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Harm Reduction and Animal Welfare in the Use of Pet Facilitated Therapy (PFT) from one Health Perspective

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Abstract **Original Research Article**

"One Health" approach includes policies and programmes which aims to improve public health and consider the overall welfare of animal, human and environment. Pet facilitated therapy (PFT) comprises the use of animals as part of complementary and alternative therapy. Thus, the concept of "One Health" should be reflected in PFT in order to achieve the wellbeing of humans, animals, and environment. While the use of animals for human wellbeing, the risks involved from the animal and their welfare should be considered. Thus, this paper aims to explore the harm reductions, and animal welfare in the use of PFT from one health approach. Analytical literature review was used as a methodology for this study and the findings are categorized into four themes such as (i) the types of animal used in PFT, (ii) the potential benefits of PFT for human wellbeing (iii) environmental concern and harm reduction, and (iv) animal welfare in PFT. It is observed that dogs are used as the majority pet in PFT, and other different species such as cat, dolphin, horse, donkey, farm animals, bird, exotic and aquatic animals are also used. The potential benefits of PFT have been highlighted in people with disabilities, physical, mental and neurological disorders, elderly with dementia and Alzheimer, and children with special needs, and juvenile adolescents. Under environmental concern and risk reduction in PFT, the possible zoonoses are identified and presented. Animal welfare is considered to have mutual benefits for both parties involved in PFT. This paper serves as a source of public awareness on PFT and recommended to use it in the area of pediatric, palliative, juvenile and geriatric care in addition to conventional treatment after carefully removing or reducing its limitations.

Keywords: One Health approach, Pet Facilitated Therapy, Complementary and alternative Medicine, Harm reduction, Animal welfare.

INTRODUCTION

Along the history beginning from Stone Age to modern age, animals were kept by people for a variety of purposes. The habit of keeping animals as companion has been maintaining among people in rural area. Moreover, possessing animals had been developed from the companion to the pet animals and they are trained to be involved in the form of pet facilitated therapy (PFT). Many studies have been conducted in the last few years regards to PFT, but the overall usage of it, the limitations, and consideration for potential risks involved need to be highlighted for more effective usage of the therapy. Thus, this study intends to seek the usage of PFT as an alternative and complementary medicine, its benefits, and the possible strategies for harm reduction and animal welfare.

In addition to this, the concept of One Health rooted in nineteenth century comparative medicine to advance human medicine [1] was reflected in this study. One Medicine is considered as 'the close systematic interaction of humans and animals for nutrition, livelihood and health' and later it evolved into One Health, integrating human medicine, veterinary medicine, and environmental sciences. Thus, the "One Health" approach gives a value of interdisciplinary collaboration for reducing threats in human-animal-environment interface among the veterinary and medical profession, wildlife specialists and environmentalists [2].

As per "One Health" concept, the human–animal bond is a mutually beneficial and dynamic relationship between people and animals that is essential to the health and wellbeing of both [2]. The

unique dynamic interaction between the humans, animals, and pathogens shares the same environment, [3] Thus, the control of zoonoses and animal welfare in PFT should be considered under the category of the "One Health" approach since it is recommended as part of the complementary and alternative therapy to promote health and well-being of people in the society.

However, the potential risks and benefits of PFT must be thoroughly examined to reduce the harm involved from utilizing animals and promote the maximum effectiveness of it. Recent and on-going threats have shown a critical need for the health workers to manage and reduce diseases that cross human, animal, and environmental health sectors [5]. Thus, this paper identifies and discusses the potential harmful diseases that can be involved from the use of animals in PFT and strategies to control and reduce these risks.

In this article, the terminologies such as animal assisted therapy (AAT), animal assisted activity (AAA), animal assisted intervention (AAI), and animal assisted counseling (AAC), and animal assisted program (AAP), animal assisted psychotherapy (AAPT) are referred to as synonymous term with PFT. Moreover, the term PFT is generally applied for the use of pet animals regardless of the different species involved such as dog or canine assisted therapy (DAT or CAT), cat or feline assisted therapy (CAT or FAT), horse or equine assisted therapy (HAT or EAT), dolphin assisted therapy (DAT). In addition, other animal species such as mini-donkey, birds, aquatic and farm animals are also used as PFT.

METHODOLOGY

This study uses analytical literature review as a methodology and attempts to explore the previous studies conducted in the area of PFT. Sources of data include Google Scholars, Scopus through EBSCO, Research Gate available from IIUM online database and these are managed in Mendeley. The key word such as pet facilitated therapy, the potential benefits of PFT, zoonosis from pet animals, One Health Medicine are typed and searched. After identifying the related literature sources from articles, journals, thesis report and guidelines, 112 openly accessible articles published between 2005 to 2019 are chosen and studied.

