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ORIGINAL

# Community Awareness of Household Pets Breeding in Zoonotic Diseases Transmission

## Concientización comunitaria sobre la reproducción de animales domésticos y la transmisión de enfermedades zoonóticas

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## ABSTRACT

**Introduction:** zoonotic infections are a significant and growing global public health concern. Among the different modes of transmission, family pets serve as a primary source of human exposure to a wide range of infections.
**Objective:** to assess population awareness of zoonotic diseases transmitted by pets.
**Method:** a cross-sectional, descriptive, and correlational study was undertaken. The study has 600 participants. The data was gathered using a standardized questionnaire. The questionnaire had a total of 19 questions; sociodemographic data included 5 questions, 11 questions for awareness, and 3 questions for perception.
**Result:** the study was completed by a total of 600 participants. The majority of participants were female (69,8 %, n=419) and aged between 12-26 years (77,0 %, n=462), with an average age of 24,3 (±4,8) years. The majority of respondents were from Riyadh (64,5 %, n=387). Health professionals were much more aware than non-health professionals (76,8 % vs. 65,4 %, p<0,05). Postgraduates were more aware than individuals with primary or middle school education (97,0 % vs. 66,7 %, p < 0,05). Only 49,8 % of participants were categorized as “aware” overall, indicating a significant knowledge gap in the public. A study of preventative behaviors found that individuals who were aware of zoonotic dangers were more likely to provide veterinarian treatment for their dogs (p=0,001).
**Conclusion:** this study emphasizes the importance of increased education, interdisciplinary teamwork, and public health activities in reducing zoonotic hazards linked with domestic pets. By bridging information gaps, we can preserve both human and animal health, encouraging safer and more informed pet ownership behaviors.

**Keywords:** Awareness; Household; Pets; Zoonotic Diseases.

**RESUMEN**

**Introducción:** las infecciones zoonóticas constituyen un problema de salud pública mundial significativo y creciente. Entre los diferentes modos de transmisión, las mascotas constituyen la principal fuente de exposición humana a una amplia gama de infecciones.
Objetivo: Evaluar el conocimiento de la población sobre las enfermedades zoonóticas transmitidas por mascotas.
**Método:** se realizó un estudio transversal, descriptivo y correlacional con 600 participantes. Los datos se recopilaron mediante un cuestionario estandarizado. El cuestionario constaba de 19 preguntas; 5 de datos sociodemográficos, 11 de conciencia y 3 de percepción.
**Resultado:** el estudio fue completado por un total de 600 participantes. La mayoría de los participantes eran mujeres (69,8 %, n = 419) y tenían entre 12 y 26 años (77,0 %, n = 462), con una edad promedio de 24,3 (± 4,8) años. La mayoría de los encuestados eran de Riad (64,5 %, n = 387). Los profesionales de la salud mostraron una mayor concienciación que los profesionales no sanitarios (76,8 % frente a 65,4 %, p < 0,05). Los estudiantes de posgrado mostraron una mayor concienciación que las personas con educación primaria o secundaria (97,0 % frente a 66,7 %, p < 0,05). Solo el 49,8 % de los participantes se clasificaron como "conscientes" en general, lo que indica una importante brecha de conocimiento en la población. Un estudio sobre comportamientos preventivos reveló que las personas conscientes de los peligros zoonóticos eran considerablemente más propensas a brindar tratamiento veterinario a sus perros (p = 0,001).
**Conclusión:** este estudio enfatiza la importancia de una mayor educación, trabajo en equipo interdisciplinario y actividades de salud pública para reducir los riesgos zoonóticos relacionados con las mascotas domésticas. Al reducir la brecha de información, podemos preservar la salud humana y animal, fomentando comportamientos más seguros e informados en la tenencia de mascotas.

