



Developing Children's Awareness of Diseases Caused by Cats and Dogs

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Abstract

This project is designed to raise awareness among students, particularly those in basic education, about the diseases that can be transmitted by cats and dogs that are commonly kept as pets, and to equip them with practical skills by distributing questionnaires and facilitating discussions on the topic. Educating children about the potential health risks associated with these animals is crucial to ensure their safety and well-being. To achieve this goal, we have created an open forum for children to ask questions, voice their concerns, and receive accurate information. By employing these strategies, we can help children develop a correct understanding of the diseases that can be transmitted by cats and dogs, as well as the proper habits and practices for interacting with them.

Conclusion: Raising cats and dogs gives children a sense of responsibility and awareness, as it can have a positive impact on a child's personality development. Therefore, children need to maintain good health habits, avoid diseases, and understand various prevention methods, which will help to cultivate a new generation of conscious individuals.

Key Words: Pets – Importance – Learning – Diseases – Precautions

1. Introduction: Today's youngsters will be understand the responsibilities of pet pet owners tomorrow, and they must ownership to avoid future public health

issues . As a result, the search intends to teach children how to care for their pets without risking the spread of diseases to other animals or people. Children can serve as "health messengers" in their homes and communities by providing regular veterinary care and maintaining good pet cleanliness. Demonstrating the value of these behaviors in illness prevention will instill in children an appreciation for pets' health.

Common Diseases Caused by Cats

a. Toxoplasmosis

The protozoan parasite *Toxoplasma gondii* is the source of the parasitic disease toxoplasmosis. It may infect a variety of warm-blooded species, including humans, although it is most often associated with cats because they are the primary host of the parasite.

– Transmission: Cats can become infected with *T. gondii* by ingesting infected prey, such as rodents, birds, or raw meat. The parasite can also be acquired through contact with contaminated soil, water, or feces containing the parasite's oocysts.

– Cat's role: Inside the cat's intestines, *T. gondii* undergoes sexual reproduction and produces oocysts, which are shed in the cat's feces. These oocysts can then contaminate the environment, posing a risk of infection to other animals and humans.

– Symptoms in cats: Cats infected with *T. gondii* may not show any symptoms, or they may develop mild diarrhea, lethargy, loss of appetite, and fever. In healthy cats, the infection often resolves on its own without treatment. However, cats with weakened immune systems, such as those with feline immunodeficiency virus (FIV) or feline leukemia virus (FeLV), may experience more severe symptoms.

•Human infection: Humans can become infected with *T. gondii* by accidentally ingesting oocysts through contaminated food, water, or soil, or by handling infected cat litter without proper hygiene practices. Most healthy individuals who acquire toxoplasmosis experience mild flu-like symptoms or remain asymptomatic. However, the infection can be more severe in individuals with weakened immune systems and can pose risks during pregnancy, potentially causing congenital complications.

• Prevention: To prevent cat toxoplasmosis, it is important to maintain good hygiene practices. This includes avoiding contact with cat feces, wearing gloves while gardening or handling soil, cooking meat thoroughly, washing fruits and vegetables, and practicing proper hand hygiene after handling cats, litter boxes, or raw meat. (Dubey,2010).

b. Cat scratch disease

Cat-scratch disease is a bacterial infection that can occur after a cat bites or scratches a person. Approximately 40% of cats contain the bacteria at some point in their life, with kittens under one year of age being more likely to have it. Most cats with this infection do not show any symptoms of the disease.

People bitten or scratched by an infected cat may get a minor infection at the wound site 3–14 days later. The infection may progress, resulting in fever, headache, decreased appetite, and weariness. Later, the lymph nodes nearest the initial scratch or bite may become swollen, sensitive, or painful. (Clifton et al.,2007).

c. Ringworm

A fungus called ringworm may infect both human and animal skin, hair, and nails. Ringworms are transmitted from animals to humans through direct contact with the skin or hair of an infected animal. Ringworm infection in cats is characterized by small areas of hair loss around the ears, cheeks, or legs, as well as scaly skin. However, some cats infected with ringworm show no signs of infection at all. Cats are usually the most affected.

