OCCUPATIONAL STRESS IN VETERINARY SUPPORT STAFF

by

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A DISSERTATION

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ABSTRACT

Limited information exists about veterinary support staff and the occupational stressors of this workforce. Concern for workers in occupations of high or prolonged stress such as caregivers in hospitals and emergency situations has been noted in many studies. Occupational stress can cause harmful physical and emotional outcomes when the homeostatic balance is upset. This study explored occupational stress, health status, and coping strategies of veterinary support staff. A mixed-method collected quantitative and qualitative data. Demographic information and three validated instruments were administered using a web-based survey; the Short Form-36 Version 2, Modified for Veterinary Nurse Stress Scale, and Ways of Coping to gain the quantitative data. The survey was administered to a convenience sample of 104 members of the Alabama Veterinary Technician Association and one-on-one interviews were conducted to gather rich descriptive information from workers in this profession.

A 75% response rate was reached in a two month period. The findings suggested that workload, death and dying, and conflict with veterinarians were the prominent sources of stress. The most frequent coping strategies used were Self Controlling, Planful Problem Solving, and Positive Reappraisaisal. The mental health scores of the participants were found to be lower than the U.S. norms of 50. Quantitative and qualitative data
validated each other in all aspects of mental health, indicating that veterinary support staff have low mental health status; with 45% below the U.S. norms and 42% at U.S. norms.

A correlation with health status and occupational stressors indicated those with higher perceived stress have lower mental and physical health. Interviews supported this finding. Six out of eight coping strategies were found to have a relationship with mental health status Accepting Responsibility, Escape Avoidance, Positive Reappraisal, Seeking Social Support and Self Controlling.

The findings from this study indicate this is a vulnerable workforce experiencing high stress affecting the health of the workers. The coping strategies utilized used by this workforce have been linked with negative outcomes. Further investigation into interventions targeting this occupation is needed to promote a healthy workforce.
DEDICATION

This study is dedicated to my friends, Carl and Rosemary Schultze, who always encouraged, listened, and understood. Thank you, Carl for sharing that first computer and your books with me. I will always miss my friend, Rosemary but her smile and words of encouragement are forever ingrained in my heart.
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<th>Abbreviation</th>
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<tr>
<td>ASBVME</td>
<td>Alabama State Board of Veterinary Medical Examiners</td>
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<td>AVMA</td>
<td>American Veterinary Medical Association</td>
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<td>AVTA</td>
<td>Alabama Veterinary Technician Association</td>
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<td>BLS</td>
<td>Bureau of Labor and Statistics</td>
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<td>CPR</td>
<td>Cardio Pulmonary Resuscitation</td>
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<td>CVT</td>
<td>Certified Veterinary Technician</td>
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<td>IRB</td>
<td>Institutional review Board</td>
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<td>LVT</td>
<td>Licensed Veterinary Technician</td>
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<td>MVNSS</td>
<td>Modified for Veterinary Support Staff Nursing Stress Scale</td>
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<td>NAVTA</td>
<td>North American Veterinary Technician Association</td>
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<td>NIOSH</td>
<td>National Institute of Occupational Safety and Health</td>
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<td>NSS</td>
<td>Nursing Stress Scale</td>
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<td>PLIT</td>
<td>Professional Liability Insurance Trust</td>
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<td>RVT</td>
<td>Registered Veterinary Technician</td>
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<tr>
<td>SF-36V2</td>
<td>Short Form Health Survey Version 2</td>
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<td>WCQ</td>
<td>Ways of Coping Questionnaire</td>
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CHAPTER 1

INTRODUCTION

As Americans increase their workday and workload they increase their risk of stress in the workplace (Kowalski, 2002). Many workers have multiple jobs or extended hours in the workplace which may cause extended exposure (NIOSH, 2008). While stress is a normal function of the mind and body, a high level of stress for a prolonged duration may lead to stress related illness (Hubbard, 1998). Recovery from everyday stressors is part of the psychophysiological effort-recovery mechanism that maintains homeostatatic balances between sympathetic and parasympathetic activity; however in cases of chronic stress in the workplace, illness may occur (De Lange, 2009). Stress can cause stimulation in a positive manner when the worker possesses the necessary skills (Hallin, 2006). High job demands and low job control have been established as risk factors for occupational stress leading to illness (Belkic, 2004). Concern for workers in occupations of high or prolonged stress such as caregivers in hospitals, nursing homes and emergency workers have prompted interventions targeting these workers (Shapiro, 2005). Research on the changing organization of work by the National Institute for Occupational Safety and Health (NIOSH) indicates increased trends in stressful and hazardous circumstances in the workplace (NIOSH, 2008).

Researchers, Rolhf and Bennett (2005), suggest that animal caregivers are an at risk population for post-traumatic stress. Most individuals enter the field of veterinary medicine because of a deep caring for animals (Rolf, 2005). The animal health care team,
including technicians and assistants, may be particularly vulnerable to compassion fatigue because of the deep passion invested in caring for patients (Cohen, 2007). Moral stress may also be a contributor to the occupational stress experienced by veterinary support staff as euthanasia may be performed on healthy animals or because of monetary constraints of pet owners (Rollins, 1986). Physical and psychological health concerns have been reported in workers who euthanize animals (Frommer & Arluke, 1999). Euthanasia has been noted as one of the primary causes for occupational stress in veterinary support staff (Arluke, 1991).

**Statement of the Problem**

Occupational stress is defined as “the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker” (NIOSH, 2008). Stress in the workplace has been shown to cause many illnesses both chronic and acute. Decrease in fertility in women is known as one physical result of occupational stress (Barzila, 2006). Stress in the workplace has been shown to cause an increase in blood pressure because of working conditions in many occupations (Brown, 2003). Working consistently more than 48 hours in one week doubles the risk of coronary heart disease (Trimpop, 2000). Research has demonstrated a correlation between long work hours, high demands at work, job insecurity, low control, and violence at work with high stress levels which may lead to illness (Hancook, 2001).

Specifically in nurses, it was determined that many chronic health related conditions such as hypertension, depression, anxiety, obesity, and substance abuse were related to occupational stress (Blegen, 1993). In nurses, acute health related conditions
such as back pain; headaches, anxiety, and fatigue have been related to stressors in the workplace. High stress and low job satisfaction have been found to be caused by heavy workloads and long hours in health care settings (Shrader, 2001).

Stressors can be multifaceted. There are environmental stressors such as noise, temperature, or other working conditions which may cause a stress to the employee (NIOSH, 2001). There are also psychosocial stressors which may be linked to a particular event within the workplace. Psychosocial stressors may include traumatic events, employee conflicts, or ethical conflicts. Other types of stressors include traumatic and cumulative stress which may result from critical incident stressors. Cumulative stress is identified as the type of stress which leads to burnout (Kowalski, 2002). Burnout has been described by Aronson (1990) as physical, emotional and mental exhaustion attributed to long term involvement in emotionally demanding jobs. The most extreme form of stress is post traumatic stress which may result from a catastrophic, extreme traumatic stressor, or terrifying experience (Hubbard, 1998).

Worker demographics such as age, gender, education, and social economic status help to determine organizational work practices. These practices are also driven by global economic and political developments and policies. The labor supply may also be a determinate of the worker demographics and thus influence organizational practices and design. Labor supply can have an influence on the health outcome of individuals in the workforce because of a lack of trained individuals in a labor force may cause a great demand on the current workforce. Technological innovations may create challenges for the aging workforce however they may also be a positive tool in the workplace. The economy plays an important role in the overall role of the organization of work as
companies may downsize in a tough economic time. Organizational practices have been changing in the past 10 years with differences in human resource policies, supervisory practices and changes in benefits (NIOSH, 2008). Workers’ exposure to physical and chemical hazards can be increased with organizational practices which include long hours and decreased staff. Exposures to physical and chemical hazards may also be increased by workers with multiple jobs. Some of the aspects of reorganization such as increased flexibility, responsibility and learning opportunities may increase job satisfaction and well being (NIOSH, 2008). There are underlying mechanisms of individuals which include biological responses of the mind and body to stressors. These stressors may be caused by organizational practices as well as physical and chemical exposures, behavioral differences, cognitive responses to stress, job design, and environmental stressors. Illness, injury, dysfunction, and disease may result as an imbalance or overload of interaction of the forces of work organization.

Reorganization can decrease injury and illness for workers by decreasing exposure to hazardous chemicals, implementing new technology, and work time flexibility (NIOSH, 2002). Rescheduling, workload reduction, and role clarification are examples of reorganizational interventions which may help to reduce stress on the worker (NIOSH, 2002).

Duties of the veterinary support staff vary by practice, expectation of veterinarians, job title, and credentials. The Alabama Veterinary Practice Act (2008) states the duties of a LVT as teeth cleaning, performing enemas, electrocardiography, application of bandages, cauterization of bladders and placement of indwelling catheters, gavage, ear flush, surgical site preparation, diagnostic imaging, operation of x-ray and
ultrasound equipment, oral and rectal administration of radio opaque materials, 
adadministration of medications by intravenous, subcutaneous, or intramuscular injection, 
oral medications, topical medications, administration of pre anesthetic drugs, oxygen 
therapy, administration of immunological agents collection of tissue, urinalysis, 
hematology, parasitological, exfoliate cytology, microbiology, blood chemistry, serology, 
coprology, removal of partially exposed foreign objects, removal of sutures, euthanasia, 
endotracheal intubation, blood administration and collection, fluid aspiration, 
interperitoneal injections, monitoring of vital signs of anesthetized animals, application of 
splints, induce anesthesia, suturing skin lacerations, assist the veterinarian during surgery, 
supervise unregistered assistants. In emergency situations a LVT may apply tourniquets, 
bandages, administer pharmacological agents and parental fluids, perform CPR, and 
apply external supportive care for burn cases.

AVTA agreed with the duties characterized by the Alabama Veterinary Practice 
Act listed above and added the following duties not listed by the practice act: 
management of a veterinary practice including scheduling, collections, hiring, perform 
human resource duties, research, counseling of clients, sales of veterinary products, 
maintain medical records, maintain controlled substance logs, order hospital equipment, 
instrumants, supplies and maintain inventory, maintain regulatory records and standards, 
grooming of animals, pre and post op care of surgical cases, maintain and sterilize 
surgical instruments and surgical packs, instruction of veterinary and veterinary 
technician students. This list is not exhaustive however it is representative of the 
expectations of the skills of LVT in the state of Alabama. Non-licensed veterinary 
assistants duties as described by the Alabama Veterinary Practice Act are under
immediate supervision of a licensed veterinary technician assistants may perform the following tasks: blood collection and administration, surgical site preparation, gavage, diagnostic imaging, intravenous injection not prohibited, laboratory collection and preparation, application of bandages, ear flush, electrocardiography, removal of sutures, euthanasia, cleaning, sterilization.

Significance of the Study

There is limited knowledge of the occupational health status of veterinary support staff. Rich descriptive information about this occupation is very limited. One of the goals of this study is to provide a description of the role of veterinary support staff in the veterinary profession. Understanding the role of the veterinary support staff will assist in development of interventions for a healthy workforce. This study seeks to describe the organization of work in this field to understand the stressors involved in the task assigned to veterinary support staff. Stressors may be lessened by a change or reorganization of work. It is important to gain an understanding of the current work organization of this occupation to aid in development of improved protocols or work environment. The demand for more workers in this field continues to grow however the reasons for those leaving the profession prematurely are not clearly understood. It is hopeful this study will provide information which may be useful in developing strategies to increase the longevity of a worker in this career. The increase in this occupation demands a review of the risk of stress in veterinary support staff to prevent or provide interventions to prevent or minimize illness and to protect the economic loss of occupational illness due to stress.
Purposes of the Study

The overall goal of this study was to examine the duties, occupational stress, health status, intention to leave and coping skills of veterinary support staff in Alabama. A sequential mixed method was utilized to ensure completeness in the exploration of this occupation. Initially, quantitative data was captured through the use of reliable and validated survey instruments. Following the analysis of the quantitative data, one on one interviews obtained rich and descriptive information to provide specific descriptions of stressors, health status, intention to leave and coping skills.

Specific Aims

The specific aims of this mixed-method study were to;

1. Characterize and determine the levels of stress of veterinary support staff in Alabama.
2. Characterize the health status of this workforce in Alabama.
3. Determine veterinary support staff’s intent to leave present job or profession.
4. To determine stress coping skills of veterinary support staff.
5. To characterize job specific duties, stressors and working environments which may cause high levels of stress.

Quantitative Research Questions

In the quantitative phase of this sequential mixed-method design the research questions were:
1. Does veterinary support staff in the state of Alabama experience high occupational stress?

2. What are the potential occupational stressors in a veterinary setting?

3. What is the physical health status of veterinary support staff in Alabama?

4. What is the mental health status of veterinary support staff in Alabama?

5. Is there a relationship between occupational stress and the physical and mental health status of veterinary support staff?

6. Is there a relationship between coping strategies used by veterinary support staff and health status?

7. Is there a relationship between stress and intent to leave employment in veterinary settings?

8. Is there a relationship between coping strategies and stress in veterinary support staff?

Qualitative Research Questions

In the qualitative phase of this study interviews were semi-structured with five predetermined open-ended questions and probes to compliment and support data by adding clarity and understanding of the occupation. The interviews had the purpose of obtaining descriptions of the work experiences of the participant.

The five predetermined questions and probes were:

1. What are the duties and expectations from the veterinarian and clients in your job?
   
   Probe: please give me some examples.

2. What sources of stress do you encounter at your job and how do you cope with these stressors? Probe: please give me some examples.
3. Tell me about any conflicts you may have had at work with clients, employees, or supervisors? Probe: Please give me an example.

4. Tell me about any injury you may have received at work: bite, scratch, injury or other? Probe: How has this affected your health?

5. Explain your intention to continue working in your current position and this profession? Probe: What would change your answer?

Hypotheses

1. It is hypothesized that the physical, psychological and environmental factors of a veterinary setting do not have an effect on stress of the worker.

2. It is hypothesized that there is no relationship between mental and physical health effects and stressors in the veterinary setting.

3. It is hypothesized that there is no relationship between coping strategies used by veterinary support staff and health outcomes of this workforce.

4. It is hypothesized that there is no relationship between coping strategies and stress levels reported by veterinary support staff.

5. It is hypothesized that there is no relationship between stressors in the veterinary setting and intent to leave of veterinary support staff.

6. It is hypothesized that there are no unique phenomenon in veterinary support staff which will be found in the qualitative data which have not been described in current literature.
Theoretical Framework

This study is guided by the conceptual framework of the cognitive theory of stress and coping (Lazarus & Folkman, 1984). This theory states that psychological stress is determined by appraisal of the situation and the interaction with the environment as well as personal factors such as beliefs, resources, vulnerabilities, and other individual factors (Lazarus, 1984). When a situation is appraised as stressful by the individual, somatic disruption can occur (Lazarus, 1984). Lazarus (1984) notes that coping is an integral part of stress and emotion and that the methods one uses to cope with stressful situations may affect the outcomes for the individual. Emotions also play a role in stress and coping because emotions cannot be separated from stress as it is the emotional reactions of individuals which may determine the reactions to a stressful situation (Lazarus, 1999). Lazarus (1999) states that work and family stress interact substantially and suggest that work can be a background for family stress.

The characteristics unique to veterinary hospitals and stressors within the hospitals were examined by surveys and interviews. The concepts of coping were examined with a portion of the survey and interviews. The social relationships within the work organization can have negative and positive effects on the workers (Lazarus, 1999). The interviews and surveys helped to describe the social working relationships of this occupation to gain an understanding of the support and resources available. The theoretical framework of stress and coping is visualized in Figure 1. This theory is an appraisal based model depicting the outcomes of stress which are influenced by environment, challenges, coping, emotions, the individual goals, beliefs, and resources. The individual then appraises the interaction and elicits a coping mechanism or
combination of mechanisms to create a perception of the interaction which results in an emotional response. The emotional response to the stressor may elicit a physical outcome which may be negative or positive (Lazarus, 1999). The appraisal or reappraisal may repeat itself which then may result in chronic stress or distress (Lazarus, 1999).

Figure 1. Theoretical Framework of Stress and Coping (Lazarus, 1999)
The definitions used in this study were as follows;

Certified veterinary technician are those who are certified in the state in which they work to act as an assistant to the veterinarian. This term is also used in some states to describe individuals with the same qualifications of a Licensed Veterinary Technician.

