THE USE OF VARIOUS ANIMAL SPECIES FOR THERAPEUTIC PURPOSES IN POLAND: CURRENT PERSPECTIVES

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ABSTRACT

Animal-assisted therapy involves many species of domesticated animals (e.g. dog, cat, horse) as well as more exotic species (e.g. dolphin) or small mammals (e.g. guinea pig) and is used for improvement in physical and mental functioning of both, children and adults. The aim of this review is to characterize the types of animal-assisted therapy based on the use of various animal species: the dog, the cat, the horse, the donkey, the alpaca, and the bottlenose dolphin. This review also provides some information about the usefulness of other animal species and categories such as small mammals (“pocket pets”), birds, fish, and farm animals. Contact with the animal might promote the development of personality, education, and rehabilitation and improves the quality of life of pet owners. The animal might be also a great motivator for undertaking new activities. A properly selected and trained dog, horse, or alpaca is a great support in therapist work and helps to establish an appropriate human-animal relationship.

Key words: animal-assisted therapy, contact with animals, therapeutic animal

INTRODUCTION

Animals were appreciated and used for improvement in human physical and mental functioning as early as in ancient times [Serpell 2010, Jagielski et al. 2014]. Over the years, the therapeutic use of animals has gained greater importance and has focused on the achievement of specific effects [Nimer and Lundahl 2007, Jagielski et al. 2014]. At present, animal-assisted therapy is widely applied to improve patients’ health [Cirulli et al. 2011, Budzińska-Wrzesień et al. 2012]. Contact with animals might exert a positive effect on the mental welfare and quality of life of humans, who have infrequent contact with nature in today’s world [Gardiánová and Hejrová 2015]. Animals have a natural tendency to bond with a human [Nimer and Lundahl 2007]. Individuals suitable for companion and therapeutic purposes are often highly social animals, and if less social individuals are used, they can still fulfill their needs for attention of human partners [Odendaal 2000]. Studies of positive interaction among humans and animals stated that the dogs experience the same physiological effects (e.g. increase of beta-endorphin, oxytocin, prolactin) as the patients [Odendaal 2000, Odendaal and Lehmann 2000]. This is why it can be of importance from an animal well-being point of view as the animals used in animal-assisted therapy can experience the same benefits from such interactions as people. The aim of this review is to characterize the types of animal-assisted therapy based on the use of various species: the dog (Canis familiaris), the cat (Felis catus), the horse (Equus caballus), the donkey (Equus asinus), the alpaca (Vicugna pacos), and the bottlenose dolphin (Tursiops truncatus). This review also provides some information about the usefulness of other animal species and categories such as small mammals (“pocket pets”), birds, fish, and farm animals.

Pet partners (formerly known as the Delta Society) is the largest nonprofit organization setting standards of animal-assisted therapy worldwide [Pet Partners 2020]. The organization has specified three types of animal work in the field of animal-assisted therapy, which altogether are defined as AAI (Animal Assisted Intervention). Table 1 presents the characteristics of the types of AAI activities [Pet Partners 2020]. Table 2 shows animal species mainly used in various types
of therapeutic interventions [Cieśla 2007, Pluta 2008, Budzińska-Wrzesień et al. 2012, Cieśla and Mazan 2015, Chuprikova and Dąbrowska 2016, Kolarczyk et al. 2016, PTHip 2020, Pet Partners 2020]. Other species such as small mammals (“pocket pets”), farm animals or aquarium fish can be also used in animal-assisted therapy but information on their impact has come from few studies [Edwards and Beck 2002, Krsková et al. 2010, Berget and Braastad 2011, Gardiánová and Hejrová 2015, Gut et al. 2018].

