't have time in work so do at home. Also vets message me as their mentor out side of work a lot’

‘as an experienced graduate who started their career in truly mixed practice, dealing with risk and uncertainty has been a constant feature of my professional life’

‘I don't think a CertAVP has changed any of these’

‘EBVM practice has gone out of the window due to COVID. But I'm resolved to improve this in time.’

‘limited time to have journal clubs in practice, but try to do them on the run!’

‘Unfortunately, employer feels this is unnecessary’

‘would love to be able to say that it led to regular down-time at work to share evidence!’

‘Helps real with risk and uncertainty within cases / management but not in the workplace environment per se’

‘Cert AVP has improved my clinical knowledge - has no relation on my ability to work in a team, deal with risk or lead my team’

‘It helped advance my clinical knowledge. This is the only advantage to me in doing this qualification’

‘Whilst the certAVP has been an invaluable learning experience, as a more mature veterinary surgeon it has not changed how I have perceived the work place, that has been gained over the years working in a positive veterinary environment’

‘We have informal discussions about cases but no allocated time for clinical discussions - that would be lovely!’

‘Practice in NZ so RCVS code is irrelevant. Was already involved in clinical governance and had been for 5 years prior to Cert AVP’

‘Practices I worked at were only bothered about profit, not making time to evaluate procedures etc. and not interested in bettering themselves. I'm not surprised the corporates are taking over...’

1  
2  
3 ‘Studying for the CertAVP has definitely made me question the information I read and more  
4 critically assess the information provided’  
5

6 ‘I would love to have had a journal club but the practice considered it a waste of time. In  
7 some ways the CertAVP increased my frustration in 1st opinion equine practice.’  
8  
9

### 10 11 **Section 3 – responses related to the outcome of Industry Contentment:** 12

13 ‘I would have wanted to continue learning whether or not I did the CertAVP - but it did not  
14 act as the jump to residency I wanted it to - I do not feel proud of the CertAVP - I'd feel  
15 proud if I managed to pass the synoptic - but at the moment it feels impossible and like the  
16 CertAVP was a waste of time and money.’  
17

18  
19 ‘Have always done a large amount of CPD regardless’  
20

21 ‘I have always been motivated towards learning. Doing the CertAVP has been part of it,  
22 however I would have continued to do CPD even if I wouldn't have done the certificate. I will  
23 still continue learning but It will be despite the certificate and not because of it.’  
24

25 ‘These statements would likely apply to those less than five years graduated.’  
26

27 ‘I hoped that studying for the certificate would provide me with the continued interest and  
28 investment in myself that my career had failed to provide after being repeatedly passed over  
29 for partnership opportunities’  
30

31 ‘Initially after completing cert AVP, I said i would never study again. After 4 years I am  
32 thinking of starting another cert.’  
33

34 ‘Well structured qualification sadly not well respected within the profession’  
35

36 ‘The CertAVP course provided by Liverpool provides an excellent structured learning  
37 experience. The combination of lectures, discussion boards, journal clubs, case reports, case  
38 report discussions and examinations all provide different learning methods and help cement  
39 the information gained. This is all backed up with excellent online support by [name  
40 redacted]. I would definitely recommend the Liverpool course to any’  
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