

To Err is Human, To Love is Canine; An Insight into Therapeutic Effects of Petting Dogs

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“Such short little lives our pets have to spend with us, and they spend most of it waiting for us to come home each day. It is amazing how much love and laughter they bring into our lives and even how much closer we become with each other because of them” - John Grogan.

Figure 1

“A dog is the only thing on earth that loves you more than he loves himself” - Josh Billings.

Biophilia hypothesis (BET)

The term “biophilia” means “love of life or living organisms.” Edward O. Wilson introduced the biophilia hypothesis describes it as the “the contacts that human beings subconsciously seek with the rest of life” in his book, Biophilia (1984). It is “the urge to associate with other forms of life.” The biophilia hypothesis also referred to as BET suggests that humans hold an innate propensity to connect

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with nature and other forms of life. Erich Fromm used the hypothesis to designate a psychological alignment of being fascinated to all that is alive and vital. Aristotle proposes the concept of mutuality and how such relationships are advantageous to both with regards to happiness. The humans have this innate biological propensity to intermingle and make close networking and forming emotional bonds with other forms of life, especially with animals such as dogs [1-3].

Figure 2

Why dogs are more than a best friend

Dogs are one of the earliest domesticated animals in almost all human civilisations. Dogs function as dedicated companions offering unconditional love, unquestioning attachment and acceptance

towards their human counterpart. In many human societies dogs turn out to be a vital part of a family and is also well-thought-out as their own family members. The level of attachment flanked by a dog and its dog owner is well thought-out as functionally similar to the relationship amongst a child and parent. Numerus studies have proved that apart from the canine's eager devotion, they can also provide therapeutic effects on humans such as reduce blood pressure in hypertensives, ease the solitude of elderly in old age homes and also aid children overawed allergies [4].

Human-animal interaction (HAI)

human-animal interaction includes various animal-human activities such as animal-assisted interventions (AAI), animal-assisted therapy (AAT). The human animal (Dog) interaction includes stroking, scratching, patting and activating touch (scratching and patting) of the dog by human. The effects of such interaction is studied irrespective of age, sex and educational status [5].

The oxytocinergic system

Oxytocin (OT) is a hypothalamic neuropeptide formed in hypothalamus in retort to sensory stimulus and is released into brain and circulation. During early days of endocrinal research, scientists believed that Oxytocin was the supervisor of parturition and lactation alone. But recently Oxytocin has gained consideration for its capability to modify social behaviours. OT is found to be released during sensory stimulus such as breastfeeding, sex, labor, touch, warmth, stroking, and in the milieu of trusting relationships. Oxytocin modifies several physiological, psychological behavioural and social functions [4,6].

Acute effects of oxytocin (OT)

Improvement in Social interaction: upsurges eye contact, trust, empathy, social face memory, skills, positive self-insight, maternal care behaviour, kindness, bonding of the offspring, reduces depression, thwarts aggression and helps in progression of learning by habituation.

- **Anti-stress action of oxytocin:** In humans and non-human animals, it reduces levels of stress hormones such as glucocorticoids. On intra-cerebroventricular administration, OT lessens blood pressure, heart rate. It raises peripheral cutaneous circulation and cutaneous temperature.
- **Effects on anxiety, pain, and immunity:** Animal studies proves that Oxytocin causes anti-inflammatory effect and increases threshold for pain sensation. In relation to social threats, it demonstrates anxiolytic effect.

- **Effects on health and restoration:** In gastrointestinal tract, OT stimulates parasympathetic nervous system, which is linked to a boosted digestive function and increases growth [4,6].

Effect of human-animal interaction HAI on oxytocin

Physical contact and the relationship between owner and dog seem to play an important role in release of various hormones in both humans and dogs. Studies show that in humans as well as in dogs, HAI produced significant raise in levels of plasma Oxytocin, prolactin, phenylacetic acid, and dopamine after 5 to 24 min of stroking a dog. Interface between owner and pet dog occasioned a solid effect than stroking an unfamiliar dog. During the positive interaction such as physical contact, production of Oxytocin increases with the level of closeness in the relationship between the human and the dog. Increase in OT levels hinges on the eminence of the human-animal relationship [4-6].

Positive effects of human-animal interaction (HAI)

- **Social catalyst effect:** Enhancement of social attention, improved mood, social behaviour, improved interpersonal interaction, Increased trust and trustworthiness.
- **Stress:** Drop in stress-related parameters such as cortisol, blood pressure heart rate, epinephrine and norepinephrine.
- **Mental health:** Improvement of reduction of self-reported fear and anxiety, increased trustworthiness of and trust toward other persons, reduced aggression and enhanced empathy and improved learning
- **Physical health:** Improvement of cardiovascular health, pain management, improvement of immune system functioning [4,5].