**Palabras clave:** Concienciación; Hogar; Mascotas; Enfermedades Zoonóticas.

## INTRODUCTION

Zoonotic infections are those that can be transmitted from animals to humans and offer serious health concerns to individuals who are exposed. The spread of zoonosis and its consequences for human health are a major worry around the world such as Brucellosis, rabies, African trypanosomiasis, bovine tuberculosis, cysticercosis, echinococcosis, and anthrax which are the most serious endemic zoonotic illnesses. In developing countries, they endanger human health, particularly in communities that domesticate and breed animals for food and clothing. Globally, zoonotic illnesses could have an impact on food security.[1]

Individual human actions that influence zoonotic infections have become more widely recognized in recent years as sources of exposure to zoonotic organisms. These elements are frequently the outcome of globalization and the ease of international travel. Zoonoses account for a large proportion (60,3 %) of newly emerging infectious illnesses. Population growth and socioeconomic changes are two major elements that can influence the movement of populations into new places as well as the adjustment of animal management activities, all of which influence the prevalence of diseases and associated difficulties. Furthermore, higher-quality diagnostics imply that certain zoonoses will have a greater impact than reported in prior data.[2]

The function of family pets in the spread of diseases cannot be underestimated. Pets, such as dogs, cats, rodents, and birds, operate as reservoirs for a variety of diseases, including bacteria (e.g., Salmonella, Campylobacter), parasites (e.g., *Toxoplasma gondii*, Giardia), and fungi (e.g., Dermatophytes).[3] Despite an increase in pet ownership, public understanding of zoonotic dangers remains poor, resulting in preventable diseases.[4]

The human-animal link has become stronger over time, with pets being more incorporated into family life. However, close relationships with pets, such as sleeping with them, sharing meals, or practicing poor hand hygiene, increase the risk of zoonotic diseases.[5] For example, cats are the principal carriers of *Toxoplasma gondii*, which can cause serious difficulties in pregnant women and immunocompromised people.[6] Dogs can transmit Campylobacter and Salmonella, causing gastrointestinal problems.[4] Reptiles and rodents are known reservoirs for Salmonella and Leptospira, providing dangers to youngsters and immunocompromised people.[7] Despite these hazards, many pet owners are uninformed of zoonotic transmission routes or underestimate their severity.[8] Stull et al.[4] discovered that just 26 % of pet owners remembered getting zoonotic illness information from veterinarians, indicating a serious gap in public health communication. This study explores community awareness of zoonotic disease transmission via domestic pets, identifies knowledge gaps, and proposes methods

to lower risks.

## METHOD

### Study design

A cross-sectional, descriptive, and correlational study was provided that focused on community awareness of home pet breeding and its role in zoonotic disease transmission.

*Sampling*

Random sampling technique was used during the data collection period (December 2024 to March 2025), The questionnaire had a total of 19 questions; sociodemographic data included 5 quest the research population included individuals from all regions of the Kingdom of Saudi Arabia. The study had 600 participants (69,8 % female and 30,2 % male). The data was gathered using a standardized questionnaire, 11 questions for awareness, and 3 questions for perception. The questionnaire was designed by two professors and reviewed by a statistics professor. Statisticians worked with experts in the field to make sure the questions are clear and relevant. also conducted a preliminary test with a group similar to you to confirm that:

- The questions are easy to understand.
- The questionnaire consistently measures what it is designed to measure.
- The results it produces are accurate and trustworthy.
- The statistical analysis from our tests confirmed that this is a reliable and valid tool for this study.

### Ethical approval

For ethical approval, an informed permission was added to clarify the goal of the questionnaire, safeguard the confidentiality of the information, and limit its use to scientific research reasons, provided that each participant agrees before beginning to fill out the questionnaire.

### Data analysis

The data was examined with SPSS version 24. Data analysis. Depending on the types of variables, descriptive statistics were used to tabulate and describe the data (frequency distribution, percentages, means and standard deviations), and inferential statistics (Chi Square) were used to examine the association between categorical variables, and Odds Ratio (OR) were calculated to determine the effect of awareness levels on the participants' practices. The awareness variables were composite to summarize the overall participant's awareness about zoonotic diseases whose agent is transmissible between pets and humans, and was calculated by adding up the score for each of the questions. The maximum possible score was 7 points, and scores were dichotomized by using the mean as the cutoff point. The tests were carried out at 95 % confidence interval, p values less than 0,05 were considered significant, and OR with 95 % confidence interval was used to determine the presence and degree of correlation between participants' level of awareness and their practices.

## RESULTS

This study included 600 participants. The average age was 24,3 ± 4,8 years, with the majority (77,0 %) falling between 12 and 26 years. The majority of participants were female (69,8 %). The proportion of participants by education level Among the study participants, 5,5 % had a middle or lower level of education, 20,0 % had completed high school, and 74,3 % held a bachelor's degree or higher. Geographically, 64,5 % of participants lived in Riyadh, with the Eastern Region coming in second (16,0 %). 43,7 % of research participants kept and raised pets. 44,5 % of participants worked as health professionals (table 1).