Ringworm infection in humans can originate in almost any part of the body. These infections are often itchy. Redness, peeling, cracked skin, or a ring-shaped rash. If the

disease affects the scalp or beard, hair may fall out. Affected nails change color or become thick. (Clayton et al.,2008).

d. Allergies

The most prevalent kind of asthma is allergic asthma. It happens when an allergen, like a pet hazard, sets up asthmatic symptoms. A 2020 study found that there are many allergens in cat dander, saliva, and urine. These allergens may induce allergic asthma in certain individuals.

But when people are near cats, they might get symptoms like runny nose, congestion, irritability, fatigue, itchy eyes, nose, or mouth, coughing, and tightness in the chest and chest.

Ways to prevent asthma and allergies caused by cats:

- Bathing cats.
- Combing cats regularly to remove dead hair and prevent its spread in the home.
- Put on a mask. After handling the cat, thoroughly wash your hands.
- Clean the house regularly:
- Use a vacuum cleaner with a HEPA filter to remove cat danger from furniture and carpets.
- Wipe surfaces with a damp cloth instead of sweeping to remove dust and lint.
- Wash bedding and curtains regularly.
- Clean the cat's litter box regularly and ensure good ventilation.

Evaluated medically by Elizabeth (2022).

e. Plague

Serious infection that affects humans and is caused by a bacterium called *Yersinia pestis*. It is usually transmitted through the bite of a flea that feeds on an animal, such as cats. It causes ulcers and abscesses in the glands of the arms and legs, and the disease can spread to humans through Touching cats.

(Gerard. et al.,2018)

f. Campylobacters

Transmission of Campylobacter bacteria can cause both animals and individuals to become infected with a disease called campylobacteriosis, where individuals become infected with Campylobacter by coming into contact with the feces, dander, or food of infected animals including cats, or by eating contaminated food or water, or Wounds Open. and cats usually become infected by eating contaminated raw meat, and anyone can become infected with campylobacteriosis. (Samuel. et al., 2015).

Common Diseases Caused by Dogs

a. Rabies

Mammals who contract rabies have damage to their neurological systems. It is brought on by a virus, which is usually transmitted by an infected animal biting a human or another animal. Once symptoms show, rabies cannot

be cured and is a deadly illness. (Alan and William, 2007).

Canine worm larvae infection *Toxocara canis* is an infectious disease whose main transmission source is infected domestic dogs, especially puppies.

Ascaris eggs are excreted in dog feces, develop into fetal eggs, and persist for a long time in the external environment, perhaps for several months, and these fetal eggs are infectious agents for dogs. Children become infected when they meet infected dogs due to contamination and failure to observe preventive measures. When they enter the human body, the larvae go directly to the small intestine and then pass through the bloodstream to be transmitted to various organs. (Otranto and Dantas_Torres , 2010)

b. Leptospirosis

Leptospirosis: is a bacterial disease caused by pathogenic spirochetes of the genus *Leptospira*. It affects both humans and animals and is considered a zoonotic disease, meaning it can be transmitted from animals to humans. Leptospirosis is commonly transmitted through contact with water or soil contaminated with the urine of infected animals. (Bharti et al. , 2003)

The symptoms: of leptospirosis can range from mild to severe and may include high fever, muscle aches, headache, vomiting, and

in severe cases, kidney damage, and liver failure.

Ways to prevent disease:

- Avoid direct exposure to contaminated urine.
- Wear protective clothing and shoes when dealing with potentially infected animals.
- Promote personal hygiene periodically. (Sicong et al., 2022).

c. Lyme disease

An infection with the bacteria *Borrelia burgdorferi* is the cause of Lyme disease. The bite of an infected black-legged tick, such as a deer tick, can spread the germs to both people and animals.

