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Wildlife nursing - part two: an investigation into current challenges

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ABSTRACT: British wildlife nursing is not included in the curricula for most training courses despite Registered Veterinary Nurses (RVNs) being expected to fulfil their professional, legal and ethical responsibilities in practice. These responsibilities should be considered to strike a balance between intervention and unnecessary suffering. As there is limited peer reviewed literature into veterinary interventions towards wildlife casualties, this descriptive and analytical study aimed to identify the major challenges Registered VNs (RVNs) and student VNs (SVNs) face when treating wildlife. Part two of this series of articles outlines the project carried out to gauge nursing competency, determine valuable education activities, and create a nursing model.

Keywords: wildlife; veterinary nursing; challenges; attitudes; education

Introduction

Considerations of the Royal College of Veterinary Surgeons (RCVS) Code of Professional Conduct for VNs (RCVS, 2012), Veterinary Surgeons Act (VSA, 1966), Wildlife and Countryside's Act (WCA, 1981), Animal Welfare Act (AWA, 2006) and ethical obligations are required to strike a balance between intervention and unnecessary suffering when presented with a wildlife casualty. Despite these responsibilities, British wildlife nursing theory are not included in most VN training curricula. With limited peer reviewed literature, attitudes towards wildlife casualties and VN challenges remain largely unexplored.

Aims

The main aims of this project are to;

- Identify the major challenges RVNs face when treating wildlife casualties
- Create a wildlife casualties nursing care model.

Objectives

The main objectives to complete the aims of the study are to;

- Identify the top five challenges faced by VNs nursing wildlife
- Identify competency levels in providing care for wildlife species
- Explore the wildlife-specific legislation knowledge held
- Investigate admission processes
- Identify the top three educational activities to improve wildlife nursing knowledge.

Hypotheses

The following hypotheses will be tested;

- The major challenges would be resource-based like expenses rather than theory-based such as legislation
- Competency would be associated with theory in education, number of years' experience, practice type and legislation knowledge.

Methods and materials

Study design

A descriptive and analytical design was used as a cross-sectional online survey for VNs. Demographic data and wildlife nursing theory coverage in training were gathered and a Likert scale was implemented to rate

various challenges. The three most valuable educational activities to improve the wildlife nursing knowledge and the key considerations when faced with a wildlife casualty were queried. Simple selection questions regarding wildlife admit forms usage and specific legislation knowledge were implemented. Practical use and nursing model awareness was questioned along with whether there was a need for a specific model to be implemented in education and practice for wildlife casualties. The pilot test resulted in the omission of a question asking to rate nursing competency on a Likert scale from a UK wildlife species list as it was deemed too time consuming.

Data collection and sampling

There are approximately 15,000 RVNs and 5300 SVNs in the UK according to the RCVS (2018) so to introduce the survey to this population, it was shared on VN social media groups. SVNs in practice for three months or more were sampled to ensure they experienced time in a clinical environment. The Royal Veterinary College’s Social Sciences Research Ethical Review Board granted ethical approval for this project. The survey remained online between 12/01/2018 and 02/02/2018 using a self-selection sampling method.

Data analysis

Data were transferred to a spreadsheet. ‘Total number of species a nurse was competent in nursing’ (total species score; TSS) were created through collapsing variables and creating histograms. Other variables were summarised using the number and percentage from each proportion. Associations between TSS and categorical variables were assessed using Mann-Whitney and Kruskal-Wallis tests. Significance level was set at 5% (p=0.05).

Results

Sample

There were 318 respondents consisting of 221/318 (69.5%) RVNs and 97/318 (30.5%) SVNs, with the majority female (310/318; 97.48%). There were 102/221 (46.15%) RVNs qualified for less than three years with 62/221 (28.05%) qualified between 4–9 years and 57/221 (25.79%) qualified over 10 years prior to the survey. Current practice type was summarised (Table 1). With regards to training route, most participants selected the diploma route (167/318; 52.2%), 110/318 (34.59%) chose

Table 1. Respondent’s practice type number and percentage.

