

Potential Benefits of Pet-Facilitated Therapy (PFT) in People with Disabilities

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Abstract

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The term disability referred to the impairments, activity limitations and restrictions in participation. People with disabilities need special care with alternative therapy to improve their optimum function, quality of life and reduce burdens of their families and communities. Pet facilitated therapy (PFT) has become popular among researchers and health care professionals from the developed countries and it is considered as an alternative therapy for people with disabilities. However, the awareness and usage of PFT in Malaysia and Asian countries are still very limited. The lack of information about PFT can lead to the lesser opportunities in searching for physical and mental improvements of the children, elderly and people with disabilities. Thus, this study aims to explore the literature work regarding the potential benefits of PFT in the disabilities in order to highlight the awareness about it among health care providers and public. The systematic literature search was used as a methodology, and three themes namely PFT in clients with physical and mental disabilities, PFT in children with autism, PFT in the elderly with disabilities are presented and discussed. The findings revealed the potential benefits and the use of PFT as an alternative and complementary therapy in people with disabilities after carefully removing the potential risk factors of PFT.

Keywords: Children, Elderly, Pet Facilitated Therapy, Autism, Physical and Mental Disabilities.

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INTRODUCTION AND BACKGROUND OF THE STUDY

The term disability is defined as an umbrella term that covers impairments, activity limitations, and participation restrictions [1] in which the impairment means a problem in body function or structure, while an activity limitation defines a difficulty encountered by an individual in executing a task or action, and a participation restriction mentions a problem experienced by an individual in involvement in life situations. Thus, disability can be noted as a complex phenomenon that reflects an interaction between features of a person's body and the society in which he or she lives [1].

Many factors contributed to the causes of disability such as musculoskeletal, mental health and nervous system disorders, cancer, diabetes, heart disease, and stroke. Autism is also counted as one of the causes of disability among children. The aging process is another common reason that contributed to a deterioration in multi-organ and disabilities among the elderly.

Pet Facilitated Therapy (PFT) includes the use of pet animals as a form of therapy for improvement of the client's physical, mental, social, and cognitive functions. Pets are the animals contacted closely with humans and they include cats, dogs, fish, horses, and other species. They are also served as a companion, assistance to the blind, elderly and disabled, and the latest contribution of them is the use of them in therapy for clients with varied symptoms of physical, mental, and social disabilities.

PFT has been accepted and practiced widely in most of the Western countries in their health care related field for the holistic care of clients. Many studies identified the potential benefits of PFT in different health care settings as well as for clients with disabilities. Nonetheless, the incorporating of PFT in the mainstream medicine of Malaysia or other South East Asian countries was very limited. The awareness level of the public and practitioners is very low. Thus, this study aimed to examine the effects of pet therapy in clients with various disabilities, and it is hoped to improve awareness among the public and health care workers about pet therapy. In this study, the

terminologies such as pet therapy, pet facilitated therapy (PFT), pet-assisted therapy (PAT), animal-assisted therapy (AAT), animal-assisted activity (AAA), are used interchangeably since all those serve the similar purpose and meaning.

METHODOLOGY

The systematic literature review method was used as a methodology for this study. The available literature sources related to the use of PFT in physical and mental disabilities are identified from the articles published between 1991-2019. Electronic data search was done primarily by typing the words, PFT “in disabilities”, PFT in “psychiatric disabilities”, “the use of animals in disabilities”. Online databases such as Library research gateway of IIUM, Pubmed, Ovid, Science-direct, SCOPUS, SpringerLink, Sinahl Plus, Medline as well as Mendeley and google scholars are used to explore the related articles. The findings are categorized based on the similar themes, presented and discussed.

FINDINGS AND DISCUSSIONS

The discussions were based on the summarization of the data from the identified articles. The data are categorized and developed into three themes as “pet therapy in clients with physical and mental disabilities”, “pet therapy in autism children”, and “pet therapy in elderly with disabilities”, and presented as follows.

PET THERAPY IN CLIENTS WITH PHYSICAL AND MENTAL DISABILITIES

Mental health disorder is one of the causes contributing to disabilities since it includes symptoms of abnormal thoughts, emotions, behaviors, and relationships with others [2]. Mental health is the key role in describing the conditions of public health and lack of mental health services at the community could lead to unnecessary illness and disabilities. The concept of mental health has been changed nowadays and people consider health as a complete state of physical, social, and mental well-being, and pointed out to be balanced in mind, body, spirit through meaningful life activities [3]. Mental health clients should receive the best possible ways of treatment like other clients with physical problems.