The awareness of diseases transferred from pets to people was high among study participants from all represented areas, with no significant difference in awareness levels across individuals from all areas ($p > 0,05$) (table 2).

In terms of awareness of diseases transmitted from pets to humans among study participants based on their education level, gender, and profession as health professionals, it was discovered that participants with higher education levels (high school and above) had a higher level of awareness than those with intermediate and primary education levels. Males were more aware than females, and health professionals had greater awareness levels than non-health professionals, with a statistically significant difference ($p < 0,05$). Pet owners demonstrated significantly higher levels of awareness compared to non-pet owners ($p < 0,05$).

The survey of participants shows 49,8 % were aware of diseases that can be transferred from animals to people, such as Rabies (61,9 %), Toxoplasmosis (34,6 %), Salmonella (18,8 %), Avian Chlamydia (13,4 %), and Mycobacterium (12,1 %) (table 3).

Furthermore, 19,1 % understood that Toxoplasmosis can induce miscarriage in women. There was a significant difference in frequency between individuals who knew the disease but did not understand how it was transmitted (p-value < 0,05).

Regarding the prevalence of infections transmitted from pets to humans and miscarriages induced by toxoplasmosis among female participants, the result shows that 13,2 % of pet owners have contracted infections from their pets, and 1,7 % of women who own and raise pets have experienced miscarriage due to toxoplasmosis (figure 1).

The findings show that pet owners with a high level of understanding of zoonotic illnesses that can be transmitted between pets and humans are 3,7 times more likely to provide veterinary care to their pets at the household level than those with low awareness levels [OR, 3,7; 95 %CI, 2,03 - 6,90] (table 4).

In terms of the primary source of information on pet health and diseases that can be transmitted between pets and humans, 41,8 % of study participants reported using the internet, followed by veterinarians (16,5 %), friends (8,8 %), and curriculum (2,4 %). Surprisingly, 1 % of respondents stated that their source of information was television (table 5).

The results show that (27,8 %) of pet owners with high awareness levels of diseases transmitted from pets to humans provided veterinary care to their pets, whereas (72,2 %) of pet owners with low awareness levels of diseases transmitted from pets to humans did not (figure 2).

Regarding the preventive measures followed by participants when dealing with their pets, the results in table 6 showed that 41,9 % of those who are aware of zoonotic diseases that are transmissible between pets and humans used periodic checks as preventive measures, followed by cleaning the surrounding environment (8,8 %), cleaning the surrounding environment (2,4 %), washing hands after handling the animals (1,0), and washing hands after handling animals, periodic examinations (0 However, following these preventive measures was substantially associated with level of awareness of zoonotic illnesses transmissible between pets and humans (p-value <0,05) (table 6).

**Table 1** Socio-demographic characteristics of the study participants in questionnaire (n=600)

| Variables | No. | % |
|---|---|---|
| **Geographical area** | | |
| • Riyadh | 387 | 64,5 |
| • Makkah Al-Mukarramah | 19 | 3,2 |
| • Al-Madinah Al-Munawwarah | 14 | 2,3 |
| • Al-Qassim | 20 | 3,3 |
| • Eastern Region | 96 | 16,0 |
| • Asser Region | 20 | 3,3 |
| • Tabuk | 5 | 0,8 |
| • Hail | 5 | 0,8 |
| • Northern Border region | 12 | 2,0 |
| • Gazan | 21 | 3,5 |
| Education level | | |
| • Primary | 3 | 0,5 |
| • Middle | 30 | 5,0 |
| • High school | 120 | 20,0 |
| • University | 413 | 68,8 |
| • Postgraduate | 33 | 5,5 |
| Age group | | |
| • 12- 26 years | 462 | 77,0 |
| • 27 – 42 years | 104 | 17,3 |
| • >43 years | 33 | 5,5 |
| Gender | | |
| • Female | 419 | 69,8 |
| • Male | 180 | 30,2 |
| Owning and raising pets | | |
| • No | 337 | 56,2 |
| • Yes | 262 | 43,7 |
| Working as Health Professional | | |
| • No | 332 | 55,3 |
| • Yes | 267 | 44,5 |

