

Veterinary Physiotherapy - A Literature Review

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ABSTRACT

Background: Veterinary physiotherapy includes the assessment and treatment of the musculoskeletal and neurological conditions. It incorporates the analysis of the neuro-muscular system and anatomy to find the accurate problems. Physiotherapy has long been used in human medicine with vast amounts of research published as to its benefits. However, the use of physiotherapy in veterinary practice is a relatively new concept and the evidence base for such treatments is in its infancy. Also there is lack of awareness on veterinary physiotherapy hence this review of literature on veterinary physiotherapy is done with 32 published articles.

Objective: The aim of the study is to find the prevalence of need for veterinary physiotherapy among the available literature globally.

Methodology: Study Type: Non-experimental
Study Duration: 4 weeks **Study Setting:** SRM medical college hospital and research centre, Kattankulathur. **Procedure:** 24 veterinary Physiotherapy published articles from AVMA, NCBI-Pubmed, Science Direct and Elsevier will be reviewed and it will be analysed and interpreted.

Result and Conclusion: will be revealed after the completion of the full study.

Keywords: Veterinary, Physiotherapy, Management.

INTRODUCTION

• According to WHO "Physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with

injuries, diseases and other impairments"

- Veterinary physiotherapy includes the assessment and treatment of the musculoskeletal and neurological conditions. It incorporates the analysis of the neuro-muscular system and anatomy to find the accurate problems¹
- For the past 25 years, the Veterinary physiotherapy has been recognized, and has an vital role along with veterinary medicine in the treatment of large and small animals.³
- Though Physiotherapy plays a major role in Human medicine it has not been adopted in the veterinary sector. McGowan and Stubbs-2007, considered the animal physiotherapy as one among the sub divisions of physiotherapy.⁷
- Treatment programs are particularly designed to meet the individual needs and reverse these harmful efforts, treating the soft tissue injuries, and also to Re-train new efficient movements. Treatment may include pain relieving techniques, soft tissue and joint mobilisations, exercise protocols, electrotherapy modalities, and home programs.
- Mark Epstein et al concluded, In Veterinary medicine pain management is important which reduces disease morbidity and improves quality of life by facilitating recovery and which also develops relationship between Clients, veterinarian and animals¹¹
- Millis and others 1997, Marsolais and others 2002, Monk and others 2006 says the research of animal physiotherapy is

at its beginning which includes various techniques done on human has the same effect on animals and the same has been proven by few preliminary studies by giving good results¹⁴. Physical Modalities which are used are as follows:

- i. Decrease in pain
- ii. Increase and maintain the muscle strength
- iii. Promote the healing process
- iv. Increase cardiovascular fitness Level
- v. Rehabilitate the normal movement patterns

There is a growing interest in the role of animal physiotherapy, and a number of human physiotherapists have undertaken specialist training in the treatment of animals and qualified as animal or veterinary physiotherapists. So, of the 24 published articles in this review aiming to study the effectiveness of veterinary physiotherapy to show the prevalence, different kinds of treatments, assessment and outcomes of veterinary physiotherapy and also the scope of veterinary physiotherapy among the Physiotherapist.

Aim of the Study

The aim of this study is to find the prevalence and need for Veterinary Physiotherapy for Indian population in near future.

Need for the Study

Physiotherapy has long been used in human medicine with vast amounts of research published as to its benefits. However, the use of physiotherapy in veterinary practice is a relatively new concept and the evidence base for such treatments is in its infancy. Also there is lack of awareness on veterinary physiotherapy in India. Hence this review of