Cho, Norfadzilah & Min [4] concluded in their review paper on PFT and mental health that the three potential effects of PFT are (i) reducing physiological measures of stress, (ii) improving mental well-being, and positive mood, and (iii) providing cost efficiency and effectiveness. They suggested for raising awareness of PFT among the public as well as the nurses and health care professions. After considering their limitations, it is recommended as a complementary therapy for clients with mental health conditions.

In a study of well-being, mood, and anxiety among the university students (n=132), Grajfoner *et al.*, [5] presented a significant improvement in mood, mental well-being and reduction in anxiety in a group with a dog present in dog only group or in group with dog and handler.

Dell and Poole [6] on their observation of the role of the therapy dog on trauma-informed approach in prisoners with intricate mental health issues, mentioned that the results are congruent with the six principles: (i) safety; (ii) trustworthiness and transparency; (iii) peer support and mutual self-help; (iv) collaboration and mutuality; (v) empowerment, voice, and choice; (vi) cultural, historical, and gender issues”.

A study by Elmaci and Cervizci [7] evaluated the effect of dog-assisted therapies among the children with cerebral palsy, physical and mental disabilities that have lesser access to well-being and health-improving services in Turkey. They mentioned that pet therapy provides improvement in the physical functions of these children based on their capabilities and ability to make plans for their goals. In addition, they can cope with their fear, anxiety, and improve social communication skills and thus, pet therapy is suggested as a support to conventional treatment.

Another study by Nepps, Stewart, and Bruckno [8] assessed the psychological and physiological variables in hospitalized patients (n=218) by Animal-Assisted Activity (AAA). The participants’ self-reported ratings indicated that their depression ($P < .0001$), anxiety ($P < .0001$), pain ($P < .0001$), and pulse ($P < .04$), are significantly reduced and their physiological measures of stress such as blood pressure, pulse, and salivary cortisol are improved. Chandramouleeswaran and Russell [2] also suggested the use of PAT as a complementary for conventional medicine for psychosocial interventions of children and adolescents in a mental health setting.

Kruger, Trachtenberg, and Serpell [9] discussed that animals have been used in the socialization process of mental health clients since the time of the late eighteenth century, but their usage is poorly defined in current conditions. They mentioned that pet therapy can provide a variety of benefits to clients after improving their engagement and compliance of therapy, reduce the financial burden and improve quality patient care even though it might not have a direct therapeutic effect. They further suggested considering the culture and individual differences in proving PFT.

Another study by Bizub, Joy, and Davidson [10] conducted on five patients with psychiatric disabilities in a ten-week horseback riding program after providing them skills of basic riding and bonding opportunity with a horse. The psychosocial benefits of

the riders such as self-efficacy and self-esteem are reported after they managed to achieve basic horsemanship. Thus, they recommended PFT as adjunctive therapy for facilitating the recovery process of psychiatric clients.

Numerous studies highlighted the positive effects of PFT for enhancing cardiovascular health, decreasing stress, and depression. Six neurochemicals associated with a decrease in blood pressure are seen in both pets and pet owners [11]. Krause-Parello [12] examined adults (n=33) and identified that biological effects of stress in participants are reduced after interaction with canines. The benefit of PFT was mentioned in the earlier study by Wilson (1991) [13] that interacting with an animal reduces physiological and psychological responses to stress in some individuals. Friedmann *et al.*, [14] proved that pet ownership improved coronary artery disease survival and less likely to die within one year. From all these findings mentioned, it is noted that pet therapy has not only physical benefits but also contribute to mental and psychological well-being of individuals.

PET THERAPY IN CHILDREN WITH AUTISM

Autism Spectrum Disorder (ASD) is one of the conditions that contribute to disabilities in children since it includes a wide range of social, mental, and developmental disorders. Their symptoms might be varied but they generally have common symptoms of difficulties in interaction, communication and the presence of repetitive behaviors. PFT has been increasingly popular and utilized widely nowadays for children with autism especially in the developed countries.