CANINE-ASSISTED THERAPY

Canine-assisted therapy (also referred to as dog-assisted therapy or kynotherapy) is undoubtedly the most widespread and most common animal-assisted therapy [Lundqvist et al. 2017, Charry-Sánchez et al. 2018]. The Polish Society of Kynotherapy (PTK) defines canine-assisted therapy as a *method for enhancement of the effectiveness of personality development, education, and rehabilitation, in which a properly selected and trained dog is the motivator and the therapy is provided by a qualified therapist* [PTK 2020]. Kynotherapy was included in Poland in the Register of Professions and Specializations in 2007 [Cieśla and Mazan 2015]. Canine-assisted therapy could have a positive effect on patients’ mood, health, well-being and quality of life, it reduces stress and depression symptoms [Lundqvist et al. 2017].

The dog must be selected and trained to be suitable for the specific form of therapy. It is suggested that the therapeutic dog should originate from a registered kennel, although mixed-breed dogs are allowed to take the examination as well [PTK 2020]. There are many breeds on the list of therapeutic dogs registered in PTK. Retrievers exhibit special predispositions [Budzińska-Wrzesień et al. 2012, Kokocińska 2017]. Aggressive behavior is unacceptable. During the therapeutic dog exam, the animal must demonstrate certain skills acquired during training, e.g., basic obedience commands [Budzińska-Wrzesień et al. 2012]. Proper dog work intensity during AAI is not a threat to an animal welfare (no signs of physiological or behavioral stress were observed) [Palestrini et al. 2017]. However, King et al. [2011] reported stress-associated behavior (such as panting, yawning, lip licking and whining) in dogs just after an AAT sessions.

FELINE-ASSISTED THERAPY

Feline-assisted therapy (also referred to as cat-assisted therapy or felinotherapy) is still not very popular in Poland, but it is an intensively developing form. It finds application in patients for whom hippotherapy or canine-assisted therapy is unattainable for various reasons (e.g. allergies, fear) [Budzińska-Wrzesień et al. 2012, Goleman et al. 2012, Gardiánová and Hejrová 2015]. Felinotherapy is based on contact with the cat, the possibility of stroking and combing the animal [Budzińska-Wrzesień et al. 2012, Tomaszewska et al. 2017], playing and feeding the cat [Goleman et al. 2012]. The presence of a cat that needs care in prisons or nursing homes positively influences human well-being, mitigates the feeling of loneliness, reduces stress, and facilitates the establishment of contact [Goleman et al. 2012, Kokocińska 2017]. Selection of the cat is based on the temperament and character of the animal. The cat should have a positive attitude towards human contact, like stroking, combing, and cuddling [Kokocińska 2017]. During training,
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### Table 2. Animal species used in various types of therapeutic interventions

