

Study on Cat Management Practices According to Owner's Economic Status at Chattogram Metropolitan Area



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List of Abbreviation

Abbreviation	Elaboration
ES	Economic Status
CVASU	Chattogram Veterinary and Animal Sciences University
χ^2	Pearson Chi-square symbol
Df	Degree of freedom
CI	Confidence Interval
Sig P – Value	Significant probability value
SAQTVH	S.A. Quaderi Teaching and Veterinary Hospital

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Abstract

The health and welfare of domestic cats are significantly influenced by the owner's economic status (ES), which affects access to veterinary services, preventive care, and proper nutrition. This study investigates the correlation between cat owners' economic status and their pets' vaccination, deworming, feeding habits, and health in Chattogram Metropolitan Area. Data were collected from 500 randomly selected cat owners through interviews and records. Primary and secondary collected from S.A. Quaderi Teaching and Veterinary Hospital, CVASU when owners came to hospital for getting veterinary care and treatment.

Higher economic status (ES) owners' cats received noticeably better care, according to analysis employing Pearson Chi-square tests. About 91.72% high class cat owner's received vaccination, while middle-class households received 56.04% and lower-class households obtained 4.8% ($P < 0.001$). In the same way, 82.06% of cat owners with high ES routinely dewormed their cats, compared to 33.69% and 2.43% of middle-class and lower ES owners, respectively ($P < 0.001$). Furthermore, 87.5% of owners with high ES offered balanced diets, but just 38.8% of middle ES and none of those with lower ES did.

The finding from the study with contribute to a better understanding of the economic determinants pet health. Future research should explore the effectiveness of affordable veterinary services and community education programs in mitigating the impact of economic disparities on animal welfare. The findings from this study will contribute to a better understanding of the economic determinants of pet health and offer evidence-based recommendations for improving veterinary care accessibility in Bangladesh.

Keywords: Pet owners, Economic status, Vaccination, Deworming, Feeding Practice, SAQTVH

Chapter 1: Introduction

The health and welfare of domestic animals, particularly companion animals like cats, are closely related to the owners' economic status (ES). Cats, being one of the most popular pets globally, require regular vaccination, deworming, and proper nutrition to maintain their well-being (Priunka Bhowmik, 2020). However, disparities in pet care practices often emerge due to variations in owners' financial and educational backgrounds. In developing countries, economic factors are particularly significant, as they determine access to veterinary services and the resources required for responsible pet ownership (Mpolya, Encouraging responsible dog ownership in Africa, 2019).

Bangladesh, where the domestic cat population is steadily increasing, offers a unique perspective on the relationship between ES and pet care practices. Despite of growing awareness of the importance of preventive veterinary care, such as vaccination and deworming, gaps remain in the equitable provision of these services across different economic groups (Paul & Gates, 2017). Low-income owners often face challenges in affording necessary treatments, while limited knowledge may reduce the perceived importance of such preventive measures (Amy Morris, 2019). These disparities can have far-reaching effects on the health status of cats, potentially leading to outbreaks of preventable diseases and an overall decline in animal welfare standards.

Previous studies have demonstrated that higher ES is associated with improved access to veterinary care, increased awareness of pet health, and better feeding practices (Aylin Kumcu, 2015). However, there is limited research exploring how these economic factors specifically affect vaccination, deworming practices, and nutrition in companion animals within the Bangladeshi context (Priunka Bhowmik, 2020). Understanding these relationships is crucial for developing targeted interventions that promote responsible pet ownership across all economic groups.

The current study aims to fill this gap by investigating the correlation between the economic status of cat owners and their pets' vaccination, feeding, and deworming practices in a Bangladeshi population. By examining 500 cat owners at the S.A. Quaderi Teaching and Veterinary Hospital, CVASU, this study provides an in-depth analysis of how income and education levels influence the healthcare practices and overall well-being of cats.

So the primary objectives of this study are to identify the income status of cat owner's and to find out relationship between cat owner's economic status and husbandry practices.

Chapter 2: Methodology

2.1 Study Location and Duration

The study was conducted at the Chattogram Veterinary and Animal Sciences University Hospital, with participants sourced from various areas of Chattogram Metropolitan City. The duration of the study spanned from January 2023 to April 2024.

2.2 Study Design

This study used purposive sampling technique to collect the data when cat owner's were came to S.A. Quaderi Teaching and Veterinary Hospital, CVASU for veterinary services.

2.3 Study Population

The study targeted a population of 500 cat owners visiting the S.A. Quaderi Teaching and Veterinary Hospital (SAQTVH), Chattogram Veterinary and Animal Sciences University (CVASU), for veterinary care. Participants were selected through random sampling to ensure a representative sample.

2.4 Participants or Samples

The participants in this study are the cat owners, where they are classified in to three groups to meet up this study's objectives, which is categorized into three distinct classifications such as high class, middle class and lower class at Chattogram Metropolitan Area. This categorization based on their occupation, monthly income and education.