Compassion fatigue is an overlapping term used to describe physical and emotional signs associated with occupational stress in a chronic form, also used to describe a form of Post Traumatic Stress Disorder experienced by those who care deeply and are chronically exposed to traumatized people and traumatized pets in the field of veterinary medicine.

Emergency veterinary practice describes veterinary practices open nights, weekends, and holidays, operating on a walk-in basis, performing emergency surgery, and operating intensive care or critical care wards.

General veterinary practice describes veterinary practices open during regular business hours, taking appointments, and practicing preventative medicine as well as performing elective surgeries and procedures.

Job satisfaction is a cluster of evaluative feelings about a job with regard to pay, promotion, supervision, benefits, procedures, coworkers, nature of work, and communication.

Licensed veterinary technicians are those who have graduated from an accredited veterinary technology program, hold an associate degree or higher, have passed the National board examination and hold a license in the state in which they practice.

Occupational stress is harmful physical and emotional responses which occur when demands of the job are greater than the capabilities, resources and needs of the worker.

Registered veterinary technician are those who are registered in the state in which they
work to act as an assistant to the veterinarian. This term is also used in some states to
describe individuals with the same qualifications as a licensed veterinary technician.

**Veterinary assistant** is a term used for non degreed, non licensed, non registered
assistants to the veterinarians.

**Veterinary nurse** is a term used in England, Australia, New Zealand and some veterinary
hospitals to described degreed and licensed veterinary technicians.

**Veterinary support staff** refers to employees in a veterinary setting other than the
veterinarian.

**Assumptions of the Study**

Assumptions for the purpose of this study were the following:

1. The participants of the study will answer questions honestly.
2. Surveys will be reflective of research questions of this study.
3. Interviews will provide useful information to richly describe the occupation.
4. Behaviors can be modified to promote healthy workers.
5. Intervention and organizational modifications can be beneficial for the worker and
   business owner.
CHAPTER 2
LITERATURE REVIEW

The aim of this study is to investigate the relationships between stress, health status, intention to leave and coping skills of the veterinary support staff in the state of Alabama. The targeted workforce is predominately female (NAVTA, 2008), with the practice of veterinary medicine seeing a dramatic change in demographics in the past 10 years from a primarily male dominated profession to a primarily female dominated profession (AVMA, 2008). The social dynamics of women in the workforce due to balancing work and family demands may add to the stress of this workforce (NIOSH, 2000).

Occupational Stress

Borough and Williams describe occupational stress as “stress which arises from demands experienced in the working environment that affects how one functions at work or outside of work” (Brough, 2007). Job stress is seen as a situation where a job stressor either alone or in conjunction with other stressors such as home life interact with an individual’s personality and character and may result in an acute disruption of psychological or physiological homeostasis (Levy, 2006). Prolonged job strain or stress can lead to cardiovascular disease, muscular skeletal disorders, or other disorders (Levy, 2006). Physical symptoms associated with occupational stress include fatigue, sleep disturbances, headaches, lower back pain, gastrointestinal disorders and an impaired immune system (Rice, 1999). Obesity, smoking, and alcohol consumption are among the
health risk behaviors noted in employees experiencing stress in the workplace (Siegrist, 2006). Anger, decreased fertility in women, memory disturbances, changes in sleep and appetite have been noted as health risk of stress in the workplace (Sherman, 2007). Research shows a consistent correlation between long work hours, high demands at work, elevated blood pressure, job insecurity, low control and violence at work with high stress levels which may lead to illness (Hancock, 2001).

**Occupational Stress and Workers’ Compensation**

The first workers’ compensation laws were passed in 1911 by nine states and covered accidental injuries occurring on the job (Solomons, 1977). Occupational disease was not mentioned in workers’ compensation laws until 1917 (Solomons, 1977). California and Massachusetts were the first states to add occupational disease to their workers’ compensation laws (Solomons, 1977). By 1976, all 50 states included occupational disease in their workers’ compensation; however, this did not include mental illness or cumulative injuries (Solomons, 1977). Cumulative injury which included mentally traumatic activities was included in California’s Labor Code in 1968 (LaDou, 2009). California was one of the first states to include stress and mental illnesses as a cumulative injury which was compensated by workers’ compensation under the California Labor Code of 1968 (LaDou, 2009). The majority of states now include psychological disability in workers’ compensation; however, it varies from state to state and is up to governing bodies to make decisions based on criteria set by each state (Lippel, 1999).

In the United States, Wojcik (1999) estimated the cost of psychological injury related to occupational stress as $200-$300 billion per year in staff turnover, workers’
compensation claims and loss productivity. Direct cost of stress and stress related claims are estimated at $150 billion per year (deCarteret, 1994). The most direct impact of occupational stress on business is the escalating cost associated with psychological injuries (Kendall, 2009).

Frank and Karioth (2006) noted that prolonged compassion stress can lead to compassion fatigue in nursing and care giving settings. Compassion fatigue is described as the stress resulting from helping or wanting to help one traumatized (Figley, 1995). Compassion fatigue can cause low morale, declining job performance and health concerns in animal care givers (Snyder, 2004). Animal care givers may suffer from a more severe compassion fatigue than human care givers because animal care givers have the ability to perform euthanasia and have responsibilities for decision making concerning animal care (Snyder, 2004). Similarities between nursing and veterinary caregivers has been described in the Western Journal of Nursing Research as follows: “the aim of both disciplines is to foster physical, physiological and social wellness to whatever level is possible given the patient’s situation” (Johnson & Meadows, 2000). These similarities will be helpful in exploring veterinary support staff and aid in selection of instruments as well as designing interventions.

Veterinary Support Staff

In 2006, there were approximately 70,310 veterinary assistants in the US (BLS, 2006). It is estimated that veterinary support staff will be among the top five occupations to increase in the 21st century (BLS, 2007). With limited information pertaining to this worker population, the financial burden to both employees and employers due to work
related illness and injuries is not clearly known nor understood. As this occupation increases, there may be an increase in cost in both direct and indirect expenditures to the employers as workers are exposed to stress and stressors common in this occupation. Over 83% of veterinary technicians surveyed felt they were so underpaid that the feasibility of staying in the profession was declining (NAVTA, 2003). Economic loss to veterinarians and their practices of hundreds of dollars per day may occur due to loss of key staff members (Eigner, 2008).

Stress in the workplace was noted as a great concern in one survey of Australia’s veterinary nurses (Van Soest, 2004). High turnover in veterinary support staff is a shared global concern (Eigner, 2008). In preliminary discussions with veterinary support staffers there is low job satisfaction, high stress, long work hours, heavy workload, and job ambiguity. Many veterinary support staff enter into this occupation because of a deep caring for animals (Rolf, 2005). One of the primary causes for occupational stress in veterinary support staff is known as moral stress and may be caused by one or more duties associated with this occupation (Arluke 1991). Moral stress described by Rollins as demoralizing and unconventional occupational stress experienced by animal care givers who must perform an act which goes against one’s fundamental moral views (Rollin, 1986). Rollin noted that moral stress is cumulative and may result in psychogenic disease, substance abuse, and marital dissolution (Rollin, 2006). Euthanasia has been noted as one of the primary causes of occupational stress to animal care givers (American Association for Laboratory Animal Sciences, 1995; Veterinary Medical Association, 2000). Preliminary evidence may suggest animal care givers as an at-risk population for post-traumatic stress (Rolf & Bennet, 2005). Unresolved grief, physical and
psychological health concerns have been reported in workers who euthanize animals (Frommer & Arluke, 1999). It is possible that moral stress is influenced by the workers level of involvement with the animals and euthanasia (Herzog, 2002). Recurrent thought, intrusion feelings, nightmares and avoidance of emotions have been reports as moderate levels of traumatic symptoms (Rolf & Bennett, 2005). Training in grief counseling and stress management was noted as an area in which employees involved in euthanasia were not adequately trained (Rolf & Bennett, 2005).

The American Veterinary Medical Association (AVMA) reports a typical workers’ compensation for a back injury $22,000 (AVMA, 2008). The AVMA group health and life insurance program paid $4 million to injured members in 2006 (AVMA, 2008). AVMA Professional Liability Insurance Trust (PLIT) reports more than 2300 cat bite injuries resulted in nearly two million dollars of incurred loss (AVMA PLIT, 2003). Unscheduled absences were reported to be 65% above the national average for veterinary technicians (Huerkaml, 2006). Work related injuries have been reported in 71% of surveyed veterinarians (Jeyaretnam, 2000). In 1988, 65% of veterinarians surveyed reported a major injury related to work (Landcaser, 1988).

The Bureau of Labor Statistics (BLS) reports that veterinary technicians and technologists experience work related injuries and illness much greater than the national average (BLS, 2010). Skin disease, respiratory illnesses, and poisonings are among the reported illnesses in veterinary hospitals (BLS, 2002). A 2003 survey reported 7.6 recordable injuries per 100 workers in veterinary services (BLS, 2003). Over 1,400 per 10,000 veterinary workers have reported injuries involving sprains, strains, and fractures (BLS, 2008). More than 61% of veterinary workers reported an assault or violent act
(BLS, 2008). There are concerns of underreporting of injuries in veterinary medicine due to financial concerns of the employer and employee (Jeyaretnam, 2000). Veterinary support staff surveyed in Australia reported exposure to radiation, chemicals, formaldehyde, anesthetics, and pesticides (van Soest, 2004). Acute bites, scratches, and needle sticks are common occupational hazards to veterinary workers (van Soest, 2004). Lost work days due to occupational injury were reported in 31% of participants in a survey conducted by Jeyaretnam (2000). Back pain, gastrointestinal disease, allergic rhinitis, and cardiovascular disease are common chronic illnesses of veterinary workers (Reijula, 2003). The illnesses and lost days at work can be costly for the employee and employer (Reijula, 2003). According to Reijula (2003) the occupational health risk of those in the veterinary field needs reassessment because of the varied physically and psychologically demanding tasks involved in veterinary medicine.

More than a decade ago it was estimated that over $150 billion was spent annually on lost productivity and workers’ compensation claims due to work stress (Lehmer, 1997). Stress, drug abuse and suicide were reported in a survey among 160 veterinary practices (Jeyaretnam, 2000). Although veterinary support staff account for 40% of the total veterinary workforce little is known about the health status of this workforce (van Soest, 2004). Van Soest (2004) states that the results of the studies on veterinary support staff show a need for further investigation into the occupational health hazards of the profession.

The role of veterinary support staff, while unique, has similarities to caregivers in health care, including: patient care, surgical assistance, restraint of patients, family counseling, terminal patient care, and hostile patients (Johnson & Meadows, 2000). The
BLS estimates that the veterinary workforce will grow by more than 30% over the next 10 years and will be among the top five occupations to increase in the 21st century (BLS, 2008). High turnover and loss work days have been attributed to occupational stress and this workforce has a high turnover rate, yet little is known about the cause (Melancon, 2008). There are currently over 140,000 workers in this occupation and as the number grows it is important to understand the occupation, the environment and the demands on the worker. With limited information pertaining to this workforce, the financial burden to both the employees and employers due to work related illness and injuries is not clearly known nor understood.

Occupational stress, as described by Lazarus and Folkman, is the relationship between the person and the environment that is perceived by the person as taxing (Lazarus, 1984). Behavioral symptoms associated with occupational stress are work avoidance, lowered performance and productivity, overeating, and aggression (Rice, 1999).

Some jobs have been identified as being high risk for stress related illnesses due to the nature of the jobs. Workforces already identified as high risk are police officers, nurses, 911 operators, disaster workers, and emergency room physicians. Women are also considered high risk because they may have to balance family and work and could have the added stress of sexual harassment while also continuing to be paid less than male counterparts (NIOSH, 2000).
Occupational Stress in Emergency Responders

Emergency responders have been identified as a high risk workforce for occupational stress. The emergency responder puts themselves in harm’s way voluntarily on a daily basis (Mitchell, 1990). High levels of stress in this occupation are predicted by high levels of shift work and job rotation (Glendon, 1991). Low job satisfaction was found to be a major stress symptom in ambulance personnel (Young, 1995). Working with injured, mutilated or dead victims has been linked with sleep disturbances in this occupation (Hancock, 2001). Emergency responders have been found to have a younger retirement age than most occupations because of stress related illnesses (Hancock, 2001). Ambulance personnel report confrontation with families of victims as a primary acute stressor (van der Ploeg, 2003). Emergency responders experience significant occupational stress associated with stabilization of patients, comforting panicked victims and families (Essex, 2008). Burnout, fatigue and chronic stress are found in emergency responders (Essex, 2008). Beaton and Murphy found that emergency first responders and crisis workers absorb traumatic stress from those they help. By doing this they are at risk for experiencing compassion fatigue (Beaton, 1995).

Occupational Stress in Nurses

Occupational stress has been shown to cause serious health related problems in nurses (Blegen, 1993). These health related problems include anxiety, hypertension, depression, obesity, and substance abuse. A correlation between job stress and job satisfaction has been found in nurses (Blegen, 1993). Heavy workloads, long hours, limited education, low wages, and lack of resources, are factors found in nursing to cause
low job satisfaction (Shrader, 2001). Nurses and nurses aides in nursing homes were reported to experience high stress and low job satisfaction in caring for long term and critically ill patients which was attributed to shortages in nursing staff, high turnover of nursing staff, lack of education and frustrations from expectations of care (Lapane, 2007). Psychological distress in nursing aides has shown to be a factor in anxiety and depression (Erickson, 2006). These symptoms can be attributed to emotional and physical work and being exposed to psychosocial and mechanical stress at work (Erickson, 2007). Job insecurity, interpersonal conflicts at work, bullying, and threats have been linked to psychological stress in the workplace (Erickson, 2007). It has been shown that many variables may play a role in stress in the workplace. Nurses as an occupation were shown to have high levels of stress with the majority of nurses being women (Smith, 2000). Women were found to be at risk for turnover if a lack of respect was perceived from other health care workers (Myers, 2010). A recent study of nurses in a hospital setting indicated that emotional attachment from caring for pediatric patients and interactions with guardians, parents and family members may lead to negative outcomes. (Nabirye, 2010).

**Occupational Stress in Veterinary Support Staff**

Veterinary support staff are comprised of degreeed, certified, registered, and licensed veterinary technicians, and non licensed assistants. The profession is primarily female (NAVTA, 2003). Veterinary technicians account for almost 50% of the total employment in the veterinary service industry (van Soest, 2004). Occupational stress in veterinarians has been reported as high as 77% with a reported 65% of stress being
related to the job (Reijula, 2003). The animal health care team including technicians may be particularly vulnerable to compassion fatigue because of the deep passion invested in caring for patients (Cohen, 2007). Veterinary technicians share risk of compassion fatigue with veterinarians, however they also have added stressors (Cohen, 2007). This workforce has less control over work situations due to laws and standards (Cohen, 2007). This workforce may feel isolated and left out when treatments are prescribed by the veterinarian without consultation or education to the support staff (Cohen, 2007). The devotion support staff feels towards the patient may leave the support staff member feeling isolated and lead to compassion fatigue (Cohen, 2007). Members of the support staff may include office staff that greet the clients and are subject to angry and upset clients and families of the pet (Cohen, 2007).

Extensive studies in nurses and emergency responders have correlated occupational practices and environmental factors with high stress and low job satisfaction which contribute to stress related illnesses (Cottrell, 2001; Figley, 1995). Job design and demands such as long hours, caring for others, physical and emotionally demanding jobs are considered contributors to occupational stress in nurses and emergency responders (Landsbergis, 2006). Veterinary support staff may be at risk for high levels of occupational stress due to similar job design and environmental factors similar to nurses and emergency responders.

Mixed-Methods

Sequential mixed design involves the quantitative and qualitative phases in chronological order (Teddie & Tashakkori, 2009). This study’s sequential design is
quantitative–qualitative; a design used when there is limited formal literature (Teddie & Tashakkori, 2009). Creswell (2004) notes that mixed methods have the potential to contribute to generalizability, strength, and comprehensiveness of a study. The National Institute of Health and Safety (NIOSH) recommend using a sequential mixed method design when the goals are to understand experiences and strengths of relationships. In a quantitative - qualitative sequential analysis the quantitative data are collected first and then qualitative data are collected to validate and expand upon the results of the quantitative phase (Teddie & Tashakkori, 1998). Creswell (1995) notes that this type of design is a two phase design in which the two phases are clearly distinct. Integration denotes making a meaningful conclusion based on consistent or inconsistent results including elaboration, completeness, supporting, comparison, and contrast (Teddie & Tashakkori, 2009).