**Note:** Mean age of the respondents = (24,3±4,8) years

**Table 2.** Awareness of diseases transmitted by pets to human among 600 questionnaire participants according to their residence, Education level, age group, gender, profession and Owning and raising pets

| Variable | Category | Pets cause diseases to humans | | (No./%) of positive responses within the category |
|---|---|---|---|---|
| | | Yes (%) | No % | |
| Geographical area | • Riyadh | 279(46,6) | 108(18,0) | 279(72,1) |
| | • Makkah Al-Mukarramah | 12 (2,0) | 7(1,2) | 12 (63,2) |
| | • Al-Madinah Al-Munawwarah | 11(1,8) | 3(0,5) | 11(78,6) |
| | • Al-Qassim | 18(3,0) | 2(0,3) | 18(90,0) |
| | • Eastern Region | 57(9,5) | 39(6,5) | 57(59,4) |
| | • Assir Region | 14(2,3) | 6(1,0) | 14(70,0) |
| | • Tabuk | 5(0,8) | 0,0 | 5(100,0) |
| | • Hail | 4(0,7) | 1(0,2) | 4(80,0) |
| | • Northern Border region | 9(1,5) | 3(0,5) | 9(75,0) |
| | • Gazan | 13(2,2) | 8(1,3) | 13(61,9) |
| Education level * | • Primary | 2 (0,3) | 1 (0,2) | 2 (66,7) |
| | • Middle | 20 (3,3) | 10 (1,7) | 20 (66,7 |
| | • High school | 82 (13,7) | 38(6,3) | 82 (68,3) |
| | • University | 288(47,7) | 127(21,2) | 288(69,2) |
| | • Postgraduate | 32(5,3) | 1 (0,2) | 32(97,0) |
| Age group | • 12- 26 years | 322(53,8) | 140(23,4) | 322(69,7) |
| | • 27 – 42 years | 74(12,4) | 30(5,0) | 74(74,2) |
| | • >43 years | 26(4,3) | 7 (1,2) | 26(78,8) |
| Gender* | • Female | 295(49,2) | 124(20,7) | 295(70,4) |
| | • Male | 127(21,2) | 53(8,8) | 127(70,6) |
| Owning and raising pets | • No | 243(40,6) | 94(15,7) | 243(71,2) |
| | • Yes | 179(29,9) | 83(13,9) | 179(68,3) |
| Working as Health Professional* | • No | 217(36,2) | 115(19,2) | 217(65,4) |
| | • Yes | 205(34,2) | 62(10,4) | 205(76,8) |

**Note**: Percentage (no.) of positive responses. Percentage calculated from the total number of participants (n=600). *Statistically significant difference to the frequency value of negative responses

**Table 3.** Awareness of zoonotic diseases whose agent is transmissible between pets and human (N=600) of questionnaire participants

| Disease | Zoonotic diseases whose agent is transmissible between pets and human | | P -valuve |
|---|---|---|---|
| | No | Yes % | |
| Toxoplasmosis | 207 | 34,6 | 0,001 |
| Rabies | 371 | 61,9 | 0,001 |
| Mycobacterium | 72 | 12,1 | 0,001 |
| Avian chlamydia | 80 | 13,4 | 0,001 |
| Salmonella | 112 | 18,8 | 0,001 |
| Toxoplasmosis cause miscarriage in women | 114 | 19,1 | 0,001 |
| Overall level of awareness | | | |
| Aware ¥ | 131 | 49,8 | 0,010 |
| Unaware | 48 | 18,3 | |

**Note**: *Statistically significant difference to the frequency value of those whose know the disease but they don't know how it can be transmitted

A composite variable was generated to summarize the overall participant's awareness about zoonotic diseases whose agent is transmissible between pets and human and was calculated by adding up the score for each of all the questions, and the maximum possible score was 7 points and scores were dichotomized by using the mean as cutoff point (< 2,98 considered unaware and >2,98 considered aware)

¥38,3 % of the study participants were aware of the diseases transmitted by pets and had an intention to own pets.