Practice type	Number of RVNs out of 318	Percentage of RVNs (%)
Large animal	0	0
Exclusively emergency	1	0.31
Exclusively exotic	6	1.89
Charity	7	2.20
Other	8	2.52
Small animal referral	16	5.03
Mixed animal	21	6.60
Combined first opinion and referral	67	21.07
First-opinion	191	60.06

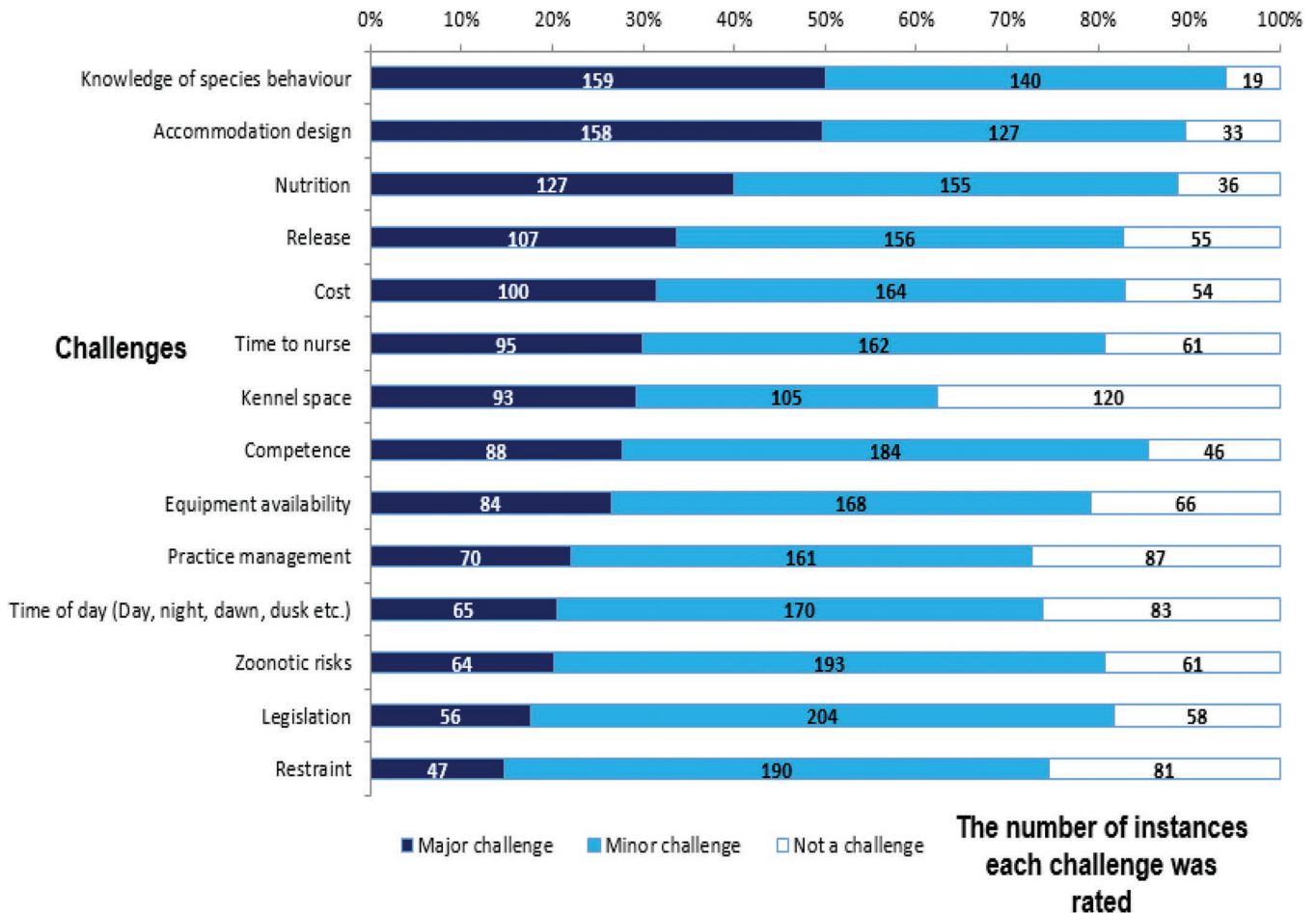


Figure 1. The instances each challenge was rated as ‘major challenge’, ‘minor challenge’ and ‘not a challenge’.

Number of respondents competent in nursing the species

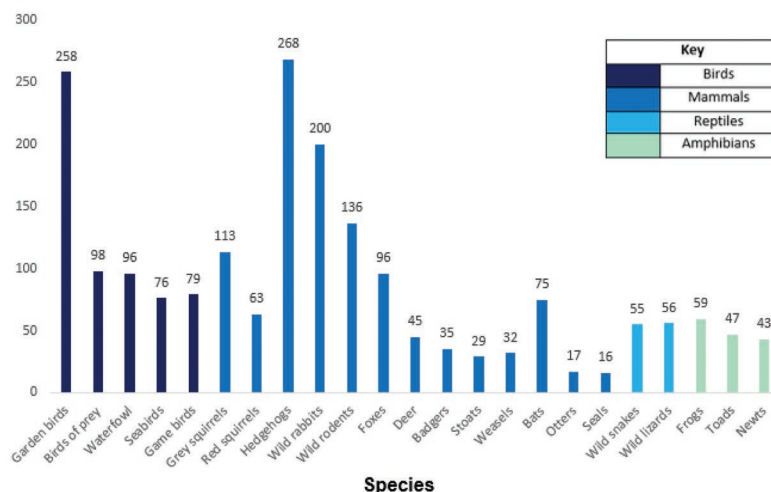


Figure 2. The number of respondents competent in nursing wildlife.