**Quantitative Research**

Surveys aim at a comparative and representative picture of a population (Gillham, 2000). Surveys in general ask questions about a particular subject; producing information which can be quantified statistically (Groves, 1996). Used as a scientific tool the survey must be validated and tried to obtain good research information (Nueman, 2000). Most surveys include questions asking about the respondents’ beliefs, opinions, past or present behavior (Neuman, 2000). Mail or computer generated surveys are economical and can reach many people in a short period of time. The length of the survey determines the amount of time required to complete the survey (Nueman, 2000).

**The Nursing Stress Scale**

The Nursing Stress Scale (NSS) (Gray-Toft & Anderson, 1981) is the most
widely used instrument in a variety of health care settings (Lee, 2007). Healy (2008) examined stress in nurses and the effects of coping strategies using the NSS and Ways of Coping questionnaires. The NSS uses a four point Lickert scale which indicates the frequency of work stressors in nurses. Permission to modify the questions of the NSS to pertain to veterinary support staff was obtained from the author. The permission is included in the Appendix B.

*A Modified for Veterinary Support Staff Nursing Stress Scale*

A Modified for Veterinary Support Staff Nursing Stress Scale (MVNSS) is one of three instruments included in the survey. A four point likert scale is used to indicate the frequency of work stressors experienced by the worker. The results are calculated from total scores ranging from 0-102. A higher score indicates a higher frequency of work stressors. The MVNSS can be completed in approximately ten minutes.

*The Short-Form 36 Health Survey*

The Short-form 36 Health Survey version 2.0 (SF-36 V2) was used to measure overall perceived physical and mental health of veterinary support staff (Ware, 2000). The SF-36V2 has been used in many venues including general and specific populations including evaluation of military personal health status before and after active duty (United States Department of Defense Deployment Health Clinical Center, 2010). The SF-36V2 has eight scales of physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, mental health, physical component summary, and mental component summary.
The Ways of Coping Questionnaire

The Ways of Coping Questionnaire was used to assess coping strategies used by veterinary support staff. The items in this instrument are comprised of eight scales; confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape avoidance, planful problem-solving, and positive reappraisal. The WCQ reports an internal consistency coefficient of 0.61 to 0.79 on scaled and relative scores. Research has demonstrated that it is how an individual copes with stress that influences their psychological well-being, social functioning, and somatic health (Lazarus, 1984). The WCQ has been used in health care to determine coping strategies and relationship to stress. Healy (2008) utilized the WCQ in the evaluation of coping strategies and job satisfaction in nurses.

Qualitative Research

Qualitative research involves an inquiry into a human or social problem (Creswell, 2007). The researcher is the key instrument in a qualitative study (Hatch, 2002). Qualitative research utilizes purposeful sampling to select individuals who can best help understand a phenomenon or group (Ivankova, 2009). Purposeful sampling can be used to develop a detailed understanding of a particular phenomenon or discover a phenomenon. Obtrusive information is collected from the participants because it is the lived experiences as told by the participants. The perceptions, biases, and interpretations of the participants are included in the qualitative data collected (Creswell, 2007).

There are many instruments used in qualitative research to gain information. Phenomenology has become a dominating tool in generating information about nursing staff members (Norlyk, 2010). Phenomenology is primarily a philosophy which guides
the researcher to obtain rich descriptive information through interviews (Norlyk, 2010). It is a research strategy of inquiry in which the researcher identifies the essence of human experiences about a phenomenon by the participants (Creswell, 2009). Epoché is a conscious effort by the researcher to set aside prejudgments in order to open the interview with an unbiased, receptive presence (Moustakes, 1994).

**Interviews**

Interviewing using purposeful sampling is done by selecting individuals and sites for study which can provide an understanding of a phenomenon within the study group (Creswell, 2007). A one-on-one interview will provide rich, in-depth understanding of an individual’s experiences (Creswell, 2007). One-on-one interviews require the participant to not be hesitant to speak and share their experiences or ideas with the researcher (Krueger, 1994). An interview is a conversation that has structure and purpose (Kvale, 2009). An interview may have the purpose of obtaining descriptions of the lived world of the interviewee in order to describe and interpret the meaning of the described phenomenon (Kvale, 2009). The interview is a primary tool to gather qualitative information from the dialogue between the researcher and the participant (Wimpenny, 2000). The site of the interview must be comfortable, free of distractions and convenient for the participant. Before the interview begins the researcher must obtain consent from the participant (Creswell, 2007). An allotted time should be expressed to the participant (Krueger, 1994). Recording equipment should be tested before the interview and be in good working order (Creswell, 2007). The interview should be mechanically recorded as well as transcribed.
The first part of the transcription takes place during the interview in the form of notes which will include descriptive notes and reflective notes (Creswell, 2007). Transcription is done on the recordings right after the interview (Creswell, 2007). After transcription, phenomenological reduction takes place which includes bracketing the topic or questions, horizontalization (every statement has equal value), Meanings are delineated, and themes are developed (Moustakas, 1994). Individual textured descriptions are then grouped to understand a phenomenon which may exist (Moustakas, 1994).

Summary

There are limited studies exploring veterinary support staff. The veterinary support staff makes up a significant portion of the veterinary workforce and is involved in many aspects of veterinary medicine and public health from general practices providing preventative care to universities involved in research. The duties and responsibilities are extensive yet there are limited studies on this workforce. An understanding of the occupational stressors, health status, and coping strategies of this workforce may be gained utilizing a combined analysis of quantitative and qualitative methods. The literature review has shown that worker’s in similar environments experience high levels of stress and negative health outcomes. Understanding these elements of the veterinary support staff is key to developing interventions for a healthier workforce.
CHAPTER 3
METHODOLOGY

To capture the experiences and essence of this workforce both a quantitative and qualitative approach was needed. The strategies for research design, sampling procedures, data collection, and protection of human subjects are described in this chapter.

A non-experimental mixed method was used in this study to understand the complex phenomenon of occupational stress and to evaluate the occupational stress, health status, intention to leave and coping mechanisms of this workforce. The quantitative and qualitative phases were integrated at the conclusion of the study to provide an in depth examination of the occupational stress, health status, intention to leave and coping strategies of this workforce.

Quantitative Research

A thorough literature review revealed limited information on this vulnerable workforce. The literature indicated high injury rates, low wages, high turnover, and an overall lack of research. The goal of this study was to accurately describe the worker’s occupational stress, health status, intention to leave and coping strategies. A web-based survey was designed to provide quantitative data on stressors, health status and coping strategies. The demographic component was developed by the researcher to capture age, marital status, education level, credentials, and type of veterinary setting to characterize
the workforce. The compiled survey included the demographic component of the survey, the MVNSS, the SF-36 V2, and the WCQ for evaluation of demographics, stressors, mental and physical health status, intention to leave, and coping strategies. The estimated completion time for the survey was 30 minutes.

Institutional Review Board

This study followed the guidelines of the Institutional Review Board (IRB) for the protection of human subjects at the University of Alabama at Birmingham (UAB). Approval by UAB IRB (#X080728008) to perform both quantitative and qualitative phases of this study was obtained and is in Appendix A.

A waiver of informed consent was obtained for the survey portion of this study. Participants in the study were on a volunteer basis, informed about the nature and main content of the study by an information page before beginning the survey and were not coerced in any way. Every precaution was taken to ensure respect of privacy, confidentiality, anonymity, and the participant’s physical and mental integrity. The participants were made aware that they were free to withdraw from the study at any time and of any possibility of potential or possible risk. Participants were encouraged to ask questions about the research.

A pilot study was conducted to ensure questions were feasible in this worker population. The pilot test confirmed feasibility of response rate for the survey, and completion time of 30 minutes of the survey online. The pilot study was conducted at a veterinary hospital in Birmingham, Alabama with 10 fulltime employees. A letter of support is in Appendix C.
The researcher met with the governing board of AVTA to discuss the study. AVTA granted permission and agreed to promote the study by announcing the availability of this initiative at continuing education meetings. The AVTA is a professional, all volunteer association in Alabama established in 1980 to promote, educate and support veterinary support staff. There are no licensing or educational requirements to be a member of this association; therefore, there is representation of credentialed and non-credentialed veterinary support staff. AVTA provided e-mail addresses of their 104 members to the researcher. AVTA stated that their membership is current and updated yearly or when a new membership occurs. A letter of support is in the Appendix C.

**Inclusion Criteria**

This cross-sectional study’s inclusion criteria included: membership in the Alabama Veterinary Technician Association (AVTA), over 19 years old and working in a veterinary setting within the state of Alabama.

A letter of support was e-mailed to the members from the leadership of AVTA before the researcher contacted the membership. An introductory e-mail was sent to the members of AVTA by the researcher. One week later, an invitation was sent by email encouraging members to participate in the survey. The survey was available utilizing a web-based survey instrument which stored completed surveys. The survey was available for a two month period. The link provided for the participants lead them to an informational page about the study including format of the survey, length of the survey, procedures, and contact information for the principal investigator. Access to the link was
limited to one email address. A reminder was sent to the membership two weeks after the
survey was available and two weeks before the closing date of the survey.

The Survey

The demographic portion of the survey was placed at the beginning of the survey. Respondents answered questions pertaining to age, gender, type of practice, education, credentials, marital status, years of experience, length of current position, and intent to leave current position.

Respondents answered the 33 questions in the MVNSS based on potentially stressful situations. The physical, psychological and social environment is assessed by factors within the questionnaire. The questions are broken down into seven subscales; (I) Death and Dying, (II) Conflict with Doctors, (III) Inadequate Preparation, (IV) Lack of Support, (V) Conflict with Coworkers, (VI) Workload, and (VII) Uncertainty Concerning Treatment.

The physical environment includes Factor (VI) Workload that measures stressful situations which may arise from the veterinary support staff’s workload, staffing, and scheduling problems.

The psychological environment includes Factors I, III, IV, and VII. Factor I Death and Dying measures stressful situations resulting from suffering and death of pets in the care of a veterinary hospital. Factor III Inadequate Preparation measures dealing with emotional needs and concerns of veterinary support staff attempting to meet the emotional needs of pets as well as the families who own them. Factor IV Lack of Staff Support measures the veterinary support staff’s assessment of the extent to which opportunities to share experiences and vent feelings to other support staff. Factor VII
Uncertainty Concerning Treatments measures stressful situations that can arise when there is uncertainty concerning the treatment of pets.

The social environment includes Factors II and V. Factor II; Conflict with Doctors consists of stressful situations that arise from veterinary support staff interaction with veterinarians. Factor V Conflict with Coworkers and Supervisors assess the conflictual situations that arise between veterinary support staff coworkers and supervisors.

The seven subscales of the MVNSS measured different sources of stress. The predictor variables that were analyzed using the MVNSS are frequencies of occupational stress attributed to the workload, death and dying, inadequate preparation, uncertainty in treatments, support, and conflict. These predictor variables were analyzed using SAS to examine to what extent the independent variable of the MVNSS Factors account for stress in this workforce. This instrument was found to be reliable with a Cronbach’s Alpha of 0.87 this score is within the acceptable range of 0.79-0.89 found in previous studies. To determine physical and mental health effects of occupational stress on this workforce correlation of the predictor variables with physical and mental health were determined by Pearson’s Moment Correlation coefficient.

The SF-36V2 used two summary scales; a physical component score and a mental component score. There are eight health domains included in the survey these health domains are; physical functioning, bodily pain, general, health, vitality, social functioning, role emotional, mental health and reported health transition. The scores are standardized to a 0-100 range converting the lowest possible score to 0 and the highest to 100. The scores are norm based with a mean of 50 and a standard deviation of 10. The scores were interpreted as: 50 average, 0-49 is below average in the United States, and
51-100 is above average in the United States. A high score on Physical Component Summary (PCS) indicates little or no physical limitations. A high Mental Component Summary (MCS) score indicates positive affect and little or no psychological distress. High scores on both components indicate good general health. The SF-36V2 portion of the compiled survey took approximately 10 minutes to complete. Ninety five percent of the items correlated with their hypothesized scale indicating validity. The percentage of scales with Cronbach’s Alpha coefficient higher than or equal to the acceptable 0.70 was 100% indicating the reliability of this instrument.

The Ways of Coping Questionnaire (WCQ) was self administered online in conjunction with the other two instruments. The WCQ assessed the thoughts and actions respondents use to cope with stressful encounters at work. There are 66 items in this instrument with a four point Likert scale for participants to indicate frequency of use of each strategy. A relative score is obtained by (1) calculating the average item score for the items on a given scale by dividing the sum of the ratings on the scale by the number of items on that scale (2) calculating the sum of the average items scores across all eight scales, and (3) dividing the average item score for a given scale by the sum of the average item scores across all eight scales.

The WCQ scale scores and physical and mental health scores were analyzed by Pearson’s correlation coefficient to determine if the use of coping strategies influences the physical and mental health of this worker population. Analysis to examine strength and direction of the relationship between ways of coping method scale and physical and mental health as measured by the SF-36V2 norm scores were performed. A conservative 0.05 p-value of significance was used for Pearson’s correlation. Physical and mental
health were analyzed as separate dependent variables. The Cronbach’s Alpha indicated reliability of this instrument with a range acceptable in coping instrument of 0.55-0.78.

Descriptive statistical analyses were performed on MVNSS and SF-36V2, and WCQ scores. The MVNSS provided a total score that is indicative of frequency in which the respondent experiences stress in performing their duties. Each subscale is scored separately and totaled for a total score. The SF-36V2 uses eight scales that make up a physical component and a mental health component of overall perceived health status. The WCQ examines a wide range of cognitive and behavioral responses to stressful situations in eight ways of coping. The analysis examined strength and directional relationships between MVNSS (scores and subscales) and each health score of the SF-36V2 and the scores of the WCQ.

Qualitative Research

In the qualitative phase of the study, interviews complimented and supported data by adding clarity and understanding of an occupation that is infrequently studied. The qualitative research was performed after the surveys were completed and analyzed. The questions used in the interview were modified based on findings from the survey. The quantitative analysis revealed high scores concerning workload and conflicts with the doctors therefore the questions were modified to include an exploration into this phenomenon. Modifications to the questions were approved for use by UAB IRB. The interviews have the purpose of obtaining descriptions of the work experiences of the interviewee in order to describe and interpret the meaning of the described phenomenon.

The ASBVME has divided the state of Alabama into three districts for reporting
of premise permits, licensed veterinarians, and licensed veterinary technicians. These three districts were used to divide the respondents for conduction of the one on one interviews. AVTA also uses these same divisions to separate the state for regional representation. A request for participation in a one on one interview was included in the online survey. If the participant marked yes to participation in the interview, contact information was requested. Thirty-seven percent (44) of the respondents were willing to participate in the interviews and provided contact information. For randomization, the first and seventh participants by numerical identification were randomly selected to contact for the interview. In one instance the seventh respondent was not available due to a nonworking phone number; therefore, the eighth respondent in that region was contacted. All participants who were contacted agreed to meet with the researcher for an interview. Pseudonyms for the participants were used. A description of the participants is in Table 1.

Table 1. Description of Interview Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Region of State</th>
<th>Credentials</th>
<th>Degree</th>
<th>Age</th>
<th>Type of Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patty</td>
<td>Central</td>
<td>Non Licensed</td>
<td>BS</td>
<td>19-29</td>
<td>emergency</td>
</tr>
<tr>
<td>Meredith</td>
<td>South</td>
<td>LVT</td>
<td>AAS</td>
<td>30-39</td>
<td>general</td>
</tr>
<tr>
<td>Sharon</td>
<td>North</td>
<td>LVT</td>
<td>AAS</td>
<td>40-49</td>
<td>general</td>
</tr>
<tr>
<td>Chantal</td>
<td>Central</td>
<td>LVT</td>
<td>AAS, BS</td>
<td>50-59</td>
<td>specialty</td>
</tr>
<tr>
<td>Nancy</td>
<td>North</td>
<td>LVT</td>
<td>AAS</td>
<td>30-39</td>
<td>general</td>
</tr>
<tr>
<td>Anna</td>
<td>South</td>
<td>RVT</td>
<td>none</td>
<td>40-49</td>
<td>general</td>
</tr>
</tbody>
</table>
A meeting time and place was decided upon by the researcher and participant at the convenience of the participant. The site of the interview was comfortable, free of distractions and convenient for the participant. Consistent with the phenomenological method, the participants were met at coffee houses, lodges, restaurants or places of comfort as if meeting for conversation. The interviews began by introductions of the participant and the researcher. A social conversation ensued to allow for relaxation of the participant. The interviews took place during non-working hours of the participant. The interviews were related to the data collected from the surveys; however, the interviews were seeking a field based explanation of the statistical findings to provide a complete study of the occupational stress, health status, intention to leave and coping skills of this workforce. An explanation of the interview process and study purpose was discussed with the participants. Informed consent was obtained and the participants were made aware that results of the study may be published but that confidentiality of the participants will be protected. One to two hours were allotted for the interviews and a $25.00 incentive was given to each participant.