FINDINGS AND DISCUSSIONS

From the analysis of the chosen articles, the four themes are identified namely; the types of animal used in PFT, the potential benefits of PFT for human wellbeing, environmental concern and risk reduction, and animal welfare in PFT are developed and presented as follows.

TYPES OF ANIMALS USED IN PFT

It is noted that majority animal used in PFT @ AAT @ AAI are dogs and other different species such as cat, dolphin, horse, donkey, farm animals, bird, exotic and aquatic animals are also used. The following table (1) illustrated the type of animal species used and the numbers of articles based on the years of publications from (2005-2009; 2010-2014; 2015-2019).

Table-1: Animal species used in PFT and the numbers of articles based on year of publication

Specie in PFT	No. of Studies	Numbers of PFT Studies [with Ref:] 2000-2019		
		2005-2009	2010-2014	2015-2019
Dog/Canine	23	5 [6-10],	11[11-19]	7[20-26]
Dolphin/Aquatic	4	1 [27]	3 [28-30]	-
Horse/Equine	7	-	4 [31-34]	3 [35-37]
Farm Animal	2	1 [38]	1 [39]	-
Feline (Cat)	1	-	-	1 [40]
Other species	3	1 [41] Aquariums	1 [42] cage-birds	1 [43] Donkey
Unspecified/ mixed species	64	14 [44-57]	23 [58-80]	27 [81-107]
Total No. of studies	104	22	43	39

Potential benefits of pft for human wellbeing

Human wellbeing includes achieving maximum health in physical, mental, social and spiritual aspects; thus, holistic nursing care includes consideration for all these perspectives. Therefore, there is a need for theoretically based, empirically supported nursing interventions to create a therapeutic and healing environment that decrease stress and improve patients' experiences. There are the instances showing that after a pet therapy intervention, patients had significant decreases in pain, respiratory rate and negative mood state and a significant increase in perceived energy level compared to the baseline data [53].

It is also noted that Pet therapy is a low-tech, low-cost therapy and was meaningful to hospitalized patients [56]. Thus, these quantitative and qualitative findings provided that PFT support not only physical but also for decreased tension/anxiety and fatigue/inertia and improved overall mood and wellbeing.

The studies have been conducted to highlight the possible benefits and potential contributions of PFT in; people with disabilities [105], mental and/or psychological disorders [106], elderly people with dementia and Alzheimer [104], children with autism spectrum disorders [103], juvenile adolescents with

drug abuse, substance misuse and over stress [107], and teaching and education of children [102].

Many studies recommended PFT as part of complementary and alternative therapies and the potential positive effects of PFT are identified and presented as follows.

Neurological Disorders: Alzheimer's disease [19, 41, 87, 90]; dementia [8, 24, 33, 41, 46, 69, 88, 95]; cerebral palsy [21]; children movement disorder [44], autism spectrum disorder [11, 12, 13, 22, 23, 30, 36, 103].

Mental Disorders/ Psychiatric Problems: Mental disorder [106], Mood disorder [64]; emotional and behavioral disorder [18]; traumatic stress disorder [16, 26]; depression [10, 37, 39, 50, 79, 90]; loneliness [75, 80]; anxiety [10, 37]; psychological health [35, 85].

Physical Disabilities and behavior abnormalities: Disabilities and rehabilitation [18, 21, 35, 105]; substance misuse [20], movement disorder [44], chronic fatigue syndrome [57]; substance misuse [20].

Other Conditions: Physiological & psychosocial oncological patients [97], pain relief [17, 55], chronic condition [68, 81, 84], pediatric care [83, 97], Juvenile and adolescent care [34, 73, 92, 93, 107], palliative care [86, 94], for elderly patients [48, 78, 85, 89, 104], PFT for educational purpose [72, 102].

Environmental concern and harm reduction

The environmental wellbeing is one of the focus under One Health approach and thus, the social and environmental concern of PFT should also be considered [1]. The presence of animals in the educational environment may provide enjoyment and hands-on educational experiences, enhanced psychological wellbeing, and increased empathy and socio-emotional development of the participants [100]. However, the immediate concern of PFT is the possibility of zoonoses which can be transmitted from the animals to human [108] because the various pathogens such as viruses, bacteria, parasites, and fungi could be spread from the common domestic pets, dogs and cats. Thus, the required guidelines for maintaining animal and human health are to be followed when using PFT in order to remove the harms involved. The following table (2) based on the identification from some studies [3, 108, 109] and listed the different types of zoonotic diseases which can be infected either by biting, scratching, direct or indirect contact, airway spread, or ingestions of the infected material from the dogs and cats.