| Animal species | Types of animal-assisted intervention – Rodzaje działań w zakresie AAI |
|----------------|---------------------------------------------------------------------------------|
| Dog            | PTK (The Polish Society of Kynotherapy) distinguishes three forms of therapeutic interventions with the use of dog assistance: SP (meeting with a dog), EP (education with a dog), and TP (therapy with a dog). Meetings with a dog (SP) bring many benefits to both disabled and non-disabled children. PTK (Polskie Towarzystwo Kynoterapeutyczne) wyróżnia również trzy formy terapii z udziałem psa: SP (spotkania z psem), EP (edukacja z psem) oraz TP (terapia z psem). Swoją charakterystyką bardzo przypominają podział Pet Partners, podany w tabeli 1 (SP do AAA, EP do AAE, TP do AAT). Spotkania z psem (SP) dają wiele korzyści nie tylko dzieciom z niepełnosprawnościami, ale i w normie intelektualnej oraz rozwójowej. |
| Cat            | Felinotherapy can fit in with the Pet Partners standards in the form of AAI or depending on a place of animal residency: cats living in facilities or visiting patients. Felinotherapy is used, inter alia, in nursing homes and prisons to improve the quality of life in people staying there. Felinoterapia może wpisywać się w standardy Pet Partners w formie AAI lub w zależności od miejsca przebywania stałego zwierzęcia: koty rezydujące w ośrodku bądź przyjeżdżające do pacjentów. Felinoterapia znajduje swoje zastosowanie m.in. w ośrodkach opieki czy zakładach karnych, jako możliwość podniesienia jakości życia osób tam przebywających. |
| Horse          | Four types of equine-assisted interventions can be distinguished: a) horseback physiotherapy b) psycho-pedagogical horse riding and vaulting c) equine-assisted activities, based on contact with a horse d) horseback riding (sports and leisure) for disabled people (it is not typical hippotherapy, however, it may be its continuation since they are closely related). Equine-assisted interventions are primarily used for people with motor and intellectual disabilities. Wyróżnić się cztery formy hipoterapii: a) fizjoterapia na koniu b) psychopedagogiczna jazda konna i wołyńka c) terapia poprzez kontakt z koniem d) jazda konna rekreacyjna lub sportowa dla osób niepełnosprawnych (nie jest typową hipoterapią, ale jest z nią ściśle związana i może być jej kontynuacją). Hipoterapia służy przede wszystkim osobom z niepełnosprawnościami ruchowymi i umysłowymi. |
| Donkey         | The use of donkeys is similar to the use of horses in equine-assisted interventions and includes grooming, riding, and interacting with an animal. Only donkey-assisted therapy (onotherapy) may show therapeutic effects similar to those resulting from hippotherapy. It is successfully used for children with motor and intellectual disabilities, as well as for adults. Sposób użytkowania w onoterapii jest bardzo podobny do pracy konia w hipoterapii, czyli kontaktu ze zwierzęciem, pielęgnacji go, jak i jeździe na osie. Tylko w terapii z osłami można uzyskać podobne efekty terapeutyczne, jak w hipoterapii. Onoterapia sprawdza się w terapii dzieci z niepełnosprawnościami ruchowymi i umysłowymi, jak i osób dorosłych. |
| Alpaca         | Alpaca-assisted interventions can fit in Pet Partners standards (AAI - Table 1). They can take the form of meetings (AAA), education (AAE) or therapy with alpaca (AAT). While AAA is the most frequently used form in Poland, alpaca assisted therapy is quite rare. Alpaca-assisted interventions are effective for healthy people and with motor or intellectual disabilities. Rodzaje alpakoterapii mogą wpisywać się w standardy Pet Partners w formie AAI (podano w tabeli 1), jako spotkania z alpakami (AAA), edukacja z udziałem alpak (AAE) i terapia z udziałem alpak (AAT). Terapia z udziałem alpak jest w Polsce rzadko spotykana, najczęściej są to spotkania z alpakami. Alpakoterapia może być brana pod uwagę w terapii osób z niepełnosprawnościami, jak i w normie intelektualnej i ruchowej. |
| Dolphin        | Dolphin-assisted therapy is a combination of aquatic therapy and animal-assisted therapy, with a focus on human-animal contact. The therapeutic team consists of a dolphin trainer, a therapist (doctor, psychologist, rehabilitator), and a specially trained dolphin. This type of animal-assisted therapy is primarily used for children with intellectual disabilities. Delfinoterapia jest połączeniem aquaterapii i animaloterapii, gdzie pacjent pozostaje w bliskim kontakcie ze zwierzęciem. Zespół terapeutyczny składa się trenera delfinów oraz terapeuty (lekarza, psychologa, rehabilitanta) i specjalnie wyszkolonego delfina. Delfinoterapia przede wszystkim znajduje zastosowanie w terapii dzieci z niepełnosprawnościami umysłową. |

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**EQUINE-ASSISTED THERAPY**

Equine-assisted therapy (also referred to as horse-assisted therapy or hippotherapy) can be regarded as a form with the greatest similarity to physical rehabilitation, as it involves contact with the animal and horse riding. Besides canine-assisted therapy, it is the most common form of animal-assisted therapy [Charry-Sánchez et al. 2018]. The Canons of Polish Hippotherapy provide the following definition: *Hippotherapy is a targeted therapeutic action intended to improve human physical, emotional, cognitive, and/or social function, with a specially trained horse as an integral part of the therapeutic process. It is delivered by a qualified hippotherapist in accordance...*
with the recommendations specified by the physician referring to hippotherapy and in cooperation with other specialists taking care of the patient [PTHip 2020]. The Canons of Polish Hippotherapy [2020] and other authors [Kolarczyk et al. 2016, Ciechanowicz and Lukbowska 2018] specify diseases in which hippotherapy is recommended (e.g. cerebral palsy, mental illness and disorders, posture defects, Down syndrome, psychological disorders, multiple sclerosis, post-stroke states, cranio-cerebral trauma, addictions, and social pathologies).