The concept of "Assistance dogs"

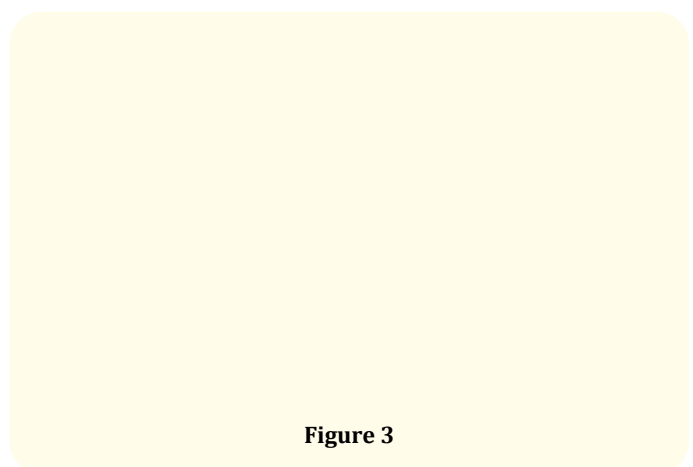


Figure 3

Besides the conventional health care, people with disability (severe) every so often necessitate special aid from unceremonious care-givers. They suffer from general low health-related quality of life, well-being and activity level. Guide Dogs for the blind have been trained formally for over seventy years, but training dogs for people with physical and mental health disabilities is a much more recent concept. Assistance dogs delivers specific service to their handlers and they greatly influence the enhancement of their quality of lives with a new-fangled sagacity of freedom and independence for those individuals [7,8].

Types of assistance dogs: Service dogs and facility dogs

- **Service dogs:** The dogs that are trained to assist specific individuals (person with disabilities) and is dedicated to meet their specific needs. The operation of service dogs reduces the need for human health care and social workers. It also increases the individual's independence, assuage strain, reduce the peril of social isolation of such individuals with specific needs [8,9].

Guide dogs: Assist the blind and the visually impaired

- **Hearing dogs, or signal dogs:** Help the deaf and hard of hearing.
- **Mobility assistance dogs:** Assist physically disabled person.
- **Medical alert dogs or medical alarm dogs:** (diabetic dog or epilepsy dog).
- **Psychiatric service dogs:** Assist person with a psychiatric disability or a mental disability (PTSD, schizophrenia, depression, anxiety, and bipolar disorder)
- **Autism Assistance dogs:** Assist an autistic person.

Facility dogs

- **Court-house facility dogs:** Handled by professionals working in the legal system; to assist crime victims, witnesses.
- **Facility dogs in educational settings:** Handled by special education teachers to enable interface with the students.
- **Facility dogs in healthcare environments:** Handled by physical therapists, psychologists, and other healthcare professionals to facilitate recovery and symptom management for patients [8-11].

Bibliography

1. Wilson Edward O. "Biophilia". Cambridge: Harvard University Press (1984).
2. Biophilia hypothesis. "Encyclopædia Britannica". Encyclopædia Britannica Ultimate Reference Suite". Chicago: Encyclopædia Britannica (2014).
3. Silva NB and Osório FL. "Impact of an animal-assisted therapy programme on physiological and psychosocial variables of paediatric oncology patients". *PLoS One* 13.4 (2018): e0194731.
4. Petersson M., et al. "Oxytocin and Cortisol Levels in Dog Owners and Their Dogs Are Associated with Behavioral Patterns: An Exploratory Study". *Frontiers in Psychology* 8 (2017): 1796.
5. Beetz A., et al. "Psychosocial and psychophysiological effects of human-animal interactions: the possible role of oxytocin". *Frontiers in Psychology* 3 (2012): 234.
6. Mitre M., et al. "Oxytocin Modulation of Neural Circuits". *Current Topics in Behavioral Neurosciences* 35 (2018): 31-53.
7. Lundqvist M., et al. "The impact of service and hearing dogs on health-related quality of life and activity level: a Swedish longitudinal intervention study". *BMC Health Service Research* 18.1 (2018): 497.
8. Assistance Dogs International. *Types of Assistance Dogs* (2018).
9. Allen K and Blascovich J. "The value of service dogs for people with severe ambulatory disabilities. A randomized controlled trial". *JAMA* 275 (1996): 1001-1006.
10. The Swedish Association of Service Dogs. *Service- och signalhundsförbundets assistanshundar* [In Swedish] (2017).
11. JP Wisdom., et al. "Another breed of "service" animals: STARS study findings about pet ownership and recovery from serious mental illness". *American Journal of Orthopsychiatry* 79.3 (2009): 430-436.

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