Symptoms: Dogs can display several forms of Lyme disease, but the most common symptoms are lameness, swollen lymph nodes, joint swelling, fatigue, and loss of appetite.

Way to prevent disease:

- Avoid areas with tall grasses where deer ticks that transmit Lyme disease grow.
- Wear pants and long sleeves if you are in areas where ticks that transmit Lyme disease are common.
- Use topical insect repellent on exposed skin areas. (Steere and Strle, 2016).

d. Echinococcosis

Echinococcosis is caused by tapeworms belonging to the genus *Echinococcus*. As

adults, these organisms reside in the intestines of definitive hosts, and as cyst-like larvae (Nabarro et al., 2015), they inhabit the internal organs of intermediate hosts.

Dogs become infected with the disease by ingesting tapeworm cysts found in the tissues of infected animals, including sheep, goats, and others. In the dog's intestine, the cysts mature into adult tapeworms. Dogs with tapeworm infections excrete eggs in their stools. After the eggs hatch, the animal's internal organs become cysts. Infected animals may also have eggs on their fur. People may pick eggs from an infected animal and pass them from their hands to their mouths or food, thus becoming infected.

(Aliakbarian et al., 2018)

The digestive tract is where the eggs hatch, releasing galls. The galls penetrate the intestinal wall and make their way to the liver and lungs, among other organs, through the circulatory system. The globules in these organs grow into cysts, which gradually increase and cause symptoms in patients.

Symptoms of echinococcosis might include the following:

- Cysts in the liver can cause abdominal discomfort and yellowing of the skin and whites of the eyes.
- If lung cysts develop, coughing up blood and experiencing chest discomfort.

•an extreme allergic response that might be fatal (anaphylaxis)

Preventing Echinococcosis can be done by:

- Hands should be cleaned carefully.
- Avoid eating or drinking anything that could be tainted with dog feces in regions where echinococcosis is prevalent. (Chelsea Marie,2023).

Precautions

- Pets are not permitted to share beds or indoor spaces reserved for children. Prevent contact with pet hair, saliva, or feces.

- Avoid changing pet litter boxes while pregnant to limit your risk of being exposed to feces-containing germs that might cause disease.

- Maintain the cleanliness of areas where children and pets frequently interact by using non-toxic cleansers.

- Teach youngsters not to touch their eyes, faces, or any other sensitive places after handling or playing with pets and encourage them to thoroughly wash their hands afterward.

- Consult your veterinarian about various preventative programs and frequent treatments for your pet.

- Pregnant women should avoid contact with cats and should change the litter box regularly, use gloves, and wash their hands well to reduce the risk of infection.

- Teach youngsters the importance of informing their parents if they are bitten or scratched by a cat.

- Make sure your pet is clean.

- Ensure that the pet has received all necessary immunizations,as approved by the veterinarian.

- Raising awareness and teaching youngsters how to treat pets appropriately, such as washing their hands after playing with them and refraining from touching the animals' faces.

- Children's interactions with dogs should be monitored to ensure their safety.

- Pet parasite control involves the elimination of fleas, ticks, and pinworms. (Kacprzyk and Pedrycz 2012).

Ways to Increase Children's Awareness:

- Storytelling: Use storytelling to explain to children the importance of proper hygiene and care when interacting with cats and dogs. You can create stories that highlight the need for regular handwashing, avoiding contact with animal waste, and seeking medical attention if they experience any symptoms after interacting with pets.

- Interactive activities: Organize interactive activities such as coloring or drawing competitions where children can depict safe interactions with pets. This can be accompanied by discussions on the importance of vaccinations and regular vet

check-ups for animals to prevent the spread of diseases.

- Pet care workshops:** Arrange workshops where children can learn about the proper care of pets, including the importance of grooming, feeding, and handling pets safely. Incorporate information about zoonotic diseases (diseases that can be transmitted from animals to humans) and how to minimize the risk of transmission.