2.4.1 The high-class group

This group is considered as the individuals who are mainly established as businessmen, first class government job holder, army and defense officers and foreigners at the study area and their monthly income exceeds or is equal to 90,000 BDT and who possess formal education.

2.4.2 The middle-class group

They are considered as the participant by the means of their occupations as likely as small business holder, government service holders and encompasses with a monthly income ranging from 45,000 to 50,000 BDT, who are also enlightened through formal education.

2.4.3 The lower-class group

The lower-class group is characterized by day laborer, street hawker or stall business holders who lives in a certain colony of Chattogram Metropolitan City and earning a monthly income

between 20,000 and 25,000 BDT and includes individuals without or very poor formal education.

2.5 Data Collection and sampling technique

Data collection for this study employed a comprehensive approach utilizing both primary and secondary data collection methods. Primary data were collected through structured interviews schedule from cat owners. This approach facilitated gathering detailed information regarding the owners' economic status and corresponding pet care practices. In addition, secondary data collection was conducted by analyzing hospital record sheets and database of S.A. Quaderi Teaching and Veterinary Hospital, CVASU, which provided supplementary data from January 2023 to December 2023. This dual-method strategy ensured a robust and well-rounded dataset, enhancing the validity of the findings.

2.6 Variables of this study

The independent variable in this study is the economic status of cat owners, which is categorized into three distinct classifications mentioned at ‘participants and samples’ section. They are high-class, middle class and low class groups. The dependent variables focus on key pet care practices, including vaccination status, which determines whether the cat has been vaccinated or not; deworming practices, indicating whether the cat has received deworming treatment or not; feeding practices, classified into three types such as readymade food, home-made food, and leftover foods, along with their respective feeding frequencies. In this study leftover foods stand for the foods remained after eating by their owners or family members specially fish thrones, bone of meat are considered according to the owners interview.

2.7 Data Analysis

The collected data were analyzed using Pearson Chi-square tests to assess the correlations between economic status and pet care practices. Statistical analyses were conducted using STATA (STATA, College Station, Texas, >> software).

Chapter 3: Result

3.1 Economic status of cat owner's

Out of the total 500 participants, 29% (145) were from a high class, 54.6% (273) represented the middle class, and only 16.4% (82) were from the lower class.

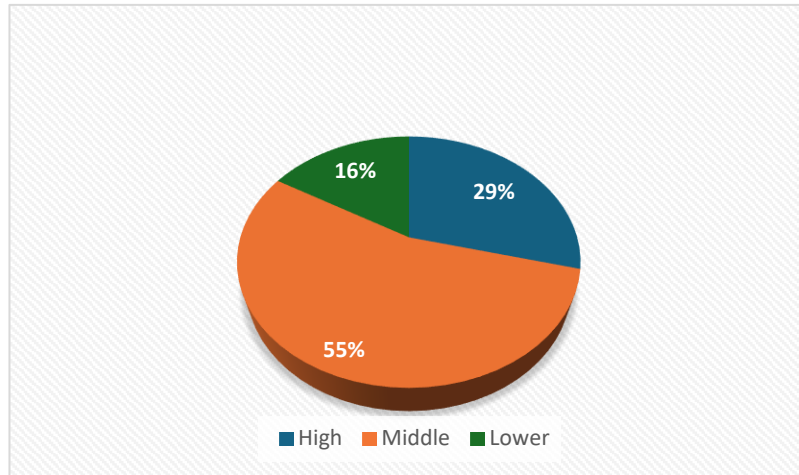


Fig: on Economic Status of Cat Owner's

2 Economic Status of Owner and Vaccination Practices

The economic status of cat owners significantly influenced the frequency of vaccination for their pets (Table 1). A striking 91.72% of high-class owner regularly vaccinated their cats, while only 56.04% of middle-class owners did the same. Among lower-class owners, a mere 4.8% ensured regular vaccinations. The result are highly statistically significant association between economic status and vaccination frequency ($\chi^2 = 163.11$, $p < 0.001$).

Table 1 Vaccination Practices according to owner's economic status

Economic Status	Vaccination Status	Frequency	percentage	P Value ($\chi^2 = 163.117$)
High Class	Yes	133	91.72	0.001
	No	12	8.28	
Middle Class	Yes	153	56.04	
	No	120	43.96	
Lower Class	Yes	4	4.8	
	No	78	95.2	
Total	Yes	290	58	
	No	210	42	

3.3 Economic Status and Feeding Practices

The findings highlight a significant correlation between the economic status of cat owners and the type of food they provide to their pets. Owners from different economic classes exhibited distinct feeding practices, which may reflect both their financial capacities and perceptions of cat nutrition.