Prior to each interview the researcher engaged in the Epoche process so that to a significant degree past associations, understandings, and biases were set aside and did not direct the interview (Moustakes, 1994).

The interviews were semi-structured with five predetermined open ended questions and probes. The questions were developed by the researcher to gain rich descriptive experiences of the participants concerning duties, stressors, injuries, conflicts, coping mechanisms, and intent to leave.

The following questions were included in the interview:
1. What are the duties and expectations from the veterinarians and clients in your job?
   Probe: please give me some examples.

2. What sources of stress do you encounter at your job and how do you cope with these stressors? Probe: please give me some examples.

3. Tell me about any conflicts you may have had at work with clients, employees, or supervisors? Probe: Please give me an example.

4. Tell me about any injury you may have received at work: bite, scratch, injury or other? Probe: How has this affected your health?

5. Explain your intention to continue to continue working in your current and this profession? Probe: What would change your answer?

Transcription was done on the recordings right after the interview. The transcriptions and recordings were analyzed by coding of words and phrases by the interviewer to determine commonalities between the participants statements. The transcriptions and coding were performed by the researcher and one other coder. The information was clustered together with support by statements from the interviews into clusters of meaning. Transcribed material was coded into descriptions of the textured experiences and a textured-structural description of the meanings from the verbatim transcripts was developed. The coding helped to identify and develop phenomenon which describe the workforce.

Limitations of the Study

The quantitative phase of this study was administered online; therefore, weaknesses in this study include the participant’s computer skills. If a participant was not
comfortable using a computer there may have been problems completing the survey however because there are web-based veterinary assistant and technology training utilized in many veterinary hospitals this was a preferred method of data collection. Web based surveys can experience problems with connection speeds, browser and user settings. Control for multiple submissions of the survey cannot be guaranteed as controls such as “a cookie” will be used but are not a complete guarantee to stop a respondent from logging on as an alternate user. Low response may be a weakness of this study as veterinary support staff may be unwilling to participate due to multiple factors such as time, computer availability, and concern of repercussions from employers. Participants may not complete the surveys due to time constraints or loss of internet connection.

Percentage of participation can be calculated with an installed system within the web-based survey. This system, Survey Monkey, monitors the number of logins to the website, the number who visits the information page and proceeded to the survey, and number who submit a completed survey. The surveys were self-reported which may create bias. The participants were limited to those currently working in the veterinary field and currently members of AVTA and did not include those whom have left the veterinary field for illness, change of profession or other reason. Limited information pertaining to this workforce caused challenges in literature review process.

The qualitative phase of the study involved six one-on-one interviews with veterinary support staff. The participants of the interviews create a bias because those willing to participate may be dissatisfied with their current working situation. The participant must be willing to discuss their working situation to provide in-depth information. This study may also be subject to healthy worker bias. The interviews may
only capture the perspective of those willing to interview. The participants may be reluctant to disclose information pertaining to their work. This part of the study is dependent on the participant’s willingness to talk about their work experiences. There was only one interview per participant. A one-on-one interview provided rich, in-depth understanding of an individual’s experiences at work. One-on-one interviews required the participant to not be hesitant to speak and share their experiences or ideas with the researcher. Understanding the experiences of this workforce may aid in development of interventions in stress reduction and coping to reduce health impacts and intentions to leave the profession.
CHAPTER 4

QUANTITATIVE AND QUALITATIVE ANALYSIS

This chapter provides the results of this sequential mixed method study. The results include sample characteristics, demographics, analysis of the study variables, and qualitative analysis of the one on one interviews.

Quantitative Analysis

The Sample

The membership of the AVTA was invited to participate in the study. AVTA provided the researcher with email contact information for their membership of 104. Of the 104 AVTA members, 92 responded to the invitation to participate in the survey; 79 completed the survey resulting in a response rate of 75%. This response rate was much higher than the acceptable for web-based surveys which is 30%-40%. The participants’ ages ranged from 19 to 69 years of age. The sample was 89% female with 51% married and 46% single. Descriptive statistics for the sample are provided in Table 2. Forty-eight percent of the participants were LVTs and hold an associate degree (50%). The majority of the participants have been in the veterinary field for more than one year (98%). Most of the respondents have been at their current job for more than one year (39%) and 35% have been at their current job more than five years. Sixteen percent have been at their current job for more than ten years.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>frequency</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-29</td>
<td>24</td>
<td>26.09</td>
</tr>
<tr>
<td>30-39</td>
<td>34</td>
<td>36.96</td>
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<tr>
<td>40-49</td>
<td>18</td>
<td>19.57</td>
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<tr>
<td>50-59</td>
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<td>14.13</td>
</tr>
<tr>
<td>60-69</td>
<td>3</td>
<td>3.26</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
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<tr>
<td>Married</td>
<td>49</td>
<td>51.58</td>
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<tr>
<td>Single</td>
<td>46</td>
<td>48.42</td>
</tr>
<tr>
<td><strong>Credentials</strong></td>
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<td></td>
</tr>
<tr>
<td>LVT</td>
<td>48</td>
<td>52.17</td>
</tr>
<tr>
<td>NonLicensed Assistant</td>
<td>32</td>
<td>34.78</td>
</tr>
<tr>
<td>RVT/CVT</td>
<td>5</td>
<td>5.43</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>7.61</td>
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<tr>
<td><strong>Education</strong></td>
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<tr>
<td>High school</td>
<td>28</td>
<td>30.43</td>
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<tr>
<td>Associate degree</td>
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<td>54.35</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td>13</td>
<td>14.13</td>
</tr>
<tr>
<td>Graduate degree</td>
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<td>1.09</td>
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<tr>
<td><strong>Length in current job</strong></td>
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<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>8</td>
<td>8.7</td>
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<tr>
<td>More than 1 year</td>
<td>36</td>
<td>39.13</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>32</td>
<td>34.78</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>16</td>
<td>17.39</td>
</tr>
<tr>
<td><strong>Length in veterinary field</strong></td>
<td></td>
<td></td>
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<tr>
<td>Less than 1 year</td>
<td>2</td>
<td>2.17</td>
</tr>
<tr>
<td>More than 1 year</td>
<td>90</td>
<td>97.83</td>
</tr>
<tr>
<td><strong>Type of practice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General practice</td>
<td>52</td>
<td>56.52</td>
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<tr>
<td>Emergency</td>
<td>5</td>
<td>5.43</td>
</tr>
<tr>
<td>Specialty</td>
<td>35</td>
<td>38.04</td>
</tr>
</tbody>
</table>
Intent to leave

Sixty three percent of participants’ indicated that they did not intend to leave their current job. Fifteen percent indicate they intended to leave their current job within five years and 21% indicated they indeed to leave their current job in one year or less.

Instrument Reliability

Statistical analysis of the quantitative data was conducted using SAS version 9.2. The internal consistencies for the MVNSS, the SF-36V2, and the WCQ were assessed using Cronbach’s alpha coefficients and the ranges of reliability were acceptable for all instruments used in this study. The Cronbach’s alpha for each instrument is shown in Table 3.
Table 3. Instrument Internal Consistency of SF-36V2, MVNSS, and WCQ

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SF-36V2</strong></td>
<td></td>
</tr>
<tr>
<td>Physical Functioning</td>
<td>0.87</td>
</tr>
<tr>
<td>Role Physical</td>
<td>0.80</td>
</tr>
<tr>
<td>Bodily Pain</td>
<td>0.95</td>
</tr>
<tr>
<td>General Health</td>
<td>0.81</td>
</tr>
<tr>
<td>Vitality</td>
<td>0.87</td>
</tr>
<tr>
<td>Social Functioning</td>
<td>0.84</td>
</tr>
<tr>
<td>Role Emotional</td>
<td>0.79</td>
</tr>
<tr>
<td>Mental Health</td>
<td>0.86</td>
</tr>
<tr>
<td><strong>MVNSS Total</strong></td>
<td>0.87</td>
</tr>
<tr>
<td><strong>WCQ</strong></td>
<td></td>
</tr>
<tr>
<td>Confrontive</td>
<td>0.64</td>
</tr>
<tr>
<td>Distancing</td>
<td>0.55</td>
</tr>
<tr>
<td>Self Controlling</td>
<td>0.78</td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td>0.65</td>
</tr>
<tr>
<td>接受责任</td>
<td>0.73</td>
</tr>
<tr>
<td>Escape Avoidance</td>
<td>0.72</td>
</tr>
<tr>
<td>Planful Problem Solving</td>
<td>0.61</td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td>0.77</td>
</tr>
</tbody>
</table>
**Modified for Veterinary Support Staff Nursing Stress Scale**

The MVNSS solicits Likert type responses from 0 (never) to 3 (very frequently) according to the respondent’s perceived occurrences in the veterinary workplace. There are seven sub-scales. Higher scores on the MVNSS indicate more frequently experienced stress. Gray-Toft & Anderson (1981) reported internal consistency ranges from 0.79 to 0.89. The means observed for the MVNSS sub-scales ranged from 1.92 for Factor IV Lack of Staff Support to 11.83 for Factor VI Workload. The overall mean score for the MVNSS was 42.20 with a standard deviation of 17.80. The MVNSS Factors I-VII were analyzed using SAS. Factor VI Workload had the highest mean of 11.92 with a significant p value of 0.0015 indicating the workload causes veterinary support staff high levels of stress. Factor I Death and Dying had a mean of 9.43 the second highest mean in the scale indicating death and dying of patients causes a high level of stress. The third highest factor was Factor I Conflict with a Veterinarian with a mean of 5.74. As was consistent with other studies, the first quartile was a score of 31; therefore, those scoring a total of greater than 31 were considered experiencing high stress. High stress was found to be experienced by 73% of the participants with scores of the MVNSS ranging from 32-101. The means and standard deviations of each factor are shown in Table 4.
Table 4. Modified for Veterinary Support Staff Nursing Stress Scale

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Death and Dying</td>
<td>9.4</td>
<td>4.06</td>
</tr>
<tr>
<td>II. Conflict with Veterinarian</td>
<td>5.74</td>
<td>2.9</td>
</tr>
<tr>
<td>III. Inadequate Preparation</td>
<td>2.94</td>
<td>1.8</td>
</tr>
<tr>
<td>IV. Lack of Support</td>
<td>1.04</td>
<td>1.74</td>
</tr>
<tr>
<td>V. Conflict with Other Staff</td>
<td>5.11</td>
<td>2.55</td>
</tr>
<tr>
<td>VI. Workload</td>
<td>11.8</td>
<td>5.92</td>
</tr>
<tr>
<td>VII. Uncertainty Concerning Treatments</td>
<td>5.07</td>
<td>2.91</td>
</tr>
</tbody>
</table>

Ways of Coping Questionnaire

The Ways of Coping Questionnaire (WCQ) has 66 items which require responses from 0 (does not apply) to 3 (used a great deal). These are responses to statements about cognitive and behavioral efforts to cope or deal with a specific stressful event. The eight subscales are listed in Table 5. The scores describe the amount of effort exerted by the participant in each type of coping strategy. Internal consistency coefficients of 0.61 to 0.79 were reported by Folkman and Lazarus (1988). The means for the WCQ ranged from 2.93 in the Accepting Responsibility scale to 8.73 in the Self Controlling scale indicating the veterinary support staff used a self-controlling strategy for coping with stressor more frequently than the other coping strategies. The second frequently used coping strategy was Planful Problem-Solving. Third most frequently used coping strategy was Positive Reappraisal. The overall mean score for the WCQ was 47.27. The mean scores and standard deviations for the WCQ are shown in Table 5.
Table 5. Ways of Coping Strategies

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepting Responsibility</td>
<td>2.93</td>
<td>2.48</td>
</tr>
<tr>
<td>Confrontive Coping</td>
<td>4.39</td>
<td>2.99</td>
</tr>
<tr>
<td>Distancing</td>
<td>5.32</td>
<td>2.91</td>
</tr>
<tr>
<td>Escape Avoidance</td>
<td>5.64</td>
<td>4.11</td>
</tr>
<tr>
<td>Planful Problem Solving</td>
<td>7.37</td>
<td>3.08</td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td>6.93</td>
<td>4.96</td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td>5.93</td>
<td>3.32</td>
</tr>
<tr>
<td>Self Controlling</td>
<td>8.72</td>
<td>4.42</td>
</tr>
</tbody>
</table>

SF-36V2

The Short Form-36 Version 2 Health Survey (SF-36V2) consists of 36 questions with an eight scale profile of functional health and well being scores as psychometrically-based physical and mental health summaries. A score of 50 or above on each scale indicates good health in that scale. Among the eight scales, three scales, Physical Functioning (PF), Role Physical (RP), and Bodily Pain (BP), contribute to Physical Component Summary (PCS). Three scales which contribute to the Mental Component Summary (MCS) are Mental Health (MH), Role Emotional (RE), and Social Functioning (SF). The Vitality (V) and General Health (GH) have correlations with both the PCS and MCS of the SF-36V2. The reliability and internal consistency of the SF-36V2 exceeds 0.70 with a median reliability of 0.76. The mean scores for the SF-36V2 PCS scores 31.70 to 61.44 and MCS scores ranged from 19.18 to 60.67. The mean PCS score was 55.03 which is above the score of 50 for the general public. The MCS mean score was
44.14 below the score of 50 for the general public. Means and standard deviations of the scales and MCS and PCS scores are shown in Table 6.

Table 6. SF-36V2 Means and Standard Deviations

<table>
<thead>
<tr>
<th>Scales</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Functioning</td>
<td>51.32</td>
<td>7.14</td>
</tr>
<tr>
<td>Role Physical</td>
<td>50.03</td>
<td>6.87</td>
</tr>
<tr>
<td>Bodily Pain</td>
<td>50.79</td>
<td>11.08</td>
</tr>
<tr>
<td>General Health</td>
<td>49.60</td>
<td>8.97</td>
</tr>
<tr>
<td>Vitality</td>
<td>46.03</td>
<td>10.80</td>
</tr>
<tr>
<td>Social Functioning</td>
<td>44.66</td>
<td>10.80</td>
</tr>
<tr>
<td>Role Emotional</td>
<td>47.51</td>
<td>8.95</td>
</tr>
<tr>
<td>Mental Health</td>
<td>45.88</td>
<td>11.08</td>
</tr>
<tr>
<td>Physical Component Summary</td>
<td>52.03</td>
<td>6.36</td>
</tr>
<tr>
<td>Mental Component Summary</td>
<td>44.14</td>
<td>10.58</td>
</tr>
</tbody>
</table>

Demographic Characteristics and Occupational Stress

All the types of veterinary settings represented in the study show significant stress levels; however, the levels experienced by the workers varied by type of practice. The type of veterinary practice and levels of stress experienced were significantly different across the types of practice between five of the factors. Mean scores for Factors I, II, V, VI, and VII were significantly different indicating the stressors vary by type of practice. The emergency veterinary practice support staff experienced greater stress in all areas than the small animal general veterinary practices as well as the specialty veterinary practices, which includes those working in universities; however, the general practice support staff experienced greater stress than the specialty practices. There were low
response rates for the emergency support staff; however, the outcomes are significant. The response rate of emergency workers is reflective of the ratio of general practices to emergency practices in Alabama as there are a limited number of emergency veterinary practices. The types of veterinary practice and significant factors of the MVNSS factors means and p values are shown in Table 7.