- Classroom discussions:** Facilitate open discussions in the classroom about the responsibilities of pet ownership and the potential health risks associated with cats and dogs. Encourage children to share their experiences and ask questions about pet-related diseases.

- Educational materials:** Provide children with age-appropriate educational materials, such as posters or brochures that outline the common diseases that can be transmitted from cats and dogs to humans. These materials can be designed in a fun and engaging way to capture children's attention. (Park,2018).

By incorporating these strategies, you can help children develop a better understanding of the potential health risks associated with interactions with cats and dogs while promoting empathy and responsible pet ownership.

2. The Theoretical Framework

Ana Margarida Alho et al. Study (2018): Awareness of zoonotic diseases and parasite control practices: a survey of dog and cat owners in Qatar. This study found a number of risk variables linked to pet ownership in Qatar that increase the likelihood of parasitic zoonotic disease transmission. After administering a multiple-choice questionnaire to owners of dogs and/or cats, it was determined that to lower the risks of zoonotic illnesses in Qatar, pet owners need to become more aware of infectious diseases and implement effective preventative measures.

3. Methods and Tools :

- Theoretical**

Students were asked questions and participated in conversations to learn more about the topic under examination.

- Practical**

We created a video to illustrate some of the diseases caused by cats and dogs so that pupils understand the need for disease prevention and raising awareness. (Appendix 1)

- Applied**

A questionnaire (Appendix 2) with 25 questions was distributed to 31 pupils in the English sciences program for the elementary stage at the Talae El Mostakbal language school – El Sharabia administration and the questionnaire findings were then statistically analyzed. (Appendix 3).

The descriptive analytical approach was utilized to create the study tools, which

consisted of a questionnaire on cat and dog illnesses and prevention strategies.

The questionnaire has three axes: yes, maybe, and no. The SPSS application was used to do statistical analysis on the questionnaire, including arithmetic means, standard deviations, and T-test results. will be examined by the end of the research. The research method means the method the researcher will use in gathering and analysing data; and the research tools the researcher will use in gathering data e.g., Questionnaires, interviews, notes and remarks, experiments and field studies...etc. It also includes the methods used in analysing data e.g., statistical analysis, laboratory analysis, qualitative analysis and cartographic analysis.

Practical difficulties encountered in the research?

How to simplify information in explaining diseases that affect pets to make it easier for children to understand.

Helping students to realize the necessary precautions and adequate awareness to prevent these diseases.

