



Unraveling the Perils: Investigating the Role of Pet Dogs in Transmitting Diseases to Humans

Yagoob Garedaghi^{1*}, Josué de Moraes²

Dogs have always been a part of human life. However, people who own pet dogs may unknowingly transfer germs from the dog to themselves and other family members. This can happen when individuals do not wash their hands after interacting with the animal, or if the dog shares sleeping spaces with its owner. Such interactions can lead to the spread of germs within the household. In fact, around ten percent of dog owners have been found to carry "*E. coli*" bacteria, which can be present both in the dog and its owner (1).

According to a report by the World Health Organization, out of 1709 known pathogens, 832 can be transmitted from animals to humans. Additionally, out of 156 new diseases identified in humans, 114 are zoonotic, meaning they can be transmitted from animals to humans (2).

Considering the potential impact of these diseases on the immune system, it is crucial to be cautious about allowing animals to interact with vulnerable individuals such as the elderly, infants, toddlers, individuals undergoing cancer treatments, those who have recently undergone organ transplant surgery, and people with autoimmune diseases. Special attention should be given to these individuals to prevent the transmission of diseases (3).

Several diseases can be transmitted from animals, including dogs, to humans. Some of the common ones include:

- Rabies:** Rabies is a highly fatal viral disease that affects the central nervous system. It is transmitted through the bite of rabid animals. Rabid dogs exhibit aggressive behavior, tend to bite objects, animals, humans (including their owners), and even themselves, causing severe wounds. Rabies has a near 100% mortality rate, making it a severe public health concern.
- Cutaneous leishmaniasis:** Cutaneous leishmaniasis is a chronic skin disease characterized by painless sores and fever. It can be transmitted between humans and various animals, including rodents and dogs. The disease parasite enters the human body through the

Yagoob Garedaghi is an Assistant Professor and Academic Staff Member in the Department of Parasitology at the Faculty of Veterinary Medicine at Tabriz Medical Sciences, Islamic Azad University, in Tabriz, Iran. He was born in Tabriz, Iran in 1970 and graduated from Tabriz Branch, Islamic Azad University, Iran in 1995. Between 2002 and 2007, he completed his specialty in Parasitology (PhD) at Islamic Azad University Tehran Science and Research Branch, Tehran, Iran. Dr. Garedaghi's research focuses on pathogenic parasites, particularly helminths/protozoa and arthropods, as well as medical parasitology and epidemiology. He has published over 200 papers in international journals with more than 576 citations, and is a member of the editorial board in Crescent Journal of Medical and Biological Sciences. Currently, he is the Editor-in-Chief of the International Journal of Medical Parasitology and Epidemiology Sciences.



bite of an infected sandfly, which feeds on the wounds of rodents and dogs, transmitting the disease (4).

- Hydatid cyst:** Hydatid cyst is a parasitic disease caused by ingesting eggs of the *Echinococcus* worm, present in the feces of infected dogs. This disease forms watery sacs containing the larval stage of the parasite and can occur in different parts of the body. Transmission occurs through hands contaminated with dog feces and consumption of water and food contaminated by infected animal feces (5).
- External parasites:** Fleas, lice, and mites are common external parasites. Fleas, in particular, can act as intermediate hosts for tapeworms like *Dipylidium caninum*. Human fleas, *Pulex irritans*, also infest dogs, causing severe bites to humans.
- Tapeworm infections:** *Dipylidium caninum* is a prevalent tapeworm in dogs, causing symptoms like increased appetite and weight loss.
- Toxocariasis:** This parasitic disease is caused by roundworms and can affect various animals, including dogs and cats. *Toxocara cati* and *Toxocara canis* are the species responsible for this disease (5,6).
- Gastrointestinal protozoa:** Gastrointestinal protozoa like *Giardia* and *Entamoeba* can cause diarrhea, abdominal cramps, and weight loss in humans. Transmission happens through contaminated dog feces.

Received 12 September 2023, Accepted 1 November 2023, Available online 23 November 2023

¹Department of Parasitology, Faculty of Veterinary Medicine, Tabriz Medical Sciences, Islamic Azad University, Tabriz, Iran.

²Research Center for Neglected Diseases, Guarulhos University, Guarulhos, SP, Brazil.

*Corresponding Author: Yagoob Garedaghi, Email: Yagoob.garedaghi@gmail.com, Y_garedaghi@iaut.ac.ir



Preventive measures, such as regular veterinary check-ups, good hygiene, clean living spaces, responsible waste disposal, education, and awareness, are vital in controlling diseases transmitted from dogs to humans. Given the importance of these diseases, it is essential to raise awareness and enhance community education in this area (7,8). Veterinary experts highlight the increasing issue of the spread of common diseases between animals and humans due to the rising number of pet owners (9,10).

Authors' Contribution

Conceptualization: Yagoob Garedaghi, Josué de Moraes.
Data curation: Yagoob Garedaghi, Josué de Moraes.
Formal analysis: Yagoob Garedaghi, Josué de Moraes.
Funding acquisition: Yagoob Garedaghi.
Investigation: Yagoob Garedaghi Josué de Moraes.
Methodology: Yagoob Garedaghi, Josué de Moraes.
Project administration: Yagoob Garedaghi.
Resources: Yagoob Garedaghi, Josué de Moraes
Supervision: Josué de Moraes.
Validation: Yagoob Garedaghi, Josué de Moraes.
Visualization: Yagoob Garedaghi, Josué de Moraes.
Writing-original draft: Yagoob Garedaghi.
Writing-review & editing: Josué de Moraes.

Conflict of Interests

None.

Ethical Issues

Not applicable.

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