**Table 7. MVNSS Factors and Mean Scores by Type of Practice**

<table>
<thead>
<tr>
<th>MVNSS FACTOR</th>
<th>Specialty N=28 mean</th>
<th>General N=51 mean</th>
<th>Emergency N=4 mean</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor I Death and Dying</td>
<td>7.78 SD(4.64)</td>
<td>10.05 SD(6.31)</td>
<td>12.75 SD(9.75)</td>
<td>0.0134</td>
</tr>
<tr>
<td>Factor II Conflict with Doctor</td>
<td>4.64 SD(2.72)</td>
<td>6.31 SD(2.73)</td>
<td>9.75 SD(2.06)</td>
<td>0.0009</td>
</tr>
<tr>
<td>Factor V Conflict with Coworkers</td>
<td>4.21 SD(2.16)</td>
<td>5.29 SD(2.50)</td>
<td>9.75 SD(1.25)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Factor VI Workload</td>
<td>8.89 SD(4.03)</td>
<td>13.27 (SD5.94)</td>
<td>16.00 SD(7.34)</td>
<td>0.0015</td>
</tr>
<tr>
<td>Factor VII Uncertainty Concerning Treatments</td>
<td>4.21 SD(2.40)</td>
<td>5.37 SD(2.82)</td>
<td>7.75 SD(3.40)</td>
<td>0.0306</td>
</tr>
</tbody>
</table>

**Health Status**

The PCS of participants of the SE-36V2 had means near 50 which is consistent with PCS scores for US norms; however, the MCS score means were lower than the US norms falling below 50. The score indicated differences between the means dependent on the type of veterinary practice with emergency veterinary support staff having the lowest MCS. The means and standard deviations for the types of veterinary practices are in
Table 8. Means and Standard Deviations of MCS and Type of Practice

<table>
<thead>
<tr>
<th>Type of Practice</th>
<th>MCS Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty</td>
<td>45.51</td>
<td>10.63</td>
</tr>
<tr>
<td>General</td>
<td>43.95</td>
<td>9.89</td>
</tr>
<tr>
<td>Emergency</td>
<td>38.39</td>
<td>18.10</td>
</tr>
</tbody>
</table>

Folkman and Lazarus (1988), state that people vary their coping strategies by the relationship between the person and the environment. The different environments of the veterinary setting explored in this study demonstrated a difference in the coping strategies used by the participants. A one way ANOVA analysis between types of veterinary settings was conducted to explore the influence of type of veterinary practice on coping strategies used by the participants. Coping strategies which showed significant p-value differences were Escape-Avoidance ($F=5.32, p<0.007$) which describes wishful thinking and behavioral efforts to escape or avoid the problem, Positive Reappraisal ($F=3.38, p<0.034$) which describes efforts to create positive meaning by focusing on personal growth, Self Controlling ($F=6.23, p<0.003$) which describes efforts to regulate ones feelings and actions, and Seeking Social Support ($F=4.37, p<0.016$) which describes efforts to seek emotional and informational support. Strategies of coping means standard deviations are shown in Table 9.
Table 9. Ways of Coping and Types of Practice Means and Standard Deviations

<table>
<thead>
<tr>
<th>Coping Strategy</th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape-Avoidance</td>
<td></td>
<td></td>
<td>5.34</td>
<td>0.007</td>
</tr>
<tr>
<td>Emergency</td>
<td>11.50</td>
<td>6.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>5.56</td>
<td>3.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty</td>
<td>4.60</td>
<td>3.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td></td>
<td></td>
<td>3.38</td>
<td>0.395</td>
</tr>
<tr>
<td>Emergency</td>
<td>13.00</td>
<td>6.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>6.56</td>
<td>4.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty</td>
<td>6.75</td>
<td>4.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Controlling</td>
<td></td>
<td>6.23</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>Emergency</td>
<td>15.50</td>
<td>4.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>8.03</td>
<td>4.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty</td>
<td>9.50</td>
<td>4.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td></td>
<td>4.37</td>
<td></td>
<td>0.016</td>
</tr>
<tr>
<td>Emergency</td>
<td>9.50</td>
<td>1.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>6.11</td>
<td>3.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty</td>
<td>4.60</td>
<td>2.92</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Occupational stress has been found to have effects on nurses’ physical and mental health (Burnard et al, 2000; Hanniganet al; Lambert et al 2004). The strategies one uses to deal with the stressors may also affect the health outcome of the worker. This study examined the correlations of physical and mental health component outcomes and the stressors and coping strategies using Pearson’s correlation coefficient. Six out of the
seven stress factors have statistically significant correlations with p values <0.05. There are six out of the eight coping strategies which have a statistically significant p-value of <0.05. The PCS and MCS p-values are shown in Table 10.

Table 10. Correlations of MCS and PCS with Stress and Coping

<table>
<thead>
<tr>
<th>Variable</th>
<th>PCS</th>
<th>MCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor I Death and Dying</td>
<td>p=0.0035</td>
<td>p=0.0121</td>
</tr>
<tr>
<td>Factor II Conflict with doctor</td>
<td>p&lt;0.0001</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Factor III Inadequate preparation</td>
<td>p=0.0248</td>
<td>p=0.0378</td>
</tr>
<tr>
<td>Factor IV Lack of Support</td>
<td>p=0.0107</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Factor V Conflict with Coworkers</td>
<td>p=0.0016</td>
<td>p=0.0002</td>
</tr>
<tr>
<td>Factor VI Workload</td>
<td>p=0.0009</td>
<td>p=0.0217</td>
</tr>
<tr>
<td>Factor VII Uncertainty Concerning Treatments</td>
<td>p=0.0459</td>
<td>p=0.217</td>
</tr>
<tr>
<td>Accepting Responsibility</td>
<td>p=0.9642</td>
<td>p=0.0216</td>
</tr>
<tr>
<td>Confrontive Coping</td>
<td>p=0.1597</td>
<td>p=0.0626</td>
</tr>
<tr>
<td>Distancing</td>
<td>p=0.2369</td>
<td>p=0.3687</td>
</tr>
<tr>
<td>Escape-Avoidance</td>
<td>p=0.0580</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Planful Problem Solving</td>
<td>p=0.5208</td>
<td>p=0.3381</td>
</tr>
<tr>
<td>Positive Reappraisal</td>
<td>p=0.8753</td>
<td>p=0.0136</td>
</tr>
<tr>
<td>Seeking Social Support</td>
<td>p=0.1568</td>
<td>p=0.0113</td>
</tr>
<tr>
<td>Self-Controlling</td>
<td>p=0.4365</td>
<td>p=0.0005</td>
</tr>
</tbody>
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Analysis as Related to the Research Questions

Does veterinary support staff in the state of Alabama experience high occupational stress? The veterinary support staff in Alabama experience high levels of stress as seen with 73% of the participants scoring above the score of 31 on the MVNSS.

What are the potential occupational stressors in a veterinary setting? The largest
contributor to stress for the veterinary support staff was the workload followed by death and dying with third highest stressor being indicated as conflict with doctors.

What is the physical health status of veterinary support staff in Alabama? The physical health status of veterinary support staff is statistically above the U. S. norm score of 50 for the general public with a mean score of 52.

What is the mental health status of veterinary support staff in Alabama? The mental health status of veterinary support staff is significantly below the U.S. norm score of 50 with a mean score of 44.

Is there a relationship between occupational stress and the physical and mental health status of veterinary support staff? There is a relationship between occupational stress and mental and physical health status of veterinary support staff with 6 out of 7 subscales having correlations with p<0.05.

Is there a relationship between coping strategies used by veterinary support staff and health status? There is a relationship with coping strategies and mental health of the participants with p-values < 0.05 in 6 out of 8 scales.

Is there a relationship between stress and intent to leave employment in a veterinary setting? There was not a positive correlation between intent to leave and stress levels.

Is there a relationship between coping strategies and stress in veterinary support staff? A relationship between coping strategies and stressors was seen with p<0.05.

*Analysis as Related to Hypothesis*

There was no support found for the hypothesis that the physical, psychological, and environmental factors of a veterinary setting do not have an effect on stress of the
worker as the MVNSS scores and the qualitative data indicated high stress from physical, psychological and environmental factors.

The null hypothesis that there is no relationship between mental and physical health effects and stressors in the veterinary setting is rejected because correlation between scores of the SF-36V2 and MVNSS indicate a correlation of these variables.

The hypothesis that there is no relationship between coping strategies used by veterinary support staff and health outcomes of this workforce must be objected because the WCQ and the SF-36V2 were found to have correlations between their variables.

It was hypothesized that there was no relationship between coping strategies and stress levels reported by veterinary support staff. The null of this hypothesis must be rejected because the correlations between the WCQ and the MVNSS indicate there is a correlation.

There was a failure to object the null hypothesis that there is no relationship between stressors in the veterinary setting and intent to leave of the veterinary support staff.

It was hypothesized that there was no unique phenomenon in veterinary support staff to be found in the qualitative data which had not been described in the literature. This hypothesis must be rejected because phenomenon not found in the literature review was found in the qualitative data.

Qualitative Analysis

Few studies have explored veterinary support staff, therefore, there is limited literature involving this workforce. The qualitative portion of this mixed methods
sequential design provides a rich description of the experiences of individuals in this profession. The participants were purposely selected to participate in the interviews based on their occupation as a veterinary support staff worker, member of AVTA and indicated a desire to be interviewed. The interview participants were six female veterinary support staff ranging from age 24-53. The interview participants included: 4 LVT, 1 RVT, and 1 non licensed assistant with a bachelors degree. Two participants from each three regions as designated by the ASBVME of the state of Alabama were interviewed. Four participants work in general small animal practices, one in a specialty veterinary setting, and one in an emergency veterinary hospital. Two participants from each region of the state are represented.

The interviews were audio recorded and transcribed by the researcher. Coding was conducted by the researcher and a second coder. Clusters of meanings were developed from the transcriptions into themes. A textured description of the lived experiences of the veterinary support staff was developed from the themes using the verbatim transcription to understand how feelings and thoughts contribute to experiences of the veterinary support staff. Member checks of the data analysis from the qualitative were performed and confirmed as an accurate account of the lived experiences of the participants.

The following phenomenon were discovered during the qualitative aspect of this study: (pseudo-names were used to protect the participants identity)

The duties of the support staff are endless, ever changing, and undefined for example: interview participant Meredith noted performing anesthesia, surgery preparation & recovery, debt collections, wellness exams, client counseling, euthanasia
and staff management all within the same day. Participants listed an unending list of responsibilities and duties. Sharon expressed the feelings and descriptions given by the participants’ best when she said “what do I not do.” The veterinary support staff experiences ambiguity in their role as described by Sharon when asked to describe her duties she replied “I guess it depends on which doctor you ask” and “I don’t really know who my boss is.” Meredith described the ambiguity as “it’s kind of hard to explain your exact duties” “I think it depends on where you’re located.” The participants described their duties as that of taking care of animals (all referred to the animals as patients), taking care of clients and taking care of the practice. Specifically Meredith, Patty, Sharon, and Nancy noted “lab work, surgery prep, post surgery care, anesthesia, filling prescriptions, IV catheter placement and euthanasia” as duties they routinely perform. Sharon, Meredith, Nancy, and Anna all note management of the practice as part of their duties however they are conflicts associated with those duties as Sharon note “Dr. X would just like me to run the place” “I do payroll, interviews” as she thought about their duties she said “I am sitting here thinking what do I not do the only thing I don’t do is his personal bills and expenses.” Meredith described her management duties as “I take control of the whole clinic if anyone has a problem they come to me.” Sharon described opening the clinic in the morning and closing the clinic at night. Sharon, Meredith, Patty, Anna, and Nancy all said that their duties included compassion and care for the animals and the clients. All the participants seem to think their situation was unique. Nancy expressed this as “I don’t think all clinics are like this.”

This is a caring profession of health care workers in a veterinary setting.

Examples of the care provided by these professional is described by the participants as
providing good quality medical care and caring for both the patients’ and clients’ needs in a time of trauma and emotional distress. All of the participants discussed caring for people and animals. Patty said “I am choosing not to use my bachelors’ degree because I love animals.” Sharon noted “I could do something else, yeah, I care that much, it’s because I care about people just like I care about their animals.” When exploring the veterinary support staff it was expected that the workers would express a love or deep caring for animals however it was found that all the participants expressed a deep caring for people. The veterinary profession uses the term client for the person owning the pet which is referred to as the patient. Chantal expressed her enjoyment of dealing with the clients when she said “clients love me” and “I hug clients.” All of the participants expressed their commitment to be there for clients in times of need.

The demands on this workforce can become consuming for the dedicated professional. This was described by several of the interview participants as an all consuming profession due to the needs of the patient and the demands placed on the worker such as medications or treatments needed after hours as well as unsolved medical conditions and the expectations of the clients to receive results and to be available to the public. One interview participant described this as missing her family’s Christmas gathering to assist the doctor in a procedure and missing her children’s baseball games due to the needs of the practice. This was a very emotional topic for the participants with many of them feeling torn between obligations to family and work, most (4 out of 6) cried when discussing this topic. Dedication to the profession, clients, patients and clinic or hospital was seen in the many comments made by the participants. Sharon said “I do follow ups.” “People call me at home.” “I went home and researched then I e-mailed the
"findings to the doctor" said Anna of a medical case which had baffled the doctor. Patty’s dedications to the patients are expressed by her comment "I wanted to pay for the cat myself.” Meredith took that a step farther and noted “I paid for that lady’s medications for her dogs.” This dedication sometimes becomes a stressor as Anna notes “it consumes me” “Anna becomes veterinary technician, veterinary technician becomes Anna.” Anna says she cannot concentrate on anything else except the patient in need she says “I cannot focus on my son; I cannot focus on riding my horse.” Nancy made very similar statements concerning her profession consuming her life she said “I didn’t want it to consume me but it did.” Nancy became very emotional when she stated “it was my life over my children, over my boyfriend, over my parents, over everything.” Chantal expressed how much she was dedicated to the profession when she said “I’ve given my body to veterinary technology.”

The support staff often takes the blame of negative outcomes in a veterinary setting. The doctor blaming the support staff for deaths of patients was emotionally overwhelming for the participants as they felt they had done everything within their ability to save the patient. The placement of blame on the support staff for clients’ inability to pay medical expenses of pets was discussed as coming from both the client and the doctor. The support staff member is often the individual who discusses expenses with the client and collects payment for treatment. The blame is placed on the support staff for clients wait times to see the doctor. Meredith explained this as one client asking her “can’t you get your doctor here on time.” Anna noted having to tell clients “I’m sorry for our stupidity all day long.” The blame for late appointments, death of a pet, pricing, and other negative feeling from clients and veterinarians was described as being part of
the role of the veterinary support staff. Nancy, Meredith, and Sharon all note apologizing all day long for the tardiness of their doctors with scheduled appointments due to the doctors personal choices. Nancy explained a situation where a patient died after she followed the DVM’s orders with a chronically ill patient as she hung her head down and said “he specifically said you should have saved that dog.” She noted “If an animal passed away, it was always my fault.” It was obvious by Nancy’s expressions that this was an emotional experience for her, she described it as “He said it more than one time well look that’s your fault that really hurt my feelings because dogs you get attached to them.”

There are health concerns for aging veterinary support staff. The oldest of the participants was 53 years old. She stated her arthritis and chronic back pain made it difficult to perform her duties at work. The three older participants discussed trying to go more into management with two taking courses to improve their knowledge and management skills as their physical health was limiting to the job. One participant said “I have herniated my back three times while I was at work” also noting that many support staff have limitations due to repeated back injuries as they get older. Three of the interview participants were over the age of 40. All three of these participants expressed concerns of the ability to perform their task due to physical limitations either currently experiencing or to come with age. Chantal, the oldest of the interview participants noted “My eyesight is failing my hearing is failing making catheter placement and other tasks difficult.” All of three of the participants over 40 stated they were overweight. All three participants wanted to continue to be involved in veterinary medicine but were extremely concerned of what their role would become. Two of participants saw their role evolving
to management when they could no longer perform the physically demanding duties involved in their jobs and both had pursued additional education. Chantal cried as she expressed her concerns when she said “We don’t know what to do with old sick techs.”

One of the participants asked the researcher a hard question, the question asked was “how many technicians do you know who have a herniated disk?” The participant then answered her own question with “Like, a million I have the same back problems that every other veterinary technician has I mean our backs give out on us.”