The selection of horses is based on their temperament, reactivity [Anderson et al. 1999], gait type (soft) [Anderson et al. 1999, Łojek et al. 2015], and anatomy. Calm but not phlegmatic horses with a balanced response to stimuli and not afraid of contact with a strange person are chosen for therapy [Anderson et al. 1999, Sawaryn 2008, Pluta 2008]. Horses with different types of behavioral problems, e.g. undesirable behavior and behavioral anomalies such as stereotypies [Budzyńska 2014], cannot be used in hippotherapy. The optimal height of the horse is approximately 130–155 cm. A horse should not start work before the age of 5 [Sawaryn 2008]. In terms of the sex of horses, geldings are used in hippotherapy more frequently than mares [Cieślak 2007, Pluta 2008, Łojek et al. 2015]. Many breeds of horses are successfully used in hippotherapy: Hucul, Polish Konik, Felin Pony, Fjord, Wielkopolski Horse, Małopolski Horse, Polish half-bred, and Arabian horse breed [Łojek et al. 2015].

DONKEY-ASSISTED THERAPY

Donkey-assisted therapy (also referred to as onotherapy) is a form of therapy that involves interactions between patients and donkeys. The donkey population is currently being restored, as they can be used for recreation and onotherapy [Camillo et al. 2018]. PSHO [2020] defines onotherapy as a supportive donkey-assisted therapy, which uniquely complements other rehabilitation methods. As underlined by Camillo et al. [2018], donkeys are slower and smaller than horses and have a longer and softer hair coat that is pleasant to touch. Patients that are afraid of horses or dogs choose donkeys. Onotherapy can be part of the rehabilitation of children with mobility impairment [De Rose et al. 2011], mental disorders, or autism [Gonzalez-De Cara et al. 2016] and therapy for adults with mental health disorders [Tropia et al. 2017].

The donkey’s temperament [De Rose et al. 2011, Gonzalez-De Cara et al. 2016] and size [De Rose et al. 2011] are the basis for selection. Gonzalez-De Cara et al. [2016] developed tests for the determination of the predisposition of donkeys for use in onotherapy. Donkeys are less sensitive to auditory stimuli than horses. Another advantage is the fact that they are accustomed to being mounted by the human on both sides of the body. Compared to horses, donkeys’ reactions are gentler.

There are no reports demonstrating the most suitable breed (among 28 donkey breeds) for onotherapy [Camillo et al. 2018]. Although they are anecdotally regarded as “stupid and stubborn”, donkeys are quite trainable animals [González et al. 2019] willing to cooperate with a competent person [PSHO 2020].

ALPACA-ASSISTED THERAPY

Due to their appearance, gentle temper, and predisposition for training, alpacas are increasingly being used in animal-assisted therapy [Morales Villavicencio 2010, Kokocińska 2017, Kapustka and Budzyńska 2020]. This type of therapy can be defined as a method for enhancement of the effectiveness of personality development, education, and rehabilitation, in which a properly selected and trained alpaca is the motivator and the therapy is delivered by a qualified therapist. These animals with their very strong herd instinct should not work alone. Alpaca-assisted therapy can be successfully applied as a support for the therapy of patients with neurosis, depression, anxiety disorders, and mental diseases and in children with ADHD, autism, or cerebral palsy [Kokocińska 2017]. It can also be applied in patients in hospitals and nursing homes, where the animals positively influence patients’ well-being [Morales Villavicencio 2010].