4. Results of Research

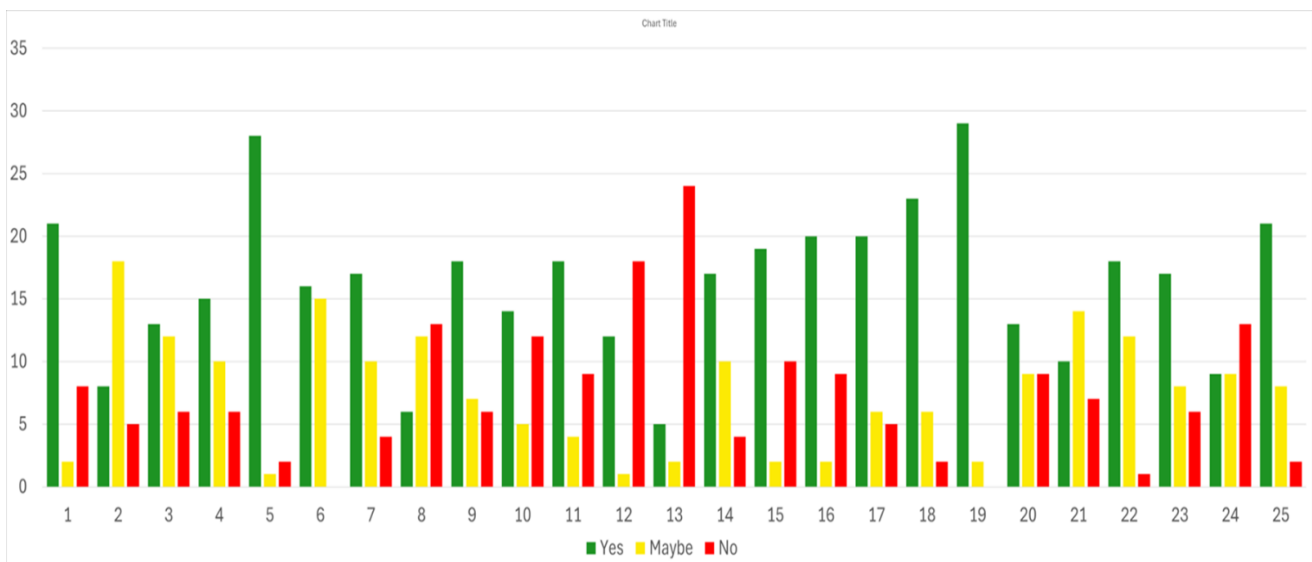


Figure (1): Histogram showing the relation between the questionnaire items and students' responses.

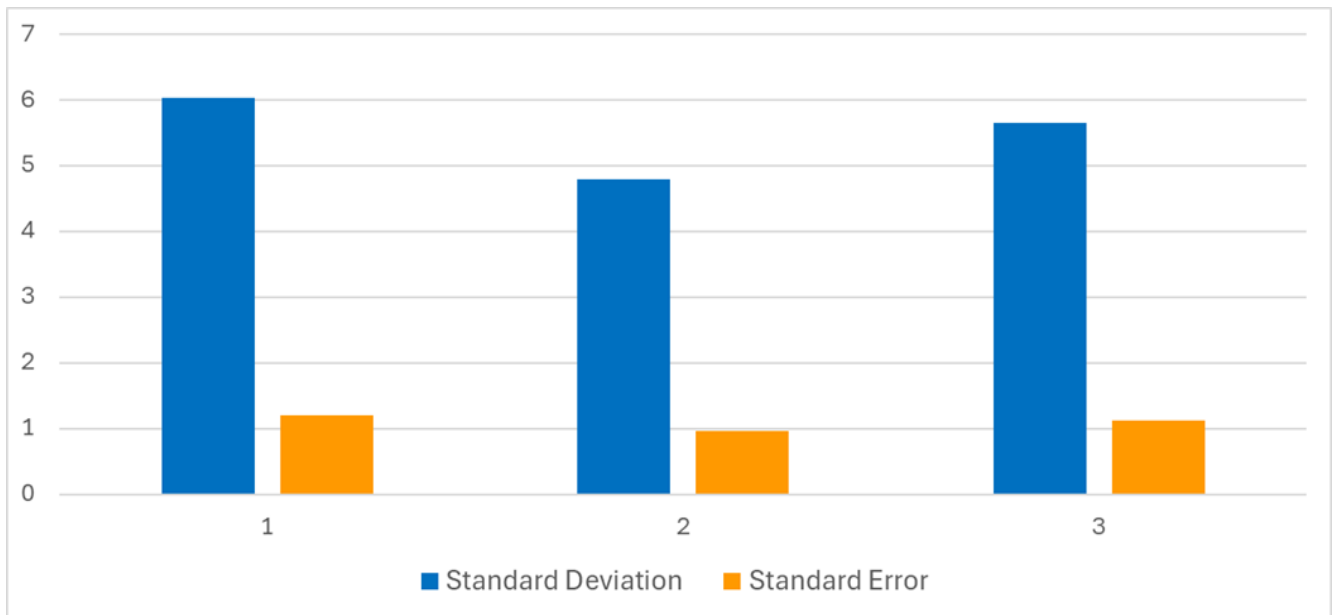


Figure (2): Histogram showing the relationship between Standard Deviation and Standard Error.