literature on veterinary physiotherapy is done

METHODOLOGY

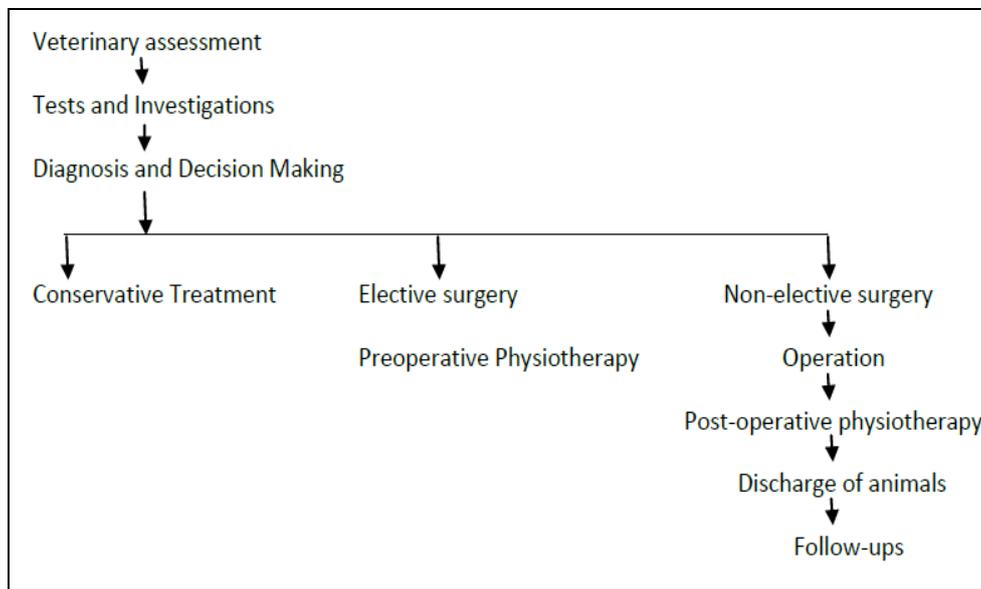
- **Study Design** : Non-Experimental study
- **Study Type** : Review of Literature
- **Number of Articles:** 24
- **Study Duration** : 4 weeks
- **Study Setting** : SRM medical college hospital and research centre, Kattankulathur.

Procedure

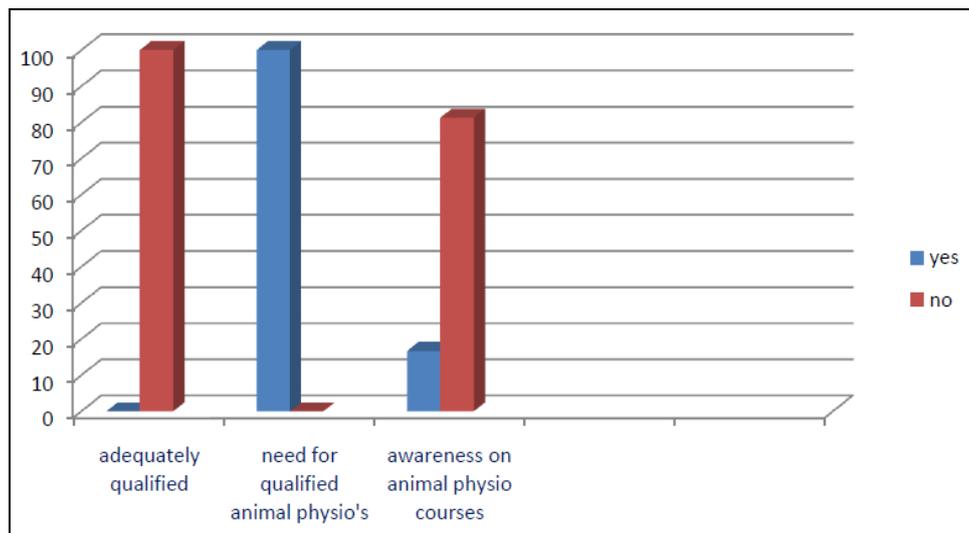
- The aim of the study is to find the veterinary articles in physiotherapy journals & articles and to find the scope of veterinary physiotherapy in future. The data base searched from the articles & journals are PubMed, science Direct, ELSEVIER, BMJ JOURNALS, Veterinary nursing journals. In that 24 articles from 2004 to 2018 related to veterinary physiotherapy was found which was published in various countries like UK, Germany, Switzerland, Turkey, Ireland, USA, Canada, Brazil, SOUTH AFRICA and Thailand.
- In this study random articles are selected, in which animals taken are Equine (horse), canine(dogs), Feline (Cat) and other pet animals & physiotherapy treatment protocol are like laser therapy, UST, IFT, Hydrotherapy, Stretching, Massage, Soft tissue Mobilisation and Hydrotherapy. The common conditions treated in the taken articles are mainly Various spinal and back pathologies causing movement disjunctions, Muscle strains like back and neck and SI joint, Tendon injuries, Ligament sprains, Acute injuries