Selection and appropriate preparation are the basis for the proper work of the animal. The best animals are those with a mild temperament [Kokocińska 2017], but they must be adequately prepared. Males are chosen most frequently and preferably neutered [Morales Villavicencio 2010]. Walking on a leash is the basic skill required from the working animal. The possibility to be driven in a car or a livestock trailer is an additional advantage [Kapustka and Budzyńska 2020]. It is extremely important to desensitize the animals to tactile stimuli, especially on the hind limbs. To date, there have been no reports on a higher predisposition for alpaca-assisted therapy of any of alpaca breeds (Huacaya or Suri). Unlike horses and donkeys, alpacas cannot be ridden. The therapy with these animals is focused on contact as well as feeding and touching the animal in appropriate intensity. Children and adults are eager to make contact with alpacas, as the animals have unusual and pleasant appearance [Morales Villavicencio 2010], which also helps to focus the child’s attention during therapy.

DOLPHIN-ASSISTED THERAPY

Dolphin-assisted therapy can be defined as a combination of aquatic therapy (water therapy) with animal-assisted therapy (dolphin-assisted therapy). This type of therapy is not available in Poland [Buchnat and Rzepka 2013]. Although the dolphin may initially arouse fear [Brensing et al. 2003], its willingness to play, ease of
making contact with man, or a smile-like face can turn fear into sympathy [Buchnat and Rzepka 2013]. As reported by Chapriko and Dąbrowska [2016], dolphin-assisted therapy is useful in the treatment of cerebral palsy, autism, Down syndrome, and hyperactivity disorder (ADHD). Additionally, ultrasound emitted by dolphins might support regeneration of body cells. These theses are based on investigations conducted in the 1990s, which were analyzed in detail by Marino and Lilienfeld [1998]. These authors discussed a number of shortcomings in the studies on the effectiveness of dolphin-assisted therapy, e.g., absence of a control group or incorrectly selected statistical tests. The authors suggest that, due to the inaccuracy of the analyzed studies, the potential improvement may have been associated with a placebo effect or a novelty effect [Marino and Lilienfeld 1998]. Similarly, the potential tissue regeneration by ultrasound emitted by dolphins has not been confirmed experimentally [Brensing et al. 2003].

Compared to other forms of animal-assisted therapy, dolphin-assisted therapy raises controversy. Undoubtedly, it can bring positive effects as a supportive method motivating the patient to undertake exercises related to e.g. rehabilitation [Buchnat and Rzepka 2013]. Noteworthy, dolphins are one of the non-domesticated mammal species described in this article and the most exotic animals used in the therapy [Brakes and Williamson 2007, Williamson 2008, Gardiánová and Hejrová 2015]. Yet, no matter how perfectly designed, the living conditions provided to these animals will not replace the natural environment. What is more, dolphin-assisted therapy is associated with huge costs (visits to another country, therapeutic activities) [Brakes and Williamson 2007], which is another argument for choosing a different form of therapy. The aggressive behavior of dolphins towards people swimming in their company is reported reluctantly [Brakes and Williamson 2007]. It can be assumed that such behavior results from chronic stress experienced by dolphins. These facts suggest that dolphins should not be used in AAT.

USE OF OTHER SPECIES AS THERAPEUTIC ANIMALS

The animal-assisted therapies also involve other species including small mammals (‘pocket pets’), birds, fish [Edwards and Beck 2002, Kršková et al. 2010, Gardiánová and Hejrová 2015, Gut et al. 2018] and farm animals [Berget and Braastad 2011]. ‘Pocket pets’ such as guinea pigs, hamsters or rabbits can be used in autism therapy as well as their presence can positively affect cooperation and social behavior in ADHD and Asperger’s patients [Kršková et al. 2010, Gardiánová and Hejrová 2015]. Working on and contact with farm animals is used in therapy for people with psychiatric disorders, reducing anxiety and depression symptoms [Berget and Braastad 2011]. Birds (e.g. canaries, parrots, zebra finches) or aquarium fish (e.g. goldfish) can be quite frequent residents of elderly homes or hospitals and they are also the other alternative to use in animal-assisted therapy [Edwards and Beck 2002, Gardiánová and Hejrová 2015].