*There are multiple environmental stressors in a veterinary setting.* One participant was very concerned about the noise level in the practice because the kennels are stainless steel and the walls are concrete the noise level was described as “so loud it rings in your ears.” Environmental stressors were described by Meredith as “Noise, I wish someone would look at the noise of barking dogs in concrete kennels.” She described trying to wear hearing protection which then caused another hazard of the inability to hear an aggressive dog coming to attack. Hostile environments where employees are “walking on egg shells” to not upset supervisor or doctors was described by multiple participants. Doctors throwing instruments when frustrated which caused the workers stress was noted by several participants. Seeing patients in need of care and unable to provide that care caused great stress to the support staff. Patty expressed this by saying “My number one stress in this field is not always being able to do for an animal what you want to do because they are the property of a client.” She talked about a cat she described as “a blocked cat screaming in pain.” Patty explained the case “She did not have the money we went back and forth trying to help, so we tried to do everything we could to get her to let us provide some kind of care for this animal so the animal doesn’t
suffer and go home and die a painful agonizing death, and she took it home anyway.”

Patty was visibly upset by the recollection of this case and others like it. Conflict with other employees seems to be of concern. Patty and Chantal related this to working long hours of 10-14 hours per shift. Meredith, Sharon and Anna both noted employees bringing personal problems to work as a major employee conflict. They also noted absenteeism due to illness as a stressor, Meredith expressed this as “Lord knows in veterinary medicine you’re gonna have the most sick people in the world, I don’t know what it is we just draw sick people to come to work in the veterinary field.”

There is an idolization of veterinarians by veterinary support staff. Discussions with veterinary support staff indicated they are so passionate to the needs of the animals they idolize the veterinarian who is seen as one who heals and protects animals. This phenomenon was experienced by the researcher when participants talked about the disruptive behavior of doctors being accepted by the participants and often aimed at the support staff: disruptive behavior being described as throwing instruments, yelling and cursing at staff members, refusing to speak to staff members, criticizing staff in front of clients, being unavailable to clients or patients, and yet the support staff would praise the doctor with comments such as “I love him”, “he’s like my father”, “he’s a good person”, “he’s a great doctor”, “I would leave if he left.” Not all doctors were described as disruptive. Two of the six participants praised the compassion, care and skill of the doctors they worked with. A theme which arose from the interviews was that of idolization of the veterinarian. The support staff while explaining or describing an unpleasant encounter with a veterinarian always added a positive comment about that veterinarian. An example of this was Sharon said “I was on salary for 4 years and now I
am not.” Sharon was on salary however she explained when she had to take a short leave to take care of a medical issue she came back unknowing that her pay status had changed. She explained her hurt feelings, and embarrassment with the other staff members for not knowing however she preceded this statement with “the owner of the clinic has been good to me as of lately.” Nancy said very similar statements while explain had how difficult the doctor could be with “moods” and “demands.” In the same sentence Nancy said “I loved my job, but he was killing me” she followed that statement with “he was a good doctor a good person.” Meredith notes wanting to go back to work for a doctor she loved but he was always yelling at her and did not understand her family obligations as a single parent.

_Illass and injury are accepted as common place risk in a veterinary setting._

Injuries were evident by the many scars participants revealed to the researcher. These injuries continue to be under reported as support staff self-treat or are told by employers to not seek medical treatment or are not allowed to use workers’ compensation insurance. The BLS (2009), reported injures for animal care workers in 2009 as 1,400 injuries per 10,000 workers for sprains, strains, and fractures. There is not an accurate count of bites and scratches which can lead to infection and zoonotic diseases. Many veterinarians will pay medical bills out of pocket to avoid using workers’ compensation for fear of rates rising. When asked about doctors visits for injuries most participants shrugged and knowingly smiled about self treatment. When asked about injuries or illnesses in the workplace all of the participants revealed scars of varying depths and length in the upper body. The participants were able to describe in detail the events leading up to an injury from an animal. The majority of the injuries were cat and dog bites and scratches. Some
severe scars were shown and some were described. The majority of the dog bites described occurred with dogs that were waking up from anesthesia. Anna described one dog bite as “That one happened a year ago, I couldn’t get him off.” “His tooth was stuck to the bone” Meredith described a dog bite as “My inner thigh was ripped out by a Rottweiler” and “This one is from an iguana.” Sore muscles and back problems were reported as common place. Only one of the participants noted using workers’ compensation insurance. All of the participants noted staying at work or going right back to work as soon as the injury was addressed. Zoonotic disease such as tick-borne diseases was reported by two of the participants.

There is a lack of formal education available for training of veterinary support staff in Alabama. This lack of training creates a deficit in the workforce and conflict in the workplace. Four of the six participants were graduates of an on-campus associate degree program which no longer exist in Alabama. These four participants were very concerned about the education of future support staff and credentialing. Chantal said “you cannot teach someone how to put in a jugular catheter online” while Meredith said “when you were there (on campus) you had someone to go to, a mentor, someone to show you how and what to do and why to do it for any procedure.” The ambiguity often creates conflict as Patty noted “coworkers don’t always like that I am in a leadership role they think they should be a little higher up the totem pole” as Patty is in role of leadership holding a bachelors degree and many years of experience; however, not being licensed in Alabama has created conflict with one LVT in her workplace. There were concerns from 5 of the 6 participants concerning education and training of veterinary technicians and assistants. There was great concern of a lack of skilled and credentialed support staff.
These participants all discussed the lack of availability of an onsite associate degree program in the state of Alabama as 4 of the 5 participants concerned about this topic had attended and graduated from an onsite associate degree program which was closed and reopened as an online program.

*Unhealthy coping strategies are being used to cope with stressors in the workplace.* When asked about how the participants cope with the stressors of their job two indicated alcohol and sleep. One just said “I don’t very well.” One just threw up her hands and shrugged her shoulders and said “I don’t know.” Two indicated they have to get away for a while. Four of the 6 participants cried. One participant said “I don’t know how to cope” and one participant gave a heavy sigh and a silent answer of shrugging her shoulders and hanging her head down.

*There is a desire to continue in their current profession.* When asked about their intention to continue in their current jobs and the profession all of the participants voiced their desire to continue in veterinary medicine however they were unsure if they could continue in the same capacity because of wage, health, conflicts, and time concerns. Patty stated “I always plan to be involved somehow forever with animals, I just don’t know if it will always be fulltime because of the money.” “It’s hard, should the money be better I would probably do this forever but if it’s up to me to buy a house I’m going to have to do something different.” Patty frowns and looks sad at the thought.

During the course of the interview 4 of the 6 participants cried while discussing their job. The ones that cried made statements about their crying such as “I don’t usually cry in front of strangers” and “I’m sorry I didn’t mean to get emotional it’s just so hard sometimes.”
Summary

A high response rate was achieved for the web-based survey. The thorough analysis of the data provided insight into this worker population. The use of the validated instruments indicated this workforce experiences high stress, heavy workload, and utilizes coping strategies which affects the health of the worker. The qualitative data provided for rich descriptive insight into this work environment. The results of this study will allow the researcher to add to the literature concerning this workforce.
CHAPTER 5
DISCUSSION

The overall goal of this mixed method sequential study was to explore the occupational stress in veterinary support staff of Alabama. An examination of the demographic information, stressors, health status, intent to leave and coping strategies was accomplished through the administration of a web-based survey to the 104 members of AVTA. A response rate of 75% was obtained with 79 members completing the survey. Analysis of the quantitative data guided the refinement of interview questions for qualitative data collection. The qualitative data were gathered utilizing a phenomenological method with one-on-one interviews of six individuals. The interviews allowed for collection of rich descriptive data from this workforce in Alabama. This chapter will describe the meanings and implications of the quantitative and qualitative data as well as anticipated future research.

Instruments

The instruments used in this study allowed for collection of quantitative data which will add to the literature concerning this workforce. The three instruments were selected because of their validity, reliability, ability to be self-reported, and ability to be used online.

An instrument targeting the stress of this workforce was not available; however, the Nursing Stress Scale (NSS) has been used to assess occupational stress in nurses which had similarities of the environment therefore permission to modify the NSS was
requested and granted. The NSS was renamed MVNSS. The pilot study with the MVNSS indicated usefulness in assessing occupational stress in veterinary support staff.

The WCQ has not previously been used in assessing the coping strategies of veterinary support staff; however, it has been used in studies of nurses and other health care workers. This instrument was selected because of the similarities of the task of health care workers and veterinary support staff. It provided insight into the coping strategies this workforce uses to deal with stressors such as death, conflict with coworkers, and conflict with doctors and it is recommended for future studies on this workforce.

The SF-36V2 was selected because of its wide use in many venues and its reliability. The SF-36V2 collected perceived health status of the respondents such as bodily pain, vitality, and social interactions. The ability of this instrument to separate mental and physical health components made it useful to determine the health of the respondents.

The reliability of the instruments was estimated using internal consistencies. The MVNSS had a Cronbach’s alpha of 0.87 well above the acceptable reliability coefficients. The SF-36V2 subscales Cronbach’s alphas were all above the generally accepted number of 0.70 with a range of 0.79-0.95. The WCQ scales has alpha scores at the lower end (0.55-0.78) of the generally accepted 0.70 seen in instruments; however, the alpha scores for the WCQ in this study are similar to scores found in Lazarus & Folkman’s (1981) work as well as other literature. This was expected because the WCQ is a measure of coping strategies which are quite variable. Instruments assessing coping skills, mechanisms, and strategies tend to have low consistency because the coping
variables are severely different and there is little repletion in the questions. The WCQ was selected because it has been reported as having higher alphas than other coping measurements (Lazarus & Folkman, 1981). This indicates that the instruments are reliable for this study.

Conceptual Framework

The theoretical framework of stress and coping (Lazarus and Folkman, 1984) was used to guide this study. Exploration of the stressors revealed that veterinary support staff appraised their occupation as stressful. Participants provided categories of stress as well as descriptive information.

Findings from quantitative data and qualitative data were consistent with the theory that psychological stress is determined by an appraisal of an event and the interaction between the situation, beliefs of the individual, goals of the individual, demands on the worker, and the environment. The events occurring in the veterinary setting which were discussed by the interview participants, as well as indicated in the quantitative data, as stressful were events of death and dying of patients, workload, and conflicts with veterinarians. These events were appraised with the dynamics of the environment seen as: harm to the patient, threat to the self esteem of the worker, the challenges of patient and client care, the benefits of caring for the patient and limited resources of as well as the situation of patients in need of care or in some cases disruptive behavior of the doctors and personal beliefs of caring for animals and goals of pleasing the client and veterinarian. The participants then chose a coping strategy which in the quantitative data as well as the qualitative data was seen as primarily emotion focused.
coping by utilizing escape–avoidance, positive reappraisal, seeking social support, self-controlling, and confrontive coping strategies. The outcomes of the coping strategies appear to be unfavorable by descriptions of helplessness and dissatisfaction of outcomes from the participants this is concurrent with findings from previous studies (Folkman, 1986). The emotional outcomes from the events (occupational stressors) using primarily emotion focused coping strategies due to the stressors (perceived as unchangeable) appear to have a negative effect on the mental health of the workers as indicated by the mental health scores.

The age range of this population was 19-69 years of age with 63% under the age of forty. Only 3% were over age 60. Perhaps the majority of this workforce was below age forty because of the physical and emotional demands of the job. The declining number of veterinary support staff over the age of 50, which is well below retirement age, may indicate early retirement or change of profession before that age.

LVTs made up 52% of this population with 35% of the population being unlicensed assistants, and 13% representing other classifications such as Registered Nurse (RN), Certified Euthanasia Technician (CET), and Licensed Practicing Nurse (LPN). The education of this workforce indicated a primarily college educated workforce with 70% having obtained at least an associate degree and 22% of those obtaining a bachelors degree or higher. The education level of this workforce denotes a dedication to the profession. LVTs must complete a college degree in veterinary technology and sit for a national and state exam. The LVTs interviewed discussed many hardships they faced to obtain their certification such as working two jobs to pay for school, being a single mother, being below the poverty level to qualify for government assisted housing, and
working nights and weekends to attend classes during the day. The degreed unlicensed participants interviewed also indicated a deep passion for the profession however they felt it was not financially advantageous for them to take the time or incur the expenses to gain certification. The lack of strict enforcement of practice acts, rules, and laws governing veterinary medicine as well as unclear job duties and responsibilities allow for ambiguity and stress in this workforce.

AVTA is a volunteer and 501C nonprofit professional association. The association plans continuing education, manages the association, supports, trains and recruits veterinary support staff. The active members of AVTA are dedicated to their profession offering training to emergency responders in multiple areas of the state in pet emergency response, organizing continuing education, and providing scholarships for education of veterinary support staff. Ninety-eight percent of the respondents in this study reported over one year in the veterinary field indicating an experienced workforce. This is a young workforce; therefore, the length of experience may indicate that these workers started in this profession before the age of 19. Forty percent indicated they had been in their current job for more than one year while 52% indicated they had been in their current job more than five years. This is not consistent with the literature, which indicated high turnover in veterinary support staff. This may be because the participants are members of a professional association indicating dedication to the profession. The length of employment concurs with the high percentage of veterinary support staff (60%) who said they do not intend to leave their current job. The length of employment may indicate a sense of dedication this workforce may have to their job and profession.
The types of practice that veterinary support staff work in differ in hours of operation and procedures performed. The expectations of veterinary care from the public have changed. The public is more aware of the level of care available due to increased exposure to available medical treatments and procedures available for animals through internet and television. In addition the public is more aware of the availability of emergency procedures, orthopedic procedures, internal medicine, and other specialties available in veterinary medicine. The increase and changes in status from an agricultural relationship with animals to companion animals and the increase in the human-animal bond in companion animals has changed the expectations of the public. The majority of participants (57%) in this study work in general small animal practices which operate during the day with set business hours and are appointment based. Emergency practices are generally open after hours, on weekends, and holidays, or 24 hours. Five percent of participants worked in emergency practices. Thirty-eight percent of participants worked in specialty practices which generally operate on an appointment and referral basis with set business hours. The workload, hours of operation, level of experience, number of practices, and wages may affect the number participants in each type of practice.

Job satisfaction was not measured in this study; however a question about the worker’s intent to leave was included in the demographic questionnaire. A relationship between intent to leave and occupational stress was not found; however the lack of correlation may be due to an inadequacy in collection of data concerning intent and desire to leave. This information could have been captured with an instrument which asked about the desire to leave and job satisfaction. There is a need for an instrument to
determine specific information concerning desire, job satisfaction and intent to leave in this occupation.

The interview participants enjoy their job and duties associated with working with, caring for, and providing treatment to animals. They also enjoy the interaction with clients. The participants indicated their occupational stress comes from ambiguity, disruptive behavior of doctors, workload, inability to treat patients, pain and suffering of animals, euthanasia, environmental stressors, inability to separate from work duties, and uncertainty of the future of their careers. The participants discussed coping with work stressors by drinking alcohol, eating, or seeking support from coworkers. All of the interview participants requested suggestions of coping strategies or just were unsure of how they coped.

Mixed-Methods

This section integrates the analysis of both phases: quantitative and qualitative data as related to the research questions.

The quantitative analysis revealed that 73% of the participants experienced high levels of stress. Workload, death and dying, and conflict with doctors were found to be the three major contributors to high stress. These findings were supported and elaborated upon by the qualitative findings as participants described their jobs as stressful.

Descriptions of workloads included multiple tasks such as; laboratory duties, surgical duties, management duties, inability to complete task due to time constraints, and understaffing of trained support staff. The expectations from the veterinarians and the
public of this workforce to successfully fulfill multiple roles in the veterinary setting performed by multiple healthcare workers in other health care settings may cause an occupational health risk to the veterinary support staff. Another concern of conflict for support staff was credentialing and education. Having undefined and non-adherence to standards of education and credentialing may cause conflict within the workforce. The concern of understaffing of licensed, trained and experienced support staff was discussed as a contributor to the workload. An increase in the number of educated, trained, experienced, and credentialed support staff may decrease the workload and stress to this workforce.

Death and dying was the second contributor to high stress in the quantitative results. Interview participants acknowledged their emotional attachment and deep involvement with patients and clients. These relationships caused sadness, grief and bereavement when a patient died or they were unable to help a patient in need. This was evident through their discussion of specific examples of cases which months or years later still caused an emotional response. Many examples were given of specific cases of patients in which the participant became emotionally attached to the patient and was emotionally disturbed when the patient died. Often the support staff provides care for these patients from puppy stage through adult life. A relationship with the families of the pet are also developed; therefore, if the pet dies the loss of life and the loss of the relationship with the family becomes a stressor. Interventions targeting these specific stressors may help to alleviate feeling of loss and lessen compassion fatigue and other health issues associated with prolonged grief.