S.No	Conditions	Animals	Interventions	Duration	Outcome
1.	Osteotomy	Canine	Post-operative on limb function	3times/week for 6 weeks	Extension and flexion ROMs were significantly the physiotherapy group
2	Osteoarthritis-	Canine	Assessment of veterinary practitioner in Canine with OA	12 Weeks	There is a negative correlation between the practitioners' opinions and frequency of structure modifying osteoarthritis drugs.
3	Animal Rehabilitation	General pet animals	Veterinary Physiotherapy awareness	8 Weeks	A specialization in Post-Graduate of animal physiotherapy can bring an awareness among the public by showcasing its importance to animals.
4	Overweight with OA	Canine	Weight loss and diet program with Physical Therapy	6 Months	Caloric restriction along with physical therapy exercises can improve the mobility and reduce weight in overweight dogs.
5	AAFP	General pet animals	Pain Management	8 weeks	pain management is important which reduces disease morbidity and improves quality of life by facilitating recovery and which also develops relationship between Clients, veterinarian and animals.
6	Musculoskeletal pain	Equine	Acupuncture, massage & physical therapy	4weeks	Positive opinion of CAVM. Effective for musculoskeletal pain.
7	Injury of the cranial cruciate ligament	Canine	Therapeutic treatment in postoperative periods; cryotherapy, passive joint movement, neuromuscular electrical stimulation, hydrotherapy & exercises	3 months	The dogs show better results on functional gait recovery immediately after the physical therapy following surgery for CCL Rupture.
8	Rupture Cranial cruciate ligament	Canine	Postoperative physiotherapy like cryotherapy, massage & therapeutic exercise.	12 weeks	No deleterious effect of physiotherapy has been observed.
9	OA, CCL, fracture, spinal surgery, joint arthroplasty & many others disease or injuries.	Canine	Physical rehabilitation	3 months	Healing Increases progressively & tissue strength increases.
10	Cartilage, muscle, tendon, ligaments & bone undergo atrophy with decrease limb use.	Canine & others animal	Physical therapy, therapeutic modalities & rehabilitation	18 weeks	The life span of animal increases by undergoing intensive physical therapy on comparing with the animals receiving no physiotherapy.
11	Orthopaedic & neurological conditions.	Canine	Hydrotherapy	2 Months	Hydrotherapy increases range of limb movement and also reduction in lameness
12	Obesity with Osteoarthritis	Canine	caloric restriction and physiotherapy exercises	6 months	Caloric restriction along with physical therapy exercises can improve the mobility and reduce weight in overweight dogs and enhance quality of life.
13	Spinal cord injury after hemi laminectomy & autologous stem cell transplantation	Cat	Neurofunctional rehabilitation & functional electrical stimulation	2hours twice a day for 3 months	Significant functional clinical improvement in cats spinal cord lesion treated with stem cell application followed by physiotherapy.
14	Osteoarthritis	Canine	Swimming	2-day period for 8weeks	Swimming over 2day period, 8 weeks continually can improve the function of OA joints.
15	Orthopaedic & neurological conditions	Canine	Hydrotherapy, swimming, physical therapy & rehabilitation	3 months	Hydrotherapy , swimming, physical therapy & rehabilitation are effective for these conditions
16	Degenerative myelopathy	Canine	Physical therapy like active & passive exercise with hydrotherapy & massage	2times/day 2 months	Daily physiotherapy increases the life span in dogs with degenerative myelopathy.
17	Knee cartilage atrophy	Canine	Running & vigorous exercise	3 weeks	After treatment articular cartilage appeared grossly normal & treatment was effective.
18	Musculoskeletal & spinal disease	Small animals	Rehabilitation	6months	Exercises & practices that encompass rehabilitation in veterinary is constantly expending & is very effective.