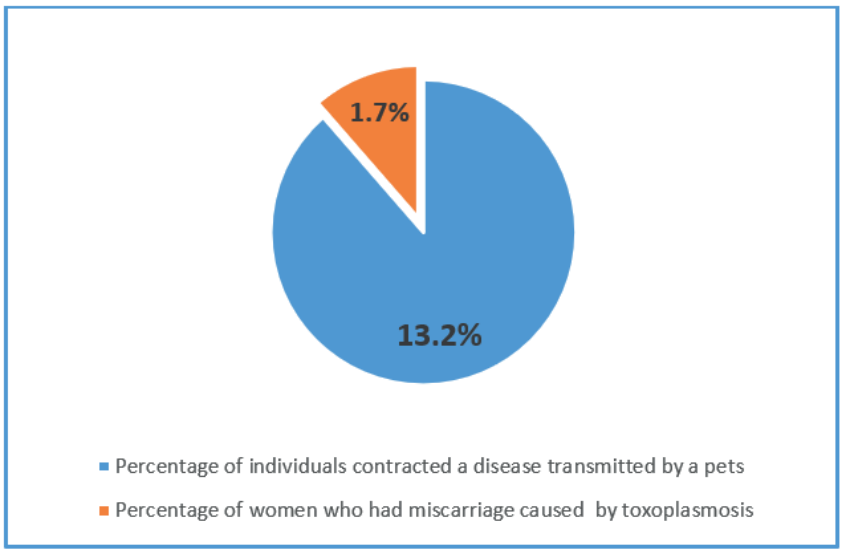


**Figure 1.** Prevalence of diseases that transmitted from pets to human and miscarriage caused by toxoplasmosis among female questionnaire participants

**Table 4.** The association of awareness level as predictor of providing veterinary care to the pets at household questionnaire participants

| Veterinary care | Awareness level | | X2 | p-value | Odds Ratio (95 % CI) | Ƞ |
|---|---|---|---|---|---|---|
| | unaware | aware | | | | |
| • No | 101(38,4) | 88(33,8) | 19,02 | 0,001 | 3,7 (2,03-6,90) | 0,27 |
| • Yes | 17(6,5) | 56(21,3) | | | | |

**Table 5.** Source of information about pet health and common diseases among participants aware of about pets cause diseases to human obtained from questionnaire

| Source of information about pet health and common diseases | Zoonotic diseases whose agent is transmissible between pets and human (Yes) |
|---|---|
| • Internet | 124 (41,8 %) |
| • Curriculum | 7 (2,4 %) |
| • Friends | 26 (8,8 %) |
| • Veterinary | 49 (16,5 %) |
| • Television | 3(1,0 %) |
| $X^2$ =15,5, p - value =0,008 | |

**Note**: *Statistically significant difference to the frequency value of those whose know the disease but they don't know how it can be transmitted

**Table 6.** Preventive measures adopted by questionnaire participants when dealing with their pet

| Preventive measures followed by participants when dealing with your pet | Zoonotic diseases whose agent is transmissible between pets and human | |
|---|---|---|
| | no | yes |
| Periodic checks | 49 (16,6 %) | 124 (41,9 %) |
| Cleaning the surrounding environment | 1 (0,3 %) | 7(2,4 %) |
| Cleaning the surrounding environment, periodic checks | 12 (4,1 %) | 26 (8,8 %) |
| All of the above | 13 (4,4 %) | 49 (16,6 %) |
| Wash hands after handling the animal | 9 (3,0 %) | 3 (1,0 %) |
| Washing hands after handling animals, periodic examinations | 1 (0,3 %) | 2 (0,7 %) |
| Total | 85 (28,7 %) | 211(71,3 %) |
| $X^2$ =15,6, p - value =0,014 | | |