the degree and 41/318 (12.89%) had become RVNs on a pre-diploma route. Most RVNs (171/221; 77.37%) and SVNs (73/97; 74.49%) did not receive wildlife nursing theory during their training or it would not be covered in their theory.

Important considerations and challenges

Diet (246; 77.36%), expression of normal behaviour (191; 60.06%) and accommodation (175; 55.03%) were the most important wildlife nursing considerations. Release (157; 49.37%), zoonosis (77; 24.21%), legislation (49; 15.41%), rest (37; 11.64%), interaction with different species (15; 4.72%) and interaction same species (7; 2.20%) were also selected. **Figure 1** illustrates the instances each challenge was rated on a Likert scale.

Competency

Figure 2 illustrates the proportions of species the respondents felt competent in nursing with accordance to the AWA (2006) where 22/318 (6.92%) respondents did not feel competent in nursing wildlife. The histogram generated from the TSS (range= 0–23 species; median = five) had a skewed distribution.

Regardless of whether RVNs received theory on wildlife nursing, median TSS was five (range = 0–23). SVNs who received or were due to receive theory had a median TSS of five (range = 1–20) and those who did not had four (range = 0–17). The Mann Whitney test resulted in a non-statistically significant value for RVNs ($p=0.98$) and SVNs ($p=0.25$). Summary statistics between RVN experience and TSS was conducted (**Table 2**) and the relationship was

statistically significant ($p=0.02$) according to the Kruskal Wallis test. Summary statistics between practice type and TSS was completed (**Table 3**). Data from ‘exclusively wildlife’ and ‘exclusively emergency’ centred practices were omitted owing to there being one individual from each category. The Kruskal Wallis test resulted in a statistically significant relationship between practice type and TSS (p value = 0.004).

Wildlife legislation knowledge and admission processes

More respondents (279/318; 87.74%) selected ‘true’ when presented with the statement; “A license is required to rehabilitate and release grey squirrels back

into the wild”. When presented with the statement; “Legislation states that species considered as ‘pests’ should be euthanised upon arrival in practice regardless of health status”, 180/318 (56.60%) respondents correctly answered ‘false’. When asked about reference to the AWA (2006) in practice, 173/318 (54.40%) stated they do this with a median TSS of five whereas those who did not had four, both ranges of 0–23 species. The Mann Whitney test indicated a statistically significant relationship between reference to the Act and TSS ($p=0.028$). Regarding admission procedures, 87/318 (27.36%) respondents stated their practice had a specific wildlife admit form and 92/318 (28.93%) had the rescuer sign over the wildlife casualty to the practice.

Education

Continued Professional Development (CPD) courses (238; 74.21%), theory in training (210; 66.04%) and practical lessons in training (168; 52.83%) were the most valuable educational activities to improve the wildlife nursing knowledge. Lunch and learns (112; 35.22%), online webinars (103; 32.39%), online literature (63; 19.81%) and physical literature (42; 13.21%) were also selected. More respondents used care models for SVN training (171/318; 53.77%) rather than for guidance (55/318; 17.30%) and to record nursing activities (31/318; 9.75%). The majority had encountered the Ability Model by Orpet and Jeffery (Orpet & Welsh, 2011) in theory, practice or both (245/318; 77.05%). When asked if there is a need for a specific care model for wildlife

Table 2. Median and range values of number of years since RVN qualification and TSS.

Number of years since qualification as a Registered Veterinary Nurse	Median TSS	Minimum number of species	Maximum number of species
10–12	4	0	11
1–3	4	0	21
<1	5	0	20
4–6	5	0	22
7–9	6	0	23
>13	7	1	22

Table 3. Median and range values of practice types and TSS.

Practice type	Median TSS	Minimum number of species	Maximum number of species
Small animal referrals	5	0	13
Small animal first-opinion	5	0	21
First opinion and referral	5	0	23
Mixed animal	5	1	15
Charity	6	0	20
Other	7	3	23
Exclusively exotic	22	8	23

nursing in education and practice, 249/318 (78.30%) agreed with 171/318 (53.77%) preferring to use a proposed model for guidance rather than to record activities.