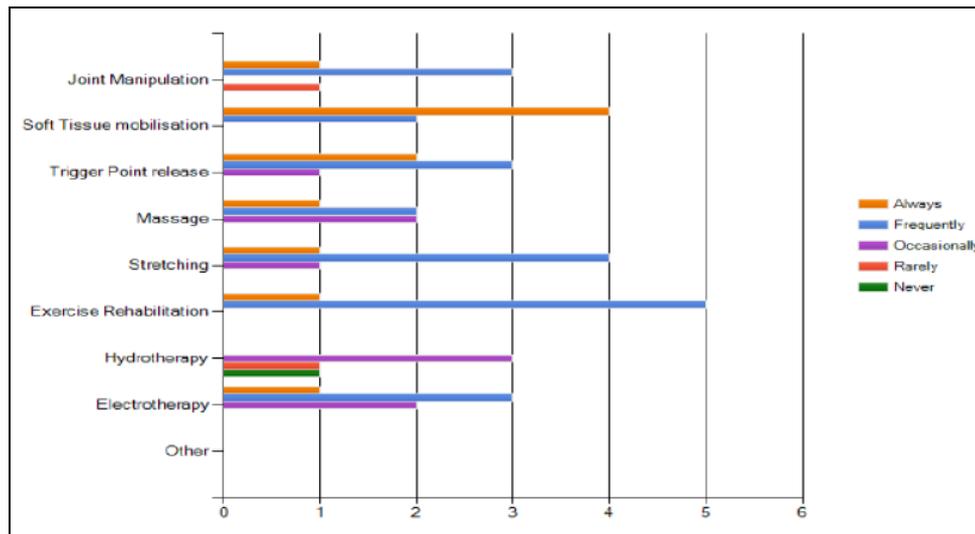
Table continued.....					
19	Any conditions like disease or injuries	Canine	Underwater treadmill	2-3 days/week	This paper is lacking in the area of water exercising and hence needed to be completely evaluated with the controlled study.
20	Pulmonary disease	Canine	6minute walk test	6minutes	The 6MWT has major impact in identifying the difference between the dogs with pulmonary disease and a healthy dog.
21	Pain & lameness	General Pet animals	Prolotherapy	3-4 weeks	Prolotherapy helps in reducing pain and lameness.
22	Osteoarthritis	General Pet animals	Physical therapy with TENS, UST & acupuncture	4 weeks	Effective treatment for OA
23	Tibial plateau levelling osteotomy	Canine	Cold compression therapy	24hours after TPLO	No complication were observed, & all dogs tolerated CCT. CCT decreased sign of pain, swelling & lameness.
24	TPLO	Canine	Low level laser therapy	2-4weeks	Results shows that LLLT protocol had no beneficial effects on sign of pain or pelvic limb functions.



Flowchart 1: Showing the Steps Involved in Veterinary Physiotherapy Treatment



Graph 1: Showing the Views of Physiotherapists on Veterinary Physiotherapy



Graph 2: Showing the Frequency of Treatment Techniques in Practice

Table 1: Showing Common Injuries and Frequency

Injury Or Conditions	Frequency
1. Various spinal and back pathologies causing movement disjunctions.	27.3%
2. Muscle strains (back neck) and SI joint.	22.7%
3. Tendon injuries	18.2%
4. Ligament sprains	9.1%
5. Performance issues	9.1%
6. Acute injuries	9.1%

DISCUSSION

Veterinary Physiotherapy (V.P) is an developing profession with a physiotherapists who are using their skills on animals.

Animals most commonly treated by physiotherapists are dogs, cats, horses and birds (Mackintosh and Mc Namara-1993). In some cases physiotherapists may also treat elephants, lions, rabbits, baby rhino, sheep etc (Dunlop et al-1970, Mackintosh et al-1994).

Knowless and Mackintosh (1994), Lack of fitness and conformation are the two predominant factors which cause injuries in animals. Owner errors in dogs, Behaviour patterns, rider errors in horses are also the common results for injuries in animals.

On reviewing these articles, common conditions include the following in animals:

- **Horses:** Tendon and ligament damage, muscular related problems like tears and atrophies, degenerative arthritis, conditions like splints, painful shins,

fractures, contractures, bursitis, (Bromiley, 1989).

- **Dogs:** Trauma (Tendon and ligament), back problems, muscular related problem osteoarthritis, disc and soft tissue lesions, hip dysplasia, rheumatic condition, (Steiss, 2002).
- In 2016, an average population of pet is found to be over 15 Million in India and pets adopted each year in India is 600,000. India has the fastest growing pet market in the world according to Euromonitor International. But in India there is no such articles were published on V.P till date.
- According to Naidoo N1 et al, There is a lack of awareness amongst physiotherapists and veterinary surgeons in the field of V.P and hence due to lack of qualification in animal physiotherapy field among physiotherapist hindering the animal physiotherapy as a specialist field.
- A review of these databases from the 24 articles reveal that though animal physiotherapy is increasing in popularity globally, there is no such education structure for veterinary physiotherapy. None of the study has been undertaken in India investigating the awareness on animal physiotherapy. So this review of literature study may create an impact over the physiotherapist in India to bring veterinary physiotherapy practice

CONCLUSION

In India based upon this articles & data there is scope & need for veterinary physiotherapy treatment. Based upon this literature review, veterinary physiotherapy is going to become a lucrative and needy health care service in future.

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