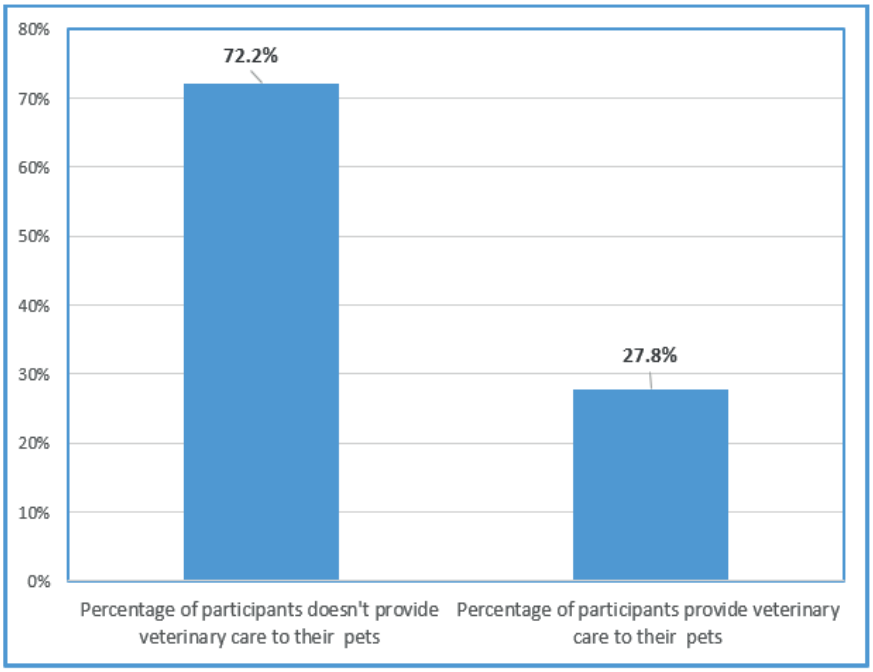


**Figure 2.** Percentage of questionnaire participants who provide veterinary care to their pets

**Table 7.** Preventive measures adopted by questionnaire participants when dealing with their pet

| Preventive measures followed by participants when dealing with your pet | Zoonotic diseases whose agent is transmissible between pets and human | |
|---|---|---|
| | no | yes |
| Periodic checks | 49 (16,6 %) | 124 (41,9 %) |
| Cleaning the surrounding environment | 1 (0,3 %) | 7(2,4 %) |
| Cleaning the surrounding environment, periodic checks | 12 (4,1 %) | 26 (8,8 %) |
| All of the above | 13 (4,4 %) | 49 (16,6 %) |
| Wash hands after handling the animal | 9 (3,0 %) | 3 (1,0 %) |
| Washing hands after handling animals, periodic examinations | 1 (0,3 %) | 2 (0,7 %) |
| Total | 85 (28,7 %) | 211(71,3 %) |
| $X^2$ =15,6, p - value =0,014 | | |

## DISCUSSION

This study provides an important assessment of population awareness about zoonotic diseases spread by domestic pets in a large Saudi cohort. The main result is that, while there is a basic degree of awareness, there are large and potentially dangerous gaps in information, particularly about certain diseases and their serious repercussions.

In the present study fewer than half of participants were aware that pets can spread diseases to people. This statistic is alarming and underscores the urgent need for targeted educational campaigns by veterinarians and public health officials to promote safe pet ownership, although these findings consistent with findings from research in New Zealand and Europe has revealed moderate knowledge levels, frequently hanging around 50-60 %, indicating a global issue in public health communication about zoonotic dangers.[4,9]

According to this study, working as a health professional was an important and statistically significant predictor of increased awareness in present study. This is an expected yet critical discovery, since it emphasizes the importance of professional medical and scientific knowledge in comprehending health risks. It is congruent with research by Wright et al.[8], who discovered that veterinarians and physicians have higher understanding of zoonoses than the general public. Furthermore, awareness demonstrated a clear positive link with education level, with nearly all postgraduates (97,0 %) being aware. This tendency has been observed worldwide, highlighting education as a significant strategy for boosting public health literacy.[10] Interestingly, pet ownership did not significantly increase awareness, implying that experience alone is insufficient to convey information about zoonotic dangers, a finding that is consistent with earlier research found same result.[11] Good education,

the fourth goal of the Sustainable Development Goals (SDG4), improves quality of life and is consistent with raising pets in such a way that they are a source of happiness and delight rather than a means of transferring diseases.

The discrepancy in disease awareness highlights major public health vulnerabilities. This is a particularly worrisome information gap since toxoplasmosis is a serious threat to fetal development. This conclusion is comparable with research among pregnant women in other countries by Robert et al., which have found insufficient understanding regarding toxoplasmosis prophylaxis.[12]

Low awareness in in certain infectious diseases was observed in the present study. These findings indicate that public health initiatives have been successful in raising awareness of high-profile diseases such as rabies while ignoring other equally critical pathogens. Other research have reported same "selective awareness" tendency, highlighting the need for more broad educational activities.[13]

The source of knowledge of participants' awareness were variable. This emphasizes the essential need for health authorities and educational institutions to create and disseminate accurate, interesting, and widely accessible digital content on zoonotic disease prevention this outcome similar to those found by Khorram-Manesh et al.[14]

In this study there is the strong positive relationship between awareness and proactive pet ownership practices. This is consistent with the Health Belief Model, which states that the perceived susceptibility and severity of a health hazard are important drivers of preventive activity,[15] also achieves the third Sustainable Development Goal (SDG3): good health and well-being. Furthermore, informed pet owners were substantially more likely to implement a mix of preventive actions, such as regular veterinary examinations and environmental cleaning.