Cho, Norfadzilah, & Min [15] mentioned the beneficial effects of PFT on the physical, mental, and social perspectives of the children with ASD and recommended it as one of the alternative therapies. They presented their findings under themes: “potential benefits of PFT in physical movement; communication, social and language skills; improving positive behaviors and reducing negative behaviors; and reducing stress in children with ASD”.

PFT is also known for providing opportunities for physical movement and exercise of the children. Bass *et al.*, [16] presented the effects of pet therapy as horseback riding promotes body coordination and gross motor development in children with ASD. It was supported by MacDonald *et al.*, [17] study conducted among (14-33 months) young children (n=159) with confirmed ASD that PFT improves their physical movement and skills in motor, social and communication.

Solomon [18] also described that PFT allows children for opportunities to communicate with animals after taking care of them which is otherwise difficult for

them deal with other human beings. They concluded that children can engage in longer activities; improve responses to actions, social competence, and collaborative activities after PFT. Ward *et al.*, [19] also pointed out the significant positive effect of therapeutic riding (TR) on social interaction, sensory processing, and reducing the severity of symptoms in autism children.

Sams, Fortney, and Willenbring [20] conducted on (n=22) children with autism indicated that PFT incorporating with occupation therapy could enhance language, and social interaction of the children. Berry *et al.*, [21] study explored the possible benefits of PFT and presented the improvement of social behaviors and language use through interaction with dogs. Another study by Gabriels *et al.*, [22] conducted in (n=116) participants evaluated that Therapeutic Horseback Riding (THR) improves in their irritability, hyperactivity, social cognition, communication, and language use significantly. Grigore and Rusu [23] discussed that when children with autism are provided therapy dogs together with social story reading, they are more cheerful and playful in the presence of pets. The frequency of their social initiations had increased, and the social prompt needed to receive their responses had decreased.

One study explored the effect of Equine Assisted Therapy (EAT) in children with ASD in which participants are divided into two groups: (n = 15) intervention and (n=13) in control group) by using horses. The findings revealed that PFT can provide an enhancement in their social function, motor abilities, executive functioning, general and mental well-being, self-efficacy, and self-esteem [24].

Moreover, Bass *et al.*, [16] studied with (n=34) autism children mentioned the therapeutic effect of horseback riding to significantly improve their social function, reduce attention, distractibility, and sedentary behaviors. Viau *et al.*, [25] stated that PFT has the benefits of enhancing positive behaviors and reducing negative behaviors in children with autism. In their study, the level of cortisone of children with ASD (n=42) was assessed after providing them with service dogs. They asserted that PFT as the potential behavioral benefits to children since their Cortisol Awakening Response (CAR) is sensitive in the presence of service dogs even though no long-term effect is shown.

Silver *et al.*, [26] indicated that pet therapy improved positive behaviors (smiling and physical contact) and reduced negative behaviors (aggression) in autism children. Another study by O’Haire [27] stated that PFT help improves social interaction, communication skills, reduced problematic behaviors, the severity of autism, and stress. These findings were congruent with Funahashi [28] in which they suggested pet therapy as for creating an environment that

increased smiles and positive feelings in autism children and reduced their negative behaviors.

Based on the findings discussed above, PFT is known to provide opportunities for physical movement and exercise, as well as physical, mental, and social benefits for the children with ASD by improving their language, communication skills, sense of responsibility, and positive behaviors, and reducing stress, and negative behaviors.

Moreover, it is noted from some studies that PFT is not only for children with ASD but also for benefitting their parents or caregivers. Wright *et al.*, [29] study with (n=38 with dogs and n=24 control group) proved that pet therapy reduced stress levels of primary caregivers with ASD significantly. Hall *et al.*, [30] provide similar findings of reducing parental stress as well as inappropriate behaviors in children with autism in their study with (n=22 with dog) and (n=15) control group.

PET THERAPY IN ELDERLY WITH DISABILITIES

With the improvement of medical treatment and the trend of technology, people tend to have a longer life span. The world's elderly population (aged 60 years and above) is expected to grow by about nearly 2 billion in 2050 [31]. Longevity is accompanied by many factors and the complex process of aging such as biologic, psychosocial, cultural, and experiential change [32]. Impairment in physical and cognitive function can affect people's activities of daily living (ADLs). Disabilities are one of the long-term adverse health outcomes of the elderly associated with their frailty or physiological impairment involving multiorgan functions [33].