Discussion

Challenges

The main theory-based challenge was 'knowledge of species behaviour' where limited knowledge results in inadequate care quality (Mullineaux, 2016). 'Accommodation design', 'nutrition' and 'release' could have been construed as either resource or theory-based. 'Nutrition' could have been interpreted as ideal diet *knowledge* rather than the ability to source hospital alternatives to natural food (Lewis et al., 2012) and 'release' may have been interpreted as the action where inadequate admission information can be problematic (Williams, 2010). No organisation accepting sole responsibility for wildlife casualties, reimbursement offer exclusions and the general public's expectation that veterinary practices treat charge free (Barnes & Farnworth, 2017) make 'cost' a limiting factor for hospitalisation. 'Cost' influences other resource-based aspects like kennel space and equipment (Mullineaux, 2014). The hypothesis where major challenges were resource-based was refuted.

Research from Barnes and Farnworth (2017) found 'knowledge/skills', 'facilities/equipment', 'money/expense', 'time' and 'uncertainty about British wildlife law and policies' were the main restrictions veterinary practices cited when faced with wildlife casualties. In comparison, 'time to nurse', 'kennel space', 'equipment availability' and 'legislation' ranked lower in this study. The need to hospitalise other inpatients and prevent predator/prey interactions pose problems with limited kennel space (Couper & Bexton, 2016). 'Legislation' likely ranked higher in the 2017 study because the Veterinary Surgeon ultimately decides to administer treatment, euthanise or release thus influencing the RVNs actions (Mullineaux, 2017). Barnes and Farnworth (2017) study sampled veterinary practices in general including veterinary surgeons, veterinary nurses, management and care assistants; potentially over- or under-representing the differences in attitudes.

Competency

The hypothesis where competency was associated with experience was accepted. The statistically significant association between RVN experience and TSS indicated experience contributed more to a nurse's competency. Those qualified for less than a year had

a median TSS of five (range = 0–20) whilst those qualified over 13 years ago had a median of seven (range = 1–22). RVNs are likely to value interactions with presented wildlife (Barnes & Farnworth, 2017) becoming more accustomed with nursing these species with experience (Mullineaux, 2016). The need for education could still be important despite there being no statistical association between theory and TSS (refuting this hypothesis) if the ambiguous challenges were considered as theory-based.

Garden birds, hedgehogs, birds of prey, wild rabbits and seabirds, were the most commonly presented in practice (Barnes & Farnworth, 2017); similar to the species RVNs were most competent in nursing in this present study indicating links between prevalence within practice and continued exposure. Domestic bird, rodent and rabbit care are covered within RVN education (Monsey & Devaney, 2011) so when presented with wild variants, husbandry skills transfer could occur (Fletcher & Lea, 2012). Reptile husbandry is also covered in education (Monsey & Devaney, 2011) yet small proportions of VNs are competent in treating the wild variety; which were minimally selected in both studies.

Statistical association between practice type and competency was accepted ($p=0.004$) where resources held and familiarity with species influence the care quality. An 'exclusively exotic' practice (median TSS = 22; range = 8–23 species) is more likely to have the space, equipment and expertise compared to a small animal referral centre (median TSS = five; range = 0–13 species) which are more accustomed to pre-arranged appointments with detailed histories. Similarly, charity centres (median TSS = six; range = 0–20 species) would be accustomed to treating patients with minimal funding (Thornley, 2014).

Legislation knowledge and admission processes

Most understood grey squirrels can only be rehabilitated and released with a license (Section 14, WCA, 1981) where their prevalence in recent media, continuously mentioning their non-indigenous and invasive nature, could have affected this outcome (Barkham, 2017). There were only 42 individuals (13.25%) difference between groups in the pest-related statement indicating animals labelled as 'pests' are likely euthanised despite no legislation enforcing this (Kerr, 2010). Caution should be carried with inference from both statements, as they are only two specific topic questions.

Association between legislation knowledge and competency was accepted. The statistically significant relationship ($p=0.028$) between reference to the AWA (2006) and TSS suggested specific legislation knowledge could influence practical nursing as supported by the median TSS and ranges between those who referred to the act.

Most respondents in practices did not have a wildlife admit form nor have the rescuer sign over the casualty, indicating a hindrance in recovery and release owing to a minimal information (Williams, 2010). Molony et al. (2007) concluded triage and initial clinical diagnosis, which require sufficient admission information, was the most significant predictive recovery success factor. Ownership and responsibility would still lie with the rescuer (Section 10, WCA, 1981) creating issues if the rescuer were dissatisfied with potential euthanasia (Harris & Jefferies, 1991). As 'release' was a major challenge, admission procedures in practices require a review.