## LIMITATIONS

The study has limitations. The sample, while large, was primarily young, female, and from Riyadh, which may restrict the findings' generalizability to the broader Saudi population. An online survey could have selection bias, perhaps oversampling people with greater education and internet access. Additionally, self-reported data on awareness and habits are susceptible to social desirability bias.

## CONCLUSION

It has been concluded that, this study indicated a moderate level of general awareness but significant gaps in specialized knowledge concerning zoonotic illnesses in Saudi Arabia, particularly considering dangers to vulnerable populations. The substantial link between awareness, education, and profession reveals clear paths for action.

## REFERENCES

1. Day MJ, Horzinek MC, Schultz RD, Squires RA; Vaccination Guidelines Group (VGG) of the World Small Animal Veterinary Association (WSAVA). WSAVA Guidelines for the vaccination of dogs and cats. J Small Anim Pract. 2016;57(1):E1-E45.

2. Dubey JP, Lago EG, Gennari SM, Su C, Jones JL. Toxoplasmosis in humans and animals in Brazil: high prevalence, high burden of disease, and epidemiology. Parasitology. 2012;139(11):1375-424.

3. Overgaauw PAM, Vinke CM, Hagen MAEV, Lipman LJA. A One Health Perspective on the Human-Companion Animal Relationship with Emphasis on Zoonotic Aspects. Int J Environ Res Public Health. 2020;17(11):3789.

4. Stull JW, Brophy J, Weese JS. Reducing the risk of pet-associated zoonotic infections. CMAJ. 2015;187(10):736-43. https://doi.org/10.1503/cmaj.141020

5. Mughini-Gras L, Enserink R, Friesema I, Heck M, van Duynhoven Y, van Pelt W. Risk factors for human salmonellosis originating from pigs, cattle, broiler chickens and egg laying hens: a combined case-control and source attribution analysis. PLoS One. 2014;9(2):e87933.

6. Hartmann K, Addie D, Belák S, Boucraut-Baralon C, Egberink H, Frymus T, et al. Toxoplasma gondii infection in cats: ABCD guidelines on prevention and management. J Feline Med Surg. 2013;15(7):631-7.

7. Heyworth MF. Parasitic Infections in Immunocompromised Hosts. Am J Med Sci. 2016;352(5):451-6.

8. Wright JG, Jung S, Holman RC, Marano NN, McQuiston JH. Infection control practices and zoonotic disease risks among veterinarians in the United States. J Am Vet Med Assoc. 2008;232(12):1863-72.

9. Forrest R, Awawdeh L, Pearson M, Waran N. Pet Ownership in Aotearoa New Zealand: A National Survey of Cat and Dog Owner Practices. Animals (Basel). 2023;13(4):631.

10. Hensley CG, Lungelow L, Henize AW, Klein MD, Xu Y, Kahn RS, et al. A Community Resource Liaison Embedded in Pediatric Primary Care Mitigates Social Risks through Identification and Connection. J Health Care Poor Underserved. 2021;32(4):2211-21.

11. Gemcioglu E, Erden A, Karabuga B, Davutoglu M, Ates I, Kücüksahin O, et al. False positivity of Rose Bengal test in patients with COVID-19: case series, uncontrolled longitudinal study. Sao Paulo Med J. 2020;138(6):561-2.

12. Roberts JO, Jones HF, Roe WD. The effects of Toxoplasma gondii on New Zealand wildlife: implications for conservation and management. Pac Conserv Biol. 2021;27:208-20.

13. Alotaibi KA. Perceived Credibility of Public Health Campaigns and Its Impact on Infection Control Behaviors: Mediating Roles of Health Literacy and Motivation. J Multidiscip Healthc. 2025;18:3153-63.

14. Khorram-Manesh A, Dulebenets MA, Goniewicz K. Implementing Public Health Strategies-The Need for Educational Initiatives: A Systematic Review. Int J Environ Res Public Health. 2021;18(11):5888.

15. Champion VL, Skinner CS. The health belief model. In: Glanz K, Rimer BK, Viswanath K, editors. Health behavior and health education: Theory, research, and practice. 4th ed. Jossey-Bass; 2008. p. 45-65.

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## CONFLICT OF INTEREST

Author declared that there is no conflict of interest in this research.

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