Regards to the use of PFT in the elderly, a study by Cho, Norfadzilah, and Min [34] in their qualitative study reviewing on 14 articles suggested PFT as the potential benefits to the elderly with cognitive dysfunction. The study by Tournier, Vives, and Postal [35] examine the effectiveness of animal-assisted therapy (AAT) in the elderly (n=11) with dementia. Neuropsychiatric symptoms of the participants were measured by using Neuropsychiatric Inventory (NPI) after their interactions with dogs, and their behaviors were also rated during AAT sessions. The findings indicated the positive results of AAT on total score and caregiver distress score for several neurological symptoms such as “(delusion, depression, disinhibition, euphoria, and aberrant motor activity)” even though they are not statistically significant. Thus, they suggested long term with regular sessions of AAT as an alternative to pharmacological interventions to reduce dementia and neuropsychiatric symptoms of the elderly.

Another study by Ko, Youn, Kim, and Kim [36] examined the effect of pet insects on the psychological health of the elderly after dividing them into two groups; (n=46) a group with insect therapy and health advice and the control group (n=48) who got health advice only. They recommended PFT as a safe and cost-effective method, with a small to medium positive benefits on depression and cognitive function of the elderly.

Swall *et al.*, [37] used a qualitative, phenomenological method to study the elderly (n=9) with dementia with a therapy dog. 3 themes are identified from their interview, and in which 3 subthemes are developed under the theme of “a structural analysis” as: “Being an unintentional listener and using one's skills, being responsive to the emotions of a person with dementia and creating an existence free from illness for the person with dementia”. From the findings, one major theme was concluded as: “Respite from the burden of illness for persons with dementia” since pet therapy could provide caring, a temporary respite from illness, and special relationship between the handler and the clients which contributed to reducing their symptoms and promote well-being. And thus, they recommended PFT to be contributed as a nonpharmacological intervention for the person with dementia.

Another study by Menna *et al.*, [38] examined the efficacy of AAT based on the formal reality orientation therapy (ROT) protocol among the elderly patients (n=50) with Alzheimer under three groups: (i) 20 patients with AAT based on formal (ROT) protocol; (ii) 20 patients exclusively with the ROT; and another (iii) 10 patients (control group) in no stimulations. The results indicated both groups (AAT and ROT) improve in Geriatric Depression Scale (GDS) and mood status, a slight improvement in Mini-Mental State Examination (MMSE). No changes are observed in the control group but the groups with AAT have significant mean scores ($P < 0.001$) compared with the other two groups. Thus, they recommended the potential benefits of PFT interventions based on the formal ROT protocol for the elderly with Alzheimer's.

The findings from Pope, Hunt, and Ellison [39] study also indicated that AAT has a positive effect on socialization behaviors among the elderly with dementia. They examined the effects of AAT on social behaviors and engagement in the elderly with dementia (n=44) in two groups either with animals or human interaction. Both groups showed significant improvement in the social behavioral scores ($p < .001$) but the AAT group with a higher score and lower inappropriate responses (screaming, verbal aggression).

Thodberg *et al.*, [40] conducted a study on the therapeutic effects of dog visits on sleep patterns and the psychiatric well-being of the elderly (n=100) from

the nursing homes in Denmark. During the therapy, they are accompanied by either a dog, a robot seal (PARO), or a soft toy cat. The measurement of sleep pattern found that the sleep duration (min) was increased after the third week of dogs' visits compared to those with robot seal and cat toy ($P=0.01$). However, no effects were found in the sixth week or after the visit period had ended. The study proposed that visit type has no long-term effect on mental state and further studies is recommended to explore the relationship between sleep duration and dog visits.

In the study of Oslen *et al.*, [41] examined the effect of AAA on balance and quality of life among the home-dwelling persons with dementia from 16 day-care centers ($n=42$) as (intervention group) and ($n=38$) for (control group with usual treatment). The findings revealed a significant positive effect of AAA on the balance (BBS scores) with ($p=0.03$), and no effect on the quality of life (QOL). It is highlighted AAA as the possible improvement in clinical implications on the prevention of risk for falls among the elderly. Oslen *et al.*, [42] also examined another study among total 49 participants with dementia: ($n=28$) living at home and attended daycare Center and ($n=21$) nursing home residents. It is mentioned that AAA as a suitable health-promoting intervention for elderly dementia clients after carefully considered degree of dementia as well as their needs and interests.