Table 2: Results of Student's Responses

Q.Items	SMA	Mediator	Standard Deviation	Standard Error	T- test
Yes	16.28	17	6.038211656	1.207642331	8.13E-07
Maybe	7.48	8	4.796873982	0.959374796	
No	7.24	6	5.65154846	1.130309692	

5. Interpretation of Results

-Relation between the questionnaire items and students' responses:

Results presented in Table 1 and illustrated in Fig. (1) demonstrated that:

- The results show that the Highest percentage answer for (Question No. 05) was Yes.
- The results show that the Highest percentage answer for (Question No. 19) was Yes.
- The results show that the Highest percentage answer for (Question No. 25) was Yes.
- The results show that the Highest percentage answer for (Question No. 02) was Maybe.

•The results show that the Highest percentage answer for (Question No. 07) was Maybe.

•The results show that the Highest percentage answer for (Question No. 13) was No.

•The results show that the Highest percentage answer for (Question No. 24) was No.

-Relation between Standard Deviation and Standard Error:

•The data presented in Fig. 2 and Table 2 showed that the total number of standard deviations is 6.0382, 4.7968 and 5.6515 sequentially. And showed that the total

number of standard errors is 1.2076, 0.9594, and 1.1303 sequentially.

- The results in Table (2) reveal that the SMA is 16.28, 7.48, and 7.24 sequentially. And shown that the mediator is 17, 8, and 6 sequentially.

Through the questionnaire, videos, and discussions on the research topic, most students agreed that the study would be useful because it raises awareness by providing new information about diseases caused by pets and how to take appropriate medical precautions.

6. Conclusion

Children's knowledge of the diseases that affect cats and dogs from a young age positively affects the child's personality and contributes a major role to the environmental development of society and reducing the spread of these diseases in the long term, considering that today's children are the youth of the future, and indeed the children interacted with the research topic through the questionnaire. : They have become very familiar with diseases and their harms and have a degree of awareness of necessary precautions.

7. Recommendations

We recommend distributing more banners, promotional materials, and educational materials about personal hygiene while dealing with any pets in schools and clubs where children gather to increase their awareness.

8. Identify future research points

- Educating children about the benefits and harms of using social media.
- Spreading awareness among children about the value of healthy eating and its impact on public health.
- Children's contribution to environmental awareness

9. Acknowledgement

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تنمية وعي الأطفال بالأمراض التي تسببها القطط والكلاب

اسماء الطلاب : إسرائ أشرف محمد ، إسرائ طارق محمد ، جنة وائل خليل ، رحمة محمود عبد المنعم ، روان خالد محمد ، نورهان سعيد خلف ،
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المخلص العربي

يهدف هذا المشروع إلى توعية الطلاب، وخاصة في مرحلة التعليم الأساسي، حول الأمراض التي يمكن أن تنتقل عن طريق القطط والكلاب التي يتم اقتناؤها عادة كحيوانات أليفة، وإكسابهم المهارات العملية من خلال توزيع الاستبيانات وتسهيل المناقشات حول هذا الموضوع. ومن الضروري تثقيف الأطفال حول المخاطر الصحية المحتملة المرتبطة بهذه الحيوانات لضمان سلامتهم ورفاهيتهم. ولتحقيق هذا الهدف، قمنا بإنشاء منتدى مفتوح للأطفال لطرح الأسئلة والتعبير عن مخاوفهم والحصول على معلومات دقيقة. ومن خلال توظيف هذه الاستراتيجيات، يمكننا مساعدة الأطفال على تطوير الفهم الصحيح للأمراض التي يمكن أن تنتقل عن طريق القطط والكلاب، وكذلك العادات والممارسات الصحيحة للتعامل معها. تتطلب تربية القطط والكلاب الشعور بالمسؤولية والوعي، حيث يمكن أن يكون لها تأثير إيجابي على تنمية شخصية الطفل، وتقليل خطر الإصابة بالتوحد والتوتر، وإضفاء السعادة على حياتهم. ولذلك يحتاج الأطفال إلى الحفاظ على العادات الصحية الجيدة، وتجنب الأمراض، وفهم طرق الوقاية المختلفة، مما يساعد على تنشئة جيل جديد من الأفراد الواعين. سيكون شباب اليوم أصحاب حيوانات أليفة غداً، ويجب عليهم فهم مسؤوليات ملكية الحيوانات الأليفة لتجنب مشكلات الصحة العامة في المستقبل. ونتيجة لذلك، يهدف البحث إلى تعليم الأطفال كيفية رعاية حيواناتهم الأليفة دون المخاطرة بانتشار الأمراض إلى الحيوانات أو الأشخاص الآخرين. يمكن للأطفال أن يكونوا بمثابة "رسل صحة" في منازلهم ومجتمعاتهم من خلال توفير الرعاية البيطرية المنتظمة والحفاظ على نظافة جيدة لحيواناتهم الأليفة. إن إظهار قيمة هذه السلوكيات في الوقاية من الأمراض سوف يغرس في الأطفال تقديراً لصحة الحيوانات الأليفة.