Table-2: Zoonoses which could be infected from Dogs and Cats

No	Disease	Organism	Cat	Dog	Mode of Transmission
1	Arthropods Acariasis (scabies/mange)	*Sarcoptes scabiei var. canis*	Yes	Yes	Direct contact
2	Bartonellosis (e.g., cat-scratch disease)	*Bartonella henselae*	Yes	No	Cat scratch
3	Echinococcosis (Parasitic Zoonoses)	*Echinococcus multilocularis*	Yes	Yes	Ingestion of infected wild rodents
4	Enteric diseases	*Campylobacter* spp. *Escherichia coli* *Salmonella* spp.	Yes	Yes	Ingestion after contact with infected feces
5	Fleas (Arthropods)	*Cetenocephalides canis*	Yes	Yes	Direct exposure to environment shared by cats, dogs and people
6	Giardiasis	*Giardia* spp.	Yes	Yes	Ingestion after contact with infected feces
7	Helminths	A variety of worms (round, tape, hook and heart worms)	Yes	Yes	Ingestion
8	Influenza	Influenza A virus	Yes	Yes	Direct contact with aerosols from infected animals
9	Kennel Cough	Bordetella bronchiseptica	Yes	Yes	By airways of immunocompromised patients
10	Leptospirosis	*Leptospira* spp.	No	Yes	Direct contact with infected urine
11	Methicillin resistant *Staphylococcus aureus* (MRSA)	*Staphylococcus* spp.	Yes	Yes	Direct contact with infected wounds
12	Ocular and visceral larva migrans	*Toxocara* spp.	Yes	Yes	Ingestion after contact with infected feces
13	Vector-Borne Plague	*Yersinia pestis (by fleas)*	Yes	No	Direct contact with secretions or flea transmitted
14	Rabies	Rabies virus	Yes	Yes	Bite
15	Rocky mountain spotted fever	*Rhipicephalus sanguineus*	No	Yes	Direct contact or *tick* transmitted
16	Ringworm	Dermatophytes	Yes	Yes	Direct contact with cutaneous lesions
17	Sporotrichosis (Fungal Zoonoses)	Sporothrix schenckii	Yes	Yes	Direct contact with cutaneous, lymphocutaneous, and pulmonary lesions
18	Toxoplasmosis	*Toxoplasma gondii*	Yes	No	Ingestion after contact with infected feces
19	Tularemia	*Francisella tularensis*	Yes	No	Direct contact with secretions or arthropod transmitted
20	Tuberculosis	Mycobacterium spp.	Yes	Yes	Ingestion

Animal welfare in pft

The use of PFT in people with various disabilities, physical and mental disorder, elderly and children with special needs, and the rehabilitation process of juveniles has been highlighted in the above. According to a One Health framework, PFT was proposed to demonstrate under which circumstances there is no tradeoff of human benefits against animal health and wellbeing and under which circumstances animals could benefit from such interactions with humans [101]. Therefore, health and welfare of the animals should never be neglected while using them as part of therapy for improving human wellbeing.

Moreover, World Organization for Animal Health (OIE) (2018) highlighted "animal welfare that achieving physical and mental needs of animals, their welfare on disease prevention, disease prevention and appropriate veterinary care, shelter, management and nutrition, a stimulating and safe environment, humane handling and humane slaughter or killing" and against any form of animal cruelty" [111].

Moreover, the need for close observation of possible animal abuse by juvenile adolescents is highlighted since the important warning signs of the crimes and cruelty to animals by them are linked with their later abuse to humans [107]. In addition, another paper pointed out the requirement of animal welfare for human well-being both scientific and Islamic perspectives [112].

There are ethical and legal obligations of humans and animal keepers towards the animals they keep and use [110]. Thus, the animals should be handled well, and prevented from any form of abuse, and provided interventions for their best health. It tends to reason that healthy and happy animals could provide more therapeutic effect to human participants of PFT. The welfare of animals should be considered for the mutual benefits of both animal and human involved in PFT.

CONCLUSIONS AND RECOMMENDATIONS

According to One Health approach, three areas of concern; animal, human and environment are to be aware of in using PFT as an alternative and complementary therapy. From the discussions above, it is noted that PFT has the potential benefits in humans with special needs, various disabilities and requirement. However, the use of animal such as species, size, and choice should be catered based on the individual needs and preferences. Moreover, any type of zoonosis and risks involved from animals should be prevented at all possible ways by ensuring vaccination and regular check-up. The animals involved should be well-trained and handled by the expert handlers. The animal welfare is one of the concerns, and they should receive adequate hydration and nutrition, proper handling, and prevent from any form of misuse and abuse since their welfare is also one of the concerns in PFT. In conclusion, this paper able to highlight the potential benefits of PFT, prevention of zoonoses and harm reduction, and animal welfare. However, this paper is based on the literature review and observe the theoretical and empirical evidence of the previous studies only with no control trial methods and more studies with different research approaches are recommended to conduct.

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