Small mammals should be well prepared to work in animal-assisted intervention. Training involves handling by children. Guinea pigs, hamsters, or rabbits cannot be afraid of touching, stroking, or taking on hands [Kršková et al. 2010, Gardiánová and Hejrová 2015, Gut et al. 2018]. Aggressive behaviour like biting or scratching is unacceptable [Gardiánová and Hejrová 2015]. On the other hand, the welfare of animals used in AAT is crucial. Gut et al. [2018] found that the possibility of retreat during AAT with guinea pigs is instrumental in reducing the animal stress and should be provided during sessions using this species.

The most commonly used birds in animal-assisted interventions are parrots, because of their intelligence, ability to learn, and creating a strong bond with humans. Interaction with parrots provides physical closeness and emotional stimulation [Gardiánová and Hejrová 2015]. The presence of aquarium with fish is usually used for visual stimulation as looking at moving fish can attract attention and increase concentration. Fish observation could be a pleasure for the elderly or lonely people [Edwards and Beck 2002]. Contact with fish has a positive, calming, and relaxing effect on patients in hospitals or nursing homes. Occupational therapy with farm animals (e.g. cattle, sheep, goats, poultry) involves working on a farm, including animals care, feeding as well as box cleaning [Berget and Braastad 2011].

CONCLUSION

Palestrini et al. [2017] underline that there is a growing number of evidence supporting the benefits of human-animal interactions for humans and only few studies focused on the welfare implications for therapeutic dogs as a result of their participation in AAT. On the other hand, in a review about dog-assisted therapies in psychiatric and cognitive disorders as well as medical interventions, the overall assessment of the all included studies showed minor to moderate effects, and the majority of examined outcome measures indicated no significant effect [Lundqvist et al. 2017]. Still further reliable investigations on the effects of AATs on both human and animal well-being are needed.

Various forms of animal-assisted therapy are gaining increasing numbers of supporters. Therapeutic animals (e.g. dog, cat, horse, alpaca) are used to improve not only physical but also mental health, cognitive development, and motivation. Various animal species can also promote
the development of personality, education, and rehabilitation and improve the quality of life. During the last years, a growing interest has also been observed in the use of other species such as small mammals, birds, fish, and farm animals, however, they are not as widely used as dogs or horses. A properly selected and trained animal is a great support in the therapist work and helps to establish an appropriate human-animal relationship. With the well-being of patients and the welfare of animals in mind, both parties of animal-assisted therapy will benefit.

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AKTUALNE MOŻLIWOŚCI UŻYTKOWANIA RÓŻNYCH GATUNKÓW ZWIERZĄT DO CELÓW TERAPEUTYCZNYCH W POLSCE

STRESZCZENIE

W terapii z udziałem zwierząt może być użytkowanych wiele gatunków udomowionych (np. pies, kot, koń) i bardziej egzotycznych (np. delfin) lub drobnych ssaków (np. kawia domowa), a jej celem jest poprawa fizycznego oraz psychicznego funkcjonowania zarówno dzieci, jak i osób dorosłych. Celem niniejszej pracy jest charakterystyka rodzajów terapii z udziałem zwierząt opartych na użytkowaniu różnych gatunków, takich jak pies domowy, kot domowy, koń domowy, osioł domowy, alpaka oraz delfin butlonozy. W niniejszym artykule podano również informacje dotyczące możliwości użytkowania innych gatunków lub grup zwierząt, takich jak drobne ssaki („pocket pets”), ptaki, ryby oraz zwierzęta gospodarskie. Kontakt ze zwierzętami wspiera rozwój osobowości, edukacji i rehabilitacji oraz polepsza jakość życia. Zwierzę jest również doskonałym motywatem do podejmowania nowych aktywności. Właściwie wyselekcjonowany i wyszkolony pies, koń czy alpaka jest doskonałym wsparciem w pracy terapeuty, a także sprzyja kształtowaniu się pozytywnych relacji człowiek–zwierzę.

Słowa kluczowe: terapia z udziałem zwierząt, kontakt ze zwierzęciem, zwierzę terapeutyczne