Conflict with a doctor of veterinary medicine was the third highest contributor
found in the quantitative data to increase stress. The participants interviewed supported this stressor citing many conflicts with doctors; however, blame placed on support staff for negative outcomes, under appreciation of the support staffs’ responsibilities, experience, and education, and disruptive behavior (yelling, throwing things, threatening) were the items related to conflicts with the doctors prominent in the interviews.

The qualitative results indicated that the majority of the conflict between employees came from role ambiguity. Conflict with coworkers was a large contributor to high stress. The interview participants clarified the conflict with coworkers; as staff they were supervising not wanting to come to work or not being dedicated to the job. Conflicts about credentialed or degreed support staff verses non-credentialed and non-degreed support staff were discussed by all interview participants. There were concerns about the veterinary practice act not being followed and veterinarians allowing unlicensed support staff to perform procedures and duties regulated in the practice act. The concerns were for protection of the patient, the practice and the veterinarian or practice owner. These were also concerns to maintain the standards of the profession. While there was conflict with coworkers there was also an acknowledgement of a strong support system from coworkers within the individual practices.

Other stressors made clearer in the interviews were support staff being exhausted and therefore easily agitated. The inability to provided needed medical care to patients due to monetary constraints was noted as a prominent stressor in four of the six interview participants; this stressor caused conflicts with the doctor and clients. Noise of barking dogs was discussed by two of the interview participants. A lack of compensation for level of education and experience expected from the doctor and public was noted as a stressor
by five of the six interview participants. Two participants stated everything about their job was stressful.

The quantitative data of this study indicated a negative relationship between stress and intent to leave the current job. Those experiencing the most stress were the least likely to leave. The qualitative data supports the concept that high stress does not indicate intent to leave. Interview participants’ reasons for not leaving a job with high occupational stress included dedication to the patients, clients, doctors, profession, concerns of having to start at a new job with lower pay and limited job opportunities. Four of the six interview participants wanted to leave their current job, but are unable to for fear they may not be able to find a better position. One participant did not want to leave her current job but feels she may be forced to leave because of low wages. One participant interviewed had quit her job during the study time. This participant was relieved to be under less stress; however, she said she missed everything about the job, including the veterinarian.

The quantitative data indicated that the type of stressor or factor of stress was correlated with the coping strategies used by the participant; however the types of coping strategies used by the veterinary support staff are emotion focused. This is unique to this workforce as problem focused coping is more commonly used in workplaces (Lazarus & Folkman, 1981). Using emotion focused coping strategies may come from the deep caring and dedication to the animals this workforce embraces. An example of emotion focused coping is accepting responsibility or blame as many of the participants expressed doing daily in their job.

The quantitative and qualitative results are in tandem as both indicated that
overall this workforce had good physical health. Two-thirds of the interview participants felt in good physical health discussing active participation in horseback riding, playing softball, and walking. One third of the interview participants indicated significant health concerns such as chronic back pain, heart conditions, and arthritis. The physical demands of the job may cause a healthy worker bias. Those who were unable to meet the physical demands may have left the profession. One participant had recently left the profession due to health conditions and was unsure if she would continue in the profession. One participant was experiencing daily pain and was worried she would not be able to continue in her current position or the profession. These two participants may leave the profession well before retirement age due to physical demands of the job.

Quantitative and qualitative data validated each other in all aspects of mental health and stress. Both indicated that veterinary support staff have low or poor mental health status, many below national averages. The qualitative results supported this finding as fifty percent of interview participants discussed taking anti-anxiety medications or being treated for depression. Two thirds of the participants cried during the interviews. One participant asked for help for alcoholism, and one asked for help in dealing with stress. A correlation with health status and occupational stressors indicated those with higher perceived stress have lower mental and physical health. Interviews supported this finding, as the interview participants who discussed overwhelming stress also indicted chronic physical and mental health concerns.

Six out of eight coping strategies were found to have a relationship with mental health status and one scale of physical health status. This may mean use of emotion focused coping strategies in the workplace is unhealthy and unique to this workforce
because in most workplaces *problem-focused* coping strategies are used. The qualitative data indicated that veterinary support staff are in need of coping strategies to deal with stressors unique to their job to improve mental health.

**Hypotheses**

The high stress indicated from the MVNSS scores and the qualitative data collected prompted the rejection of the null hypothesis that the physical, psychological, and environmental factors of a veterinary setting do not have an effect on the stress of the worker. The rejection of the null hypothesis indicates that the alternative hypothesis is supported. In the qualitative and quantitative data it was indicated that physical, psychological and environmental factors do have an effect on the stress of veterinary support staff. The largest factors affecting stress of veterinary support staff were indicated as workload, death and dying of patients, and conflicts with doctors of veterinary medicine.

The null hypothesis that there is no relationship between mental and physical health effects and stressors in the veterinary setting is rejected because correlation between scores of the SF-36V2 and MVNSS resulted in a significant correlation of these variables. Eighty-six percent of the six stress factors were found to have a relationship with physical and mental health; therefore, the alternative null hypothesis can be accepted.

Seventy-five percent of the coping strategies were found to have a relationship with the physical and mental health status of veterinary support staff; therefore, the hypothesis that there is no relationship between coping strategies used by veterinary
support staff and health outcomes of this workforce was rejected. The correlations of these variables indicate that coping strategies may affect the health status of the participants.

The rejection of the null hypothesis that there was no relationship between coping strategies and stress levels reported by veterinary support staff indicate that the alternative hypothesis may be accepted because the correlation between the WCQ and MVNSS indicate that the way a veterinary support staff worker copes with a stressor has a relationship with the stress perceived from that stressor.

The failure to object the null hypothesis that there is not a relationship between stressors in the veterinary setting and intent to leave of the veterinary support staff does not indicate the desire or intent to leave or stay. The intent to leave and turnover in this workforce needs to be explored to understand the relationship of the work environment stressors and desire or intent to leave.

It was hypothesized that there was no unique phenomenon in veterinary support staff to be found in the qualitative data which had not been described in the literature. This hypothesis must be rejected because phenomena not found in the literature review were found in the qualitative data.

Conclusions

Veterinary support staff have roles which incorporate many duties of multiple healthcare professionals from nursing to anesthesiology. Veterinary support staff are expected to have the education and experience to perform duties such as placement of intravenous and central lines, radiology technique, anesthesia monitoring, surgical
assisting, medication calculations and dosing, knowledge of multiple species, treatment protocols, human resources, health and safety regulations, client communications, grief counseling, and many more. These expectations from the public and the employer can cause stress and heavy workloads.

Veterinary support staff have many management responsibilities. Management responsibilities may include hiring and firing, scheduling of employees, scheduling of appointments and surgeries, ordering supplies and maintaining inventory, maintenance of facilities, and many others. These management duties often fall to the support staff adding to the workload.

The public is unaware of the education, credentials and experiences of veterinary support staff. The titles used in veterinary medicine to identify the support staff are not uniform. This causes confusion for the client and frustration for the support staff. Licensed veterinary technician is a protected title in the state of Alabama; however, many non-credentialed veterinary support staff identify themselves as a veterinary technician causing confusion for the public and frustration for LVT’s. The title of veterinary nurse is used in Australia and England to clarify the education and credentials; however, this is not a recognized title in Alabama. Many veterinary practices in Alabama use the title of veterinary nurse to help clarify the role of the support staff; this may cause further confusion for the public because it is not a recognized title in the United States.

Veterinary support staff experience high levels of stress. The stressors experienced by this workforce are numerous. This study indicated high stress which can have adverse effects on the health of the people working in this occupation.

Stressors in the veterinary setting are multifaceted. The stressors experienced by
veterinary support staff come from workload, death and dying, conflict and environmental stressors. There were many stressors in this workforce identified. One participant summed the stressors when she said “every bit of my job is stressful”.

Heavy workloads are a primary cause of stress for veterinary support staff. The long hours, expectations of the public and veterinarian, needs of the patients, as well as lack of educated support staff place large responsibility on the support staff.

Death and suffering of patients cause great stress for veterinary support staff. The veterinary support staff enters this profession because of a desire to help and care for animals. The death or pain of animals for which they have cared for causes great emotional stress for the support staff. In many situations the support staff have spent countless hours with chronically ill patients or have developed a long term relationship with the patient and client spanning many years. Emergency practice support staff are repetitively experiencing trauma and distraught families. The repetition of these stressors may lead to compassion fatigue, burnout and post-traumatic stress disorder.

Conflicts with veterinarians cause stress to veterinary support staff. These conflicts were described as support staff made to feel guilty for being paid to do their job, associate doctors not following protocols set by practice owners, expectations of support staff to be available all hours, and lack of support from practice owners for managing support staff. Salary and low wages were another conflict with doctors as wages vary greatly.

The lack of public knowledge about this profession, low wages, and feelings of inability to change outcomes are contributors to stress in this occupation. The support staff felt helpless to address the overwhelming stressors in this occupation.
The coping strategies used by veterinary support staff are not adequate for the stressors experienced by this workforce. Low mental health status indicates the stressors may be harmful to this workforce.

Veterinary support staff have concerns about education and credentialing. The concerns about education and credentialing come from the lack of education available for veterinary support staff in the state of Alabama and the lack of the capability of the profession to protect and enforce the practice act.

Implications

This research provided an opportunity to capture descriptors of veterinary support staff. The results provide groundwork for future research in this vulnerable and dedicated workforce.

For the Support Staff

The veterinary support staff members are very dedicated to their profession, the veterinarian, the clients, the patients, and to the practices. This dedication extends beyond an employee/employer relationship with many support staff often staying in adverse or hostile situations. The support staff showed great compassion for the patients and clients. This compassion is not often rewarded by the veterinarian or the public. There is a lack of acknowledgement of the professionals in this field possibly due to a lack of public awareness of the profession, responsibilities, education and experience needed to obtain credentialing. The moral and ethical conflicts felt by the support staff may contribute to the mental health of this workforce. Changes in policy of credentialing and education at the federal and state level may increase public awareness and salary for credentialed
support staff and may also be an incentive for an increase in interest in obtaining credentials for those not credentialed.

The industry trends and standards notes that the veterinary health care expenses of Americans have been growing 7% annually with 15.79 billion spent in 2010 for veterinary, boarding, and grooming care (APPMA, 2010). The rise in the quality of expectations of medical care available for pets has increased a need for veterinary support staff. The BLS (2008) has predicted the number of workers in this occupation to rise by 36%. The expectation of pet owners has increased as pets are considered by many owners as part of the family and the human animal bond has increased. The rise of status in pets has been attributed to baby boomers becoming empty nesters and adding to the number of pets in the household, increased knowledge of the benefits of owning pets, the increase in use of service animals, and increased knowledge of the human-animal bond (Rollin, 2006). The BLS (2010) reported 62% of US households owning pets. These increases will raise the demand for these professionals; however, if stressors, coping, and health effects of the profession are not addressed the public will not receive the care they are expecting.

For the Public

As the public demand for educated veterinary support staff grows it is important to provide education for this workforce as well as for those employing this workforce. This workforce has many public health implications in that they are caring for multiple species and are often exposed to zoonotic diseases. Without proper training they may not recognize these diseases. Many veterinary support staff are involved in research and agriculture. The public health implications of having educated professionals in these
fields are imperative to public health. The demands of the public for highly trained and skilled workers in this occupation may force changes in policy at many levels.

*For Veterinarians, Practice Owners, and Managers*

Physically and mentally healthy workers are more productive workers (Davis, 2005). It is estimated that mental illness cost businesses 33 to 44 billion each year (NIMH, 2008). It is important for veterinarians and other supervisors to be aware of the mental health of this workforce to seek intervention because workers’ compensation, low productivity and turnover can be costly. CDC (1996) indicated that the median number of days away from work due to stress related to an assault by an animal was 61 days. If the environment is stressful for the support staff it may also be stressful for the veterinarian. The cost to the veterinary business owners for mental or physically ill workers can be great policies which include interventions and training in coping strategies and wellness may benefit the business owner. Environmental adaptations and products to limit the stressors in the workplace may be a valuable investment for the veterinarian or practice owner.

*To the Field of Public Health*

The findings of this study on this workforce may have implications on the veterinary health care industry but also the food industry, disaster management, laboratory and research industry, and other service industries involving this workforce. These implications include physical and mental health concerns, coping strategies, and environmental risks of the workers. Development of policies and procedures in this industry may have positive and negative economic effects on the both the public and the business owner.
The researcher’s firsthand knowledge of this occupation comes from over 20 years of experience with a solid reputation in the field of veterinary medicine. She has worked in the field filling many roles ranging from an animal control officer, certified euthanasia technician, non-credentialed veterinary support staff, LVT, instructor and veterinary hospital administrator. The strong support from AVTA for the researcher promoted the study. It is unknown if the support of other similar organizations would support and promote a similar study. The experiences in these capacities allowed for the participants to feel comfortable in speaking freely and openly about their experiences. The familiarity with the veterinary setting including terminology allowed for the researcher to understand the participants’ use of terminology specific to the veterinary profession.

The experiences of the interview participants are not different from the experiences the researcher incurred working as veterinary support staff. Many support staff have contacted the researcher by phone, e-mail, and in person wishing to discuss the study further with examples of reasons they keep their credentials but no longer work in the profession. One such person remains a member of AVTA however is an RN. She stated that she and a classmate graduated from high school and college together, however two years later her friend was able to support herself and this individual was barely making above minimum wage as a LVT. She stated she left a profession she loves for a similar profession that is recognized by the public. She states she is using the same skills and knowledge “just on a different species.” Veterinarians have also contacted the researcher inquiring about participation in the study because of concerns for their own
health and well being.

Limitations of the Study

The quantitative phase of this study was administered online; therefore, weaknesses in this study may include the participant’s lack of computer skills. For example, one participant accessed the survey but only completed demographic questions. The surveys were self-reported which may create bias. The participants were limited to members of AVTA. This study did not include those who have left the veterinary field for illness, change of profession or other reason. Bias may exist because the study was limited to the state of Alabama. Limited information pertaining to this workforce caused challenges in literature review process.

The qualitative phase of the study involved six one-on-one interviews with veterinary support staff. The participants of the interviews may create a bias because those willing to participate may be dissatisfied with their current working situation. This study may also be subject to healthy worker bias. The interviews may only capture the perspective of those willing to interview. The researcher was the interviewer and coder which may create a bias. The participants may be reluctant to disclose information pertaining to their work. This part of the study is dependent on the participant’s willingness to talk about their work experiences. There was only one interview per participant. A one-on-one interview provided rich, in-depth understanding of an individual’s experiences at work. One on one interviews required the participant to not be hesitant to speak and share their experiences or ideas with the researcher. The limitation of participation to AVTA membership may also be a weakness, limiting the
generlizability of the study. A weakness may be that not every respondent who wanted to participate in the qualitative interviews was interviewed.

Strengths of the Study

The support of AVTA and its board members in this research provided for a trust in the members of the researcher and the study. The selection of the interview participants provided for a representation of the different demographic characteristics of the workforce. The willingness of the interview participants to meet with the researcher after one contact by telephone provided for ease of collecting quantitative data. The length of the interviews was guided by the willingness of the interview participants to speak freely about their experiences. The interviews lasted two to four hours or until the participants had saturated and discussed all the questions. The past experience of the researcher in this field provided for a familiarity of the terms used by the participants. Limiting the number of interviews to those who wanted to be interviewed may limit the strength of this study.

Recommendations and Further Research

Results of this study will be shared with the association at the annual continuing education event and published in peer and non-peer review journals.

It is recommended that interventions targeting coping with stressors in this work environment be developed to target this vulnerable workforce. It is important to teach healthy coping strategies and other techniques to combat the negative impacts of high stress. These interventions need to be available to current veterinary support staff and
become requirements in the curriculum of academic programs. Curriculum and professional development courses for veterinarians on safety and health of employees to target workplace injuries is needed. Interventions which have been used in health care workers such as Mindful Based Stress Reduction, Mindful based Cognitive Therapy, support groups, Emotion Focused Interventions, and Progressive Muscle Relaxation may be effective to help workers in this occupation cope with stressors. These therapies may need to be modified to address the unique stressors of workers in this occupation.