Appendix

- Appendix (1): Presentation on pet awareness made to students at the school :

Awareness of pets



Cat scratching

- Symptoms of cat fever are swelling or ulcers at the site of scratching, fever of the lymph nodes, infection, inflammation of the joints and joints, fatigue, and diarrhea. To clean cats in some indirect cases after infection with *Bartonella henselae*.

Awareness

- Wash the scratch or bite site well with soap and water.
- Take pain relievers, Do not harm or provoke animals Covering wounds or scratches.



Rabies

- Resulting from the bite of an animal infected with the rabies virus.
- It affects the central nervous system, and the disease causes fever, headache, and weakness, and it may develop into more severe forms, such as hallucinations, complete or partial paralysis, insomnia, and anxiety, and death may usually occur within days.

Awareness

- It is best to avoid getting close to unknown or wild dogs and avoid touching sick dogs. Also, if you are bitten by a dog, wash the wound with soap and water and get medical treatment as soon as possible.



Scabies

- Symptoms of Scabies include severe itching, rash, dandruff in the affected area, hair loss, or crusty mange.

Awareness

- To prevent mange in cats and dogs, it is recommended to clean the areas where animals live regularly and pay attention to their cleanliness and general health. Also, it is a good idea to provide a clean and healthy environment for animals and avoid close contact with animals infected with mange.



Pasteurellosis

- Pasteurella symptoms include swelling, redness, pain, and warmth of the skin. “Pasteurella infection can be transmitted to humans through direct and indirect contact, such as dogs or cats, and such as bites or even cat scratches.

Awareness

To prevent pasteurellosis in cats and dogs, it is important to vaccinate pets regularly and according to the schedule recommended by your veterinarian. Also, it is recommended to avoid close contact with sick animals and pay attention to the cleanliness of the environment in which the animals live.



Ringworm

- Ringworm is a skin disease whose symptoms include itching and red rash. It can be caused by a pet touching a wound or surfaces touched by a sick dog or cat.

Awareness

- Check your pets regularly: Check your pets regularly for signs of ringworm, especially if they show any skin symptoms.
- Isolating infected animals:
- Isolate infected animals: If your pet is diagnosed with ringworm, isolate it from other animals in the home.
- Restricting the movement of the animal: Restrict the movement of the infected animal to prevent the spread of infection.
- Cleaning animal areas: Regularly clean and sterilize areas where infected animals are.



Toxoplasmosis of domestic cats

- The parasite called Toxoplasma is transmitted to humans via feces in an infected cat's litter box or contaminated soil and can be especially dangerous to an unborn child. If a woman becomes infected with this parasite during pregnancy, it may cause birth defects in the fetus. Toxoplasmosis causes flu-like symptoms that usually go away within a few weeks, but the parasite can live in the body. You may recover without treatment, or your doctor can prescribe medications such as pyrimethamine, sulfadiazine, and folic acid.