Education

Most RVNs stated wildlife nursing theory was not included in their studies supporting the claim there is inadequate training (Barnes & Farnworth, 2017). A Veterinary Surgeon cannot presume a veterinary nurse is competent in wildlife care as this contradicts Schedule 3 in the VSA (1966) which requires satisfaction that the RVN is qualified to carry out directed treatments. Importance on more pre- and post-registration guidance were identified as CPD and more theory and practical training ranked high as the most valuable educational activities to improve the knowledge body.

Nursing care model

Experience was more valued throughout this study than theory, yet the majority stated they would welcome a specific wildlife care model in education and practice, indicating nursing models are relevant in modern practise. Most stated nursing care models are used to train SVNs to guide, rather than prescribe practice (Pridmore et al., 2010). The proposed 'Wildlife requirements model' (Figure 3) was primarily created for guidance, incorporating legislation, professional responsibilities, literature and current findings. With adaption, recording nursing activities could occur. The five needs from the AWA (2006) and the Ability Model by Orpet and Jeffery (Orpet & Welsh, 2011) style were incorporated owing to the respondent's familiarity. A wildlife casualties decision-making process was included to remind the VN of correct admission procedures and treatment options following veterinary

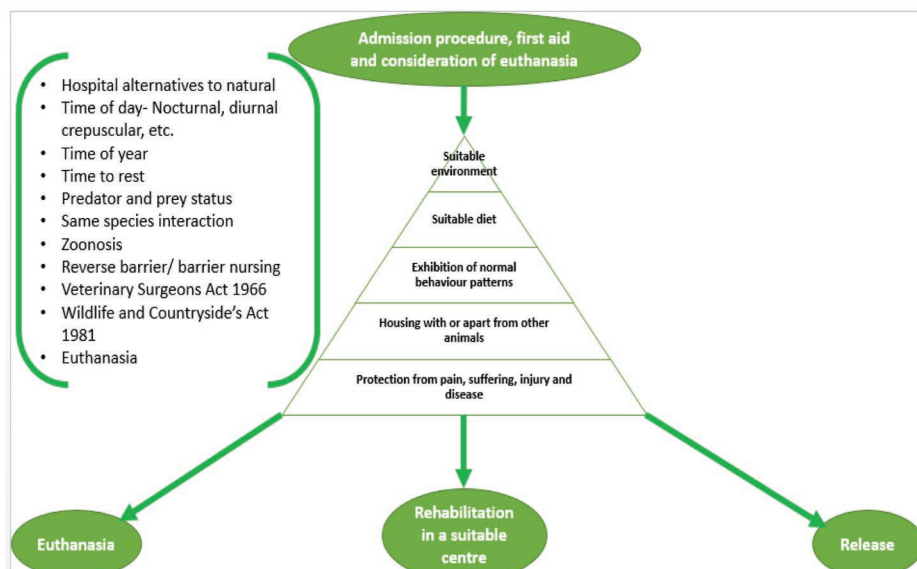


Figure 3. 'The wildlife requirements model'.

treatment, including euthanasia; which should be considered throughout treatment (Mullineaux, 2017). The prompts next to the main figure were inspired by the considerations and major challenges selected to encourage the VN to investigate specific care aspects via independent research to revisit underpinning theories to create a holistic approach (Pridmore et al., 2010).

Limitations

Selection, sample and recall biases were apparent as the sample represented those present on social media, most were from online wildlife groups for veterinary professionals which relied on VNs remembering their curricula. SVNs who had not spent three months or more in practice were disqualified. There was limited primary peer reviewed literature for comparison as identified by Mullineaux (2014), Barnes and Farnworth (2017) and current literature reviewing for this study.

Conclusions

Experience was more valued than theory by VNs in influencing wildlife nursing competency, yet theory was still desired owing to most major challenges being knowledge-based. Competency cannot be presumed by Veterinary Surgeons when delegating responsibilities. Pre- and post-registration education was sought as CPD to include theory and practical training. The proposed nursing care model in clinical settings could be used for guidance to create holistic and specific approaches through encouraging independent investigations. Overall, a better wildlife nursing

understanding could lead to the fulfilment of legal, professional and ethical duties expected from RVNs.

Suggestions for further study

This research has added to a limited knowledge body thus contributing to further research by providing more valuable discussions for comparison. Similar research objectives could be investigated with Veterinary Surgeons or practice management samples, more 'true or false' style questions could assess care and legislation understanding, and the proposed model implementation within practice or education to trial could occur.

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