All states bordering Alabama have at least two on-campus and online programs educating veterinary technicians at the associate and baccalaureate level. In recent years, the state of Alabama closed its one associate degree program, leaving the state without a two year on-campus program to educate veterinary technicians. It has since opened an on-line associate degree program. While this option may be a good option for some students, it should not be the only program in the state. Alabama may be losing veterinary support staff to other states that have on-campus programs. It is recommended Alabama reopen an on campus veterinary technician program to meet the demands of the public for educated and degreed support staff.

The differences in the veterinary settings indicate a need to further investigate the clinical practices. A further inquiry into the emergency veterinary settings is recommended to further explore and clarify the stress and health differences from general small animal practice and specialty practice.

Veterinarians were described in this study as practice owners, surgeons, specialist and managers. The coping strategies, health status, disruptive behavior and stressors of veterinarians needs to be examined to fully understand the occupation of veterinarians in
Alabama and their perceptions and expectations of veterinary support staff.

This study included credentialed and non-credentialed veterinary support staff. An investigation into the possible differences in health, stress, and coping as related to credentialing and education is recommended.

Research in this subject may be feasible in other states because of contacts through veterinary technician associations and veterinary medical associations. States bordering Alabama have contacted the researcher with interest in this subject. There are differences in education available, credentialing and practice acts by state. These differences may or may not affect the outcomes of stress, health or coping strategies used in veterinary support staff.
References


Ivankova, N., Creswell, J., & stick, S. Using mixed methods sequential explanatory design: from theory to practice, *Field Methods*, 18(1), 3-20


APPENDIX A

Institutional Review Board
UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on October 26, 2010. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56 and ICH GCP Guidelines.

Principal Investigator: FOSTER, SANDRA D.
Co-Investigator(s):
Protocol Number: X080728008
Protocol Title: Occupational stress in Veterinary Support Staff

The IRB reviewed and approved the above named project on 7-9-10. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

This project received EXPEDITED review.
IRB Approval Date: 7-9-10
Date IRB Approval Issued: 7-4-10

Marilyn Doss, M.A.
Vice Chair of the Institutional Review Board for Human Use (IRB)

Investigators please note:
The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.
Informed Consent Document

TITLE OF RESEARCH: Occupational Stress in Veterinary Support Staff
Sponsor: University of Alabama at Birmingham Environmental Health Sciences
IRB PROTOCOL NUMBER: X080728008
INVESTIGATOR: Sandra Morales Foster

Explanation of Procedures

We are asking you to take part in a research study. This research study will determine the occupational stress experienced by veterinary support staff. We will ask you to participate in a one-on-one interview. If you enter the study, we will ask you several questions pertaining to the work environment at your place of employment. The questions will be open ended; therefore, you may answer in your own words. There are no right or wrong answers. All your answers and statements will be recorded and transcribed. We will be recording by audio tape; no video will be taken. Each interview will take place in a central location in each state. Each interview will last 1-1.5 hours.

Risk and Discomforts

There are no known risks or side effects associated with answering these questions. There may be risks that are unknown at this time. You will be given more information if other risks are found.

Benefits

You may not benefit directly from taking part in this study. However, this study may help us better understand how to address occupational stress in emergency and specialty veterinary practices in the future.

Confidentiality

Information obtained about you for this study will be kept private to the extent allowed by law. However, the following groups will be able to view your medical records and have access to private information that identifies you by name; the Office for Human Research Protections (OHRP); and UAB’s Institutional Review Board (IRB). The results of the interviews may be published for scientific purposes. These results could include your responses to the questions asked. However, your identity will not be given out. Recordings will be kept in a locked office at the University of Alabama at Birmingham. All audio recording will be electronically destroyed when transcription and review by faculty advisor is complete.

Refusal or Withdrawal without Penalty

Your taking part in this study is your choice. There will be no penalty if you decide not to be in the study. If you decide not to be in the study, you will not lose any benefits you are otherwise owed. You are free to withdraw from this research study at any time. Your choice to leave the study will not affect your relationship with this institution. You may be removed from the study without your consent if the sponsor ends the study, or if you are not following the study rules.

Cost of Participation

There will be no cost to you from taking part in this study.

Payment for Participation in Research

You will be paid $25 for participating in the interview.
Questions

If you have any questions, concerns, or complaints about the research please contact Sandra Morales Foster. She will be glad to answer any of your questions. Sandra’s phone number is 205-438-3323. The faculty advisor for this study is Elizabeth H. Maples, PhD. She can be reached at 205-934-7209.

If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact Ms. Sheila Moore. Ms. Moore is the Director of the Office of the Institutional Review Board for Human Use (OIRB). Ms. Moore may be reached at (205) 934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for “all other calls” or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Legal Rights

You are not waiving any of your legal rights by signing this informed consent document.

Signatures

Your signature below indicates that you agree to participate in this study. You will receive a copy of this signed document.

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<thead>
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<th>Signature of Participant</th>
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<th>Signature of Investigator</th>
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<th>Signature of Witness</th>
<th>Date</th>
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INFORMATION SHEET

TITLE OF RESEARCH: Occupational Stress in Veterinary Support Staff

SPONSOR: University of Alabama at Birmingham
Environmental Health Sciences

IRB PROTOCOL NUMBER: X080728008

INVESTIGATOR: Sandra Morales Foster

We are asking you to take part in a research study. This research study will determine the occupational stress experienced by veterinary support staff in veterinary practices. We are asking you to participate in a survey which includes three questionnaires. The survey will ask questions pertaining to your job. The questionnaires included in this study should take less than 30 minutes combined time to complete. Please return completed surveys to Sandra Foster via e-mail; sdifoster@uab.edu

Participation in this study is voluntary. There will be no cost to you from taking part in this study.

If you have any questions, concerns, or complaints about the research please contact Sandra Morales Foster. She will be glad to answer any of your questions. Sandra’s phone number is 205-438-3323. The faculty advisor for this study is Elizabeth H. Maples, PhD. She can be reached at 205-934-7209.

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The IRB reviewed and approved the above named project on 7-9-10. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This project will be subject to annual continuing review as provided in that Assurance.

This project received EXPEDITED review.

IRB Approval Date: 7-9-10

Date IRB Approval Issued: 7-4-10

Marilyn Doss, M.A.
Vice Chair of the Institutional Review Board for Human Use (IRB)

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Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.
APPENDIX B

Instruments and Permissions
We are asking you to take part in a research study. This research study will determine the occupational stress experienced by veterinary support staff in veterinary practices. We are asking you to participate in a survey. The survey will ask questions pertaining to your job. Completed surveys will be returned to Sandra Foster via survey monkey.

Participation in this questionnaire is voluntary. There will be no cost to you from taking part in this study.

If you have any questions, concerns, or complaints about the research please contact Sandra Morales Foster. She will be glad to answer any of your questions. Sandra's phone number is 205-438-3323, e-mail address is sdfoster@uab.edu. The faculty advisor for this study is Elizabeth H. Maples, PhD. She can be reached at 205-934-7209.

If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact Ms. Sheila Moore. Ms. Moore is the Director of the Office of the Institutional Review Board for Human Use (OIRB). Ms. Moore may be reached at (205) 934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.
2. Survey for Veterinary Support Staff

This survey is part of research on occupational stress in veterinary support staff. Your input is very important. Please complete the survey entirely and honestly. There are no right or wrong answers. This survey is for research purposes. Your answers will be confidential. There is no link to your e-mail address and your responses. The researcher cannot identify the respondent from the survey participation. The researcher may only contact the respondent if the respondent provides contact information.
Veterinary Support Staff

3. Demographic Section

1. How long have you worked in the veterinary field?
   - less than 1 year
   - over 1 year

2. How long have you been employed in your current position?
   - Less than 1 year
   - More than 1 year
   - More than 5 years
   - More than 10 years

3. What is your highest completed education level?
   - Middle school
   - High school
   - Associate degree
   - Bachelor degree
   - Graduate degree

4. Please indicate your credentials
   - nonlicensed veterinary assistant
   - Licensed veterinary technician
   - Registered veterinary technician
   - Certified veterinary technician
   - none of the above

5. Please indicate gender
   - Female
   - Male
Veterinary Support Staff

6. Please indicate your age group
   ○ 19-29
   ○ 30-39
   ○ 40-49
   ○ 50-59
   ○ 60-69
   ○ 70-79

7. What best describes the veterinary practice you currently work in
   ○ general small animal practice
   ○ general large animal practice
   ○ general mixed practice
   ○ emergency practice
   ○ specialty practice
   ○ university

8. Please indicate your marital status
   ○ single
   ○ married

9. What is your intent to stay in your current job?
   ○ intend to leave within 3 months
   ○ intend to leave within 6 months
   ○ intend to leave within 1 year
   ○ intend to leave within 5 years
   ○ do not intend to leave current job

10. In what town or city do you work?
    [Blank space]
Below is a list of situations that commonly occur in a veterinary hospital. For each item indicate how often in your present job you have found the situation to be stressful. Your responses are strictly confidential. The MVSSNSS(2010) may not be reproduced without permission of Sandra Foster all rights are reserved.

1. Performing procedures that pets experience as painful
   Please indicate how often you have found this situation stressful
   - never
   - occasionally
   - frequently
   - very frequently

2. Breakdown of computer
   Please indicate how often you have found this situation stressful
   - never
   - occasionally
   - frequently
   - very frequently

3. Criticism by a doctor of veterinary medicine
   Please indicate how often you have found this situation stressful
   - never
   - occasionally
   - frequently
   - very frequently

4. Feeling helpless in the case of a pet who fails to improve
   Please indicate how often you have found this situation stressful
   - never
   - occasionally
   - frequently
   - very frequently
9.

how true or false is each of the following statements for you?
SF-36® Health Survey © 1992, 2000 Medical Outcomes Trust and QualityMetric Incorporated. All rights reserved. SF-36® is a registered trademark of Medical Outcomes Trust.
(SF-36® Health Survey Standard, United States (English))

1. I seem to get sick a little easier than other people
   - definitely true
   - mostly true
   - don't know
   - mostly false
   - definitely false

2. I am as healthy as anybody I know
   - definitely true
   - mostly true
   - don't know
   - mostly false
   - definitely false

3. I expect my health to get worse
   - definitely true
   - mostly true
   - don't know
   - mostly false
   - definitely false

4. my health is excellent
   - definitely true
   - mostly true
   - don't know
   - mostly false
   - definitely false
This portion of the survey is called The Ways of Coping.

To respond to the statements in this questionnaire, you must have a specific stressful situation in mind. Take a few moments and think about the most stressful situation that you have experienced in the past week. By "stressful" we mean a situation that was difficult or troubling for you, either because you felt distressed about what happened, or because you had to use considerable effort to deal with the situation. The situation may have involved your family, your job, your friends, or something else important to you. Before responding to the statements, think about the details of this stressful situation, such as where it happened, who was involved, how you acted, and why it was important to you. While you may still be involved in the situation, or it could have already happened, it should be the most stressful situation that you experienced during the week.

As you respond to each statements, please keep this stressful situation in mind.

Read each statement carefully marking to what extent you used it in the situation.

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<table>
<thead>
<tr>
<th>Statement</th>
<th>Options</th>
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<tbody>
<tr>
<td>1. I just concentrated on what I had to do next- the next step</td>
<td>does not apply or not used, used somewhat, used quite a bit, used a great deal</td>
</tr>
<tr>
<td>2. I tried to analyze the problem in order to understand it better</td>
<td>does not apply or not used, used somewhat, used quite a bit, used a great deal</td>
</tr>
<tr>
<td>3. I turned to work or other activity to take my mind off things</td>
<td>does not apply or not used, used somewhat, used quite a bit, used a great deal</td>
</tr>
</tbody>
</table>
Hi Sandra:

You have my permission to use the Nursing Stress Scale for your research.

Good luck,

Pam Toft

Pamela Toft, Ph.D.
Vice President
Walker Information
(317) 843.6581
ptoft@walkeinfo.com

RE: Permission to use the Nursing Stress Scale
Hi Sandra:
You have my permission to make the necessary modifications.
Regards,
Pamela Toft, PhD.
Hi Sandra:
You have my permission to make the necessary modifications.
Regards,
Pamela Toft, PhD.

From: Sandra Morales Foster [mailto:sdfoster@uab.edu]
Sent: Tuesday, July 06, 2010 6:50 PM
To: Toft, Pam
Subject: RE: Permission to use the Nursing Stress Scale

Dr. Toft,
Again thank you for permission to use the NSS. I submitted to IRB of University of Alabama at Birmingham. They are requesting I modify the NSS to pertain specifically to those working in the veterinary field therefore I am requesting your permission to modify the NSS.
Thank you for consideration in this matter,
Sandra

From: Toft, Pam [PToft@walkerinfo.com]
Sent: Thursday, June 03, 2010 11:52 AM
To: Sandra Morales Foster
Subject: Permission to use the Nursing Stress Scale

Hi Sandra:
You have my permission to use the Nursing Stress Scale for your research.
Good luck,
Pam Toft
Pamela Toft, Ph.D.
Vice President
Walker Information
(317) 843.8581
ptoft@walkerinfo.com
NON-COMMERCIAL LICENSE AGREEMENT
Office of Grants and Scholarly Research (OGSR)

License Number: CT127453/OP008832
Effective Date: July 26, 2010
Licensee Name: Sandra Foster
Licensee Address: University of Alabama at Birmingham
Div of Clinical Rheumatology, FOT 840
Sandra Foster
510 20th Street South
Birmingham, AL 35294 USA

Requested Administrations: 130
Approved Use: Non-commercial academic research - unfunded - Occupational Stress in Veterinary Support Staff

Term: Beginning on July 30, 2010 and ending on July 29, 2011
Licensed Surveys: As indicated in Appendix B attached
Royalty Fee: None, because this License is granted in support of the non-commercial Approved Use below

Administrative Fee: $100.00

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University of Alabama at Birmingham
Div of Clinical Rheumatology, FOT 840
Sandra Foster
510 20th Street South
Birmingham, AL 35294 USA

Signature:
Name:
Title:

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APPENDIX A

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Notices, copies of notices or other communications shall be sent to a party at the address set forth on the first page of this Agreement. All notices shall be effective upon delivery of the notice at such address.

Any waiver of any breach or default under this Agreement must be in writing and shall not be deemed a waiver of any other or subsequent breach or waiver. Failure to delay by either party to enforce compliance with any term or condition of this Agreement shall not constitute a waiver of such term or condition.

If any provision is this Agreement is determined to be invalid or unenforceable, the remaining provisions of this Agreement shall not be affected thereby and shall be binding upon the parties hereto, and shall be enforceable, as though the invalid or unenforceable provision were not contained herein.

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This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall be deemed the same agreement.

* * *

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Licensed Surveys and Approved Languages

SF-36v2® Health Survey – Standard Recall
US - English

**NO formatting or editing changes to the survey: (Very Important - Please Read)**

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APPENDIX C

Letters of Support
July 21, 2010

Sandra Morales Foster
University of Alabama at Birmingham
RPHD 542D 1530 #rd Ave S.
Birmingham, Alabama 35294

Subject: Permission to use contact information for AVTA members in a research study on Occupational Stress in Veterinary Support Staff

The Alabama Veterinary Technician Association supports research in our profession. We will provide membership contact information to include e-mail addresses and demographic information such as city or county of residence as well as city or county of practice of employment. Our association whole heartedly supports Sandra’s research and our members are happy to participate in any way that benefits the profession.

Sincerely,

[Signature]
Jennifer Crawford, LVT, VTS
President, Alabama Veterinary Technician Association
July 21, 2010

Subject: Permission for Pilot Study on Occupational Stress in Veterinary Support Staff

Dear [Recipient],

Thank you for allowing us to administer a pilot survey to your veterinary support staff. We hope to administer the survey in August. The surveys will be available online. We will collaborate with your office to set a date to make the survey available to your employees.

Thank you again, for this opportunity to collect data on the occupational stress of veterinary support staff.

Sincerely,

Sandra Morales Foster, DrPH Student
University of Alabama at Birmingham

Permission
University of Alabama at Birmingham has my permission to conduct a survey on occupational stress in veterinary support staff in my veterinary hospital in Birmingham, Alabama. I understand that the name of the practice will be not published.