Awareness

- Wear hand gloves Wash hands after cleaning cat litter.
- Pregnant women and people with immune problems should stay away from cat litter boxes.

How to deal with pets

- We must feed our animals regularly and provide them with water, food, and shelter from heat, cold, and rain. Proper medical care must be provided, including vaccinations, and sterilization, and not less importantly - we must love and care for them. Since an animal is a living being and has feelings and love. If we give the animal love, it will give us love again and again.
1. Paying attention to physical hygiene; To prevent the spread of diseases and infections.
 2. Giving animals all the necessary vaccinations for their safety and the safety of family members.
 3. Periodic examination of the pet, especially in case of fatigue.
 4. Playing with the pet and taking a walk with it.
 5. Pay attention to the food provided to him and ensure the cleanliness of the tools he uses.
 6. Train him to implement some simple, good commands.



- Appendix (2): Questionnaire made to students at the school :



Questionnaire of Diseases Caused by Cats and Dogs

Name	
Age	
Grade	
Gender:	<input type="checkbox"/> Male / <input type="checkbox"/> Female

No.	Questionnaire Items	Yes	Maybe	No
1	Have you raised a cat, a dog, or both?			
2	Do you regularly vaccinate your cat or dog?			
3	Do you notice symptoms affecting your cat or dog, such as vomiting and emaciation?			
4	Do you know the common diseases that affect cats and dogs?			
5	Do you make sure to clean your pet's litter boxes regularly?			
6	Do you think cat and dog owners care about the health of their animals?			
7	Did you know that cats and dogs carry internal and external parasites?			
8	Do you think the cost of veterinary care is high?			
9	Did you ever know that a cat sleeping next to you gives you the disease (toxycosis)?			
10	Did you know that cats and dogs should not be shared with children who are not less than 5 years old?			
11	Did you know that cats and dogs infect children and newborns with allergies that may lead to death?			

12	Did you know that a child who has a cat has a weak immune system??			
13	Did you know that cats and dogs should not be shared with people over the age of 65?			
14	Do you adhere to the medical courses and vaccinations for your cat or dog?			
15	Do you use protective measures such as gloves when handling pets?			
16	Did you know that red, itchy eyes are a sign that children have an infection from cats or dogs?			
17	Do you have information about the correct ways to wash hands after touching pets?			
18	Did you know that vaccinating cats and dogs reduces the transmission of parasitic diseases to children?			
19	Should awareness be increased in schools about diseases transmitted to children from cats and dogs?			
20	Did you know that the rate of children becoming infected with parasitic diseases is increasing due to cats and dogs?			
21	Do you think there is sufficient awareness about the importance of social responsibility in raising pets in Egypt?			
22	Are you satisfied with the role of the media in raising awareness about diseases transmitted by cats and dogs?			
23	Are you satisfied with the financial support provided by the government for veterinary care for pets?			
24	Do you agree to let cats and dogs live with children?			
25	Did you benefit from the content of the questionnaire?			



- Appendix (3):

Table 1: The graphical survey shows the result of the statistical analysis of the questionnaire.

Number	Yes	Maybe	No
1	21	2	8
2	8	18	5
3	13	12	6
4	15	10	6
5	28	1	2
6	16	15	0
7	17	10	4
8	6	12	13
9	18	7	6
10	14	5	12
11	18	4	9
12	12	1	18
13	5	2	24
14	17	10	4
15	19	2	10
16	20	2	9
17	20	6	5
18	23	6	2
19	29	2	0
20	13	9	9
21	10	14	7
22	18	12	1
23	17	8	6
24	9	9	13
25	21	8	2

SMA	16.28	7.48	7.24
Mediator	17	8	6
Most Frequent	17	2	6
Standard Deviation	6.038211656	4.796873982	5.65154846
Standard Error	1.207642331	0.959374796	1.130309692
T- test	8.13054E-07		