The study [43] on the effects of the aquarium on resident behavior and staff job satisfaction were examined among (71) patients and 71 professional staff in dementia Units. It is observed the significant behavior improvement of resident in four domains: uncooperative, irrational, sleep, and inappropriate behaviors and the staff's satisfaction score with $p < .001$ respectively, improve in the mean score of pre and posttest from 149.4 to 157.9, and reduce in mean score of disruptive behavior from 67.2 to 58.2. Thus, the use of aquariums is suggested for the client with dementia to improve their conditions and reduce symptoms.

Wehofer *et al.*, [44] study conducted on Equine Assisted Activities and Therapies (EAAT) in older adults suggested that EAAT help the participants in improving their participation, balance, postural stability, head and trunk control, and reducing back pain, fear of fall, and the ability to recover self after a fall. Dabelko-Schoeny *et al.*, [45] also examined "the feasibility and effectiveness of the equine-assisted intervention (EAI)" by using horses with ($n=16$) participants from the adult daycare center. The findings revealed the improvement in physical and behavioral conditions, reducing behavioral problems and increasing cortisol with higher Mini-Mental State Examination scores of the participants after 4 weeks of intervention, and it is suggested as feasible and possible benefits for the elderly with dementia and Alzheimer.

Vrbana *et al.*, [46] studied ($n=21$) geriatric nursing home residents revealed that the dog ownership reduces the perception of loneliness ($p=0.003$) in the elderly with the significant statement "I lack company" ($p=0.000$). The study also observed that all participants exhibit the expression of joy in dealing, petting, and talking with the dogs even though their responses might be different. AAT is suggested as an effective and low-cost method that can improve the emotional and psychological well-being of the elderly. It was supported by Stanley *et al.*, [47] in which the association of pet ownership and loneliness among older adults ($n=830$) were explored. Pet owners reported 36% lesser in loneliness ($p < .001$) and pet therapy is indicated for offering benefits of well-being, reducing feelings of loneliness and its consequences.

Alzheimer and dementia are the common disorders seen in the elderly and contributed to the causes of their disability. From the numerous studies presented above, it is observed that a variety of animals are used for pet therapy and PFT has the positive effects to the elderly with disability. It helps to improve their physical and cognitive functions, mental state and neurological symptoms, control balance and prevent risk for falls, reduce behavioral problems and inappropriate behaviors. Moreover, PFT is suggested as a form of therapy which could provide caring, a temporary respite from illness, and thus, it helps to reduce their negative symptoms and promote well-being of the elderly.

LIMITATIONS AND RECOMMENDATIONS

It is noted that pet therapy has numerous potential effects for clients with disabilities as per the discussions above. Nonetheless, most of the studies pointed out the use of PFT as a complementary, adjuvant, or additional treatment to mainstream or conventional medicine. Moreover, the choice of animal or animal preferences may be varied depends on the individual person, belief and culture. Some are not compatible with animals and have allergic reactions after contacting with them. In addition, the risks involved from animals such as zoonosis, the bite, and aggression, unhygienic practices should be carefully examined and prevented. The need for cultural considerations, the type of animals used, and the skills of the practitioners are also a concern. Thus, more research with different methodologies and settings are recommended in the area of PFT and public health, especially in Southeast Asian countries.

CONCLUSIONS

From all the reasons mentioned above, the potential effect of PFT has been shown in clients with various physical and mental disabilities. The best use of PFT is recommended after reducing the risks of animals involved to obtain the optimum benefit of it. PFT provides positive emotional effects, holistic well-being

of the clients with mental health disorders after reducing their anxiety, depression and violent behavior. It decreased physiological measures of stress such as pain, blood pressure, pulse, and salivary cortisol. It improved positive behaviors in children with autism and reduced negative behaviors. PFT helps decrease the stress among caregivers and parents of the children with autism. It is also beneficial in the elderly with chronic disabilities and reduces cost, hospital stay, and burdens of the family by improving their physical, mental, cognitive and neurological functions and enhancing their quality of life and wellbeing. Thus, PFT is suggested for complementary or alternative therapy for clients with various disabilities in addition to their conventional treatment. It is hoped that this paper serves as one of the sources to improve awareness of PFT among the public and health care providers and the integration of it in caring client with disabilities.

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