3.3.1 For high-class owners:

A majority 87.5% chose to provide commercial, ready-made food to their cats. This preference likely stems from their greater financial resources, which allow them to invest in premium cat foods known for their nutritional balance and convenience. Interestingly, none of the high-class owners fed their cat's leftover food, which suggests that they may prioritize specially prepared meals for their pets rather than treating them as an extension of household waste management.

3.3.2 Middle-class owners

This study displayed more diverse feeding practices. While a substantial portion 61.2% also opted for commercial food, a significant number of middle-class owners (12.5%) prepared home-cooked meals for their pets. This indicates a potential balance between convenience and cost efficiency. The absence of leftover feeding practices among middle-class owners, similar to high-class owners, suggests an awareness of proper feeding methods, though it may also reflect aspirations to provide their pets with higher-quality food despite possible financial constraints.

3.3.3 Lower-class owners

The overwhelming majority 93.90% (77 out of 82) reported feeding their cats leftover food, likely due to limited financial means. Only a small percentage (6.09%) provided home-cooked meals, and none were able to afford commercial cat food. This reliance on leftover food highlights the challenges faced by lower-class owners in maintaining optimal pet care standards, as they might prioritize household needs over specialized pet food. Additionally, this practice may reflect a cultural attitude where cats are viewed more as utilitarian animals rather than companions requiring distinct nutrition.

The stark disparities in feeding practices between economic classes were highly statistically significant, as confirmed by the Pearson Chi-square test ($\chi^2 = 572.05$, $p < 0.001$).

Table 2 Feeding Practices according to owner's economic status

Socio-economic Status	Feed types offer to the cats by cat owners			P value ($\chi^2 = 572.05$)
	Ready-made Food	Frequency	Percentage	
High-Class	Yes	127	87.5	0.001
	No	18	12.5	
Middle-Class	Yes	106	38.8	
	No	167	61.2	
Lower-Class	Yes	0	0.00	
	No	82	100	
Total	Yes	233	46.6	
	No	267	53.4	
Economic Status	Home-cooked Food	Frequency	Percentage	
High-Class	Yes	18	12.5	
	No	127	87.5	
Middle-Class	Yes	167	61.2	
	No	106	38.8	
Lower-Class	Yes	5	6.09	
	No	77	93.91	
Total	Yes	190	38	
	No	310	62	
Economic Status	Leftover feeds	Frequency	Percentage	
High-Class	Yes	0	0.00	
	No	145	100	
Middle-Class	Yes	0	0.00	
	No	273	100	
Lower-Class	Yes	77	93.90	
	No	5	6.10	
Total	Yes	77	15.5	
	No	423	85.5	

3.4 Economic Status of owner's and Deworming Practices

The deworming practices of cat owners showed also statistically significant correlation with their economic status ($\chi^2 = 155.30$, $p < 0.001$). Among high-class owners, an about 82.06% (119 out of 145) reported regularly deworming their cats, demonstrating a strong commitment to preventive health care. This likely reflects both greater access to veterinary services and higher levels of awareness about the importance of regular deworming for pet health. In contrast, only 33.69% of middle-class owners dewormed their cats regularly. While this group showed some awareness of the importance of deworming, the lower rate may suggest financial limitations or less frequent access to veterinary care. The most concerning figures, however, were found among lower-class owners, where only 2.43% engaged in regular deworming, and a staggering

97.56% of owners neglected this essential practice altogether. This sharp disparity highlights the significant barriers lower-income households face in maintaining routine pet healthcare, which may stem from both economic constraints and lack of awareness about the health risks of parasitic infections.

These findings underscore the urgent need for targeted educational initiatives and accessible veterinary services, particularly in lower-income communities, to improve pet health and prevent the spread of zoonotic diseases.

Table 3 Deworming Practices according to owner's economic status

Socio-economic Status	Deworming Status	Frequency	Percentage	P Value ($\chi^2 = 155.30$)
High Class	Yes	119	82.06	0.001
	No	26	17.94	
Middle Class	Yes	92	33.69	
	No	181	66.31	
Lower Class	Yes	2	2.43	
	No	80	97.57	
Total	Yes	213	42.6	
	No	287	57.4	

Chapter 4: Discussion

The findings of this study provide valuable insights into the relationship between the economic status (ES) of cat owners and their pets' vaccination, deworming practices, feeding habits, and overall health status. The results indicate a significant correlation between the owners' monthly income and education levels and the frequency of vaccinations and deworming practices among their cats (Felipetto et al, 2022). These findings align with previous studies that suggest higher SES is associated with increased awareness and accessibility to veterinary care (Jhones & Simon, 2023).

4.1 Economic Status of owner's and Vaccination Practices

Our analysis demonstrated that cats owned by individuals with higher incomes and education levels were more likely to be vaccinated regularly compared to those from lower ES groups. This may be attributed to greater financial resources and knowledge about the importance of vaccinations in preventing infectious diseases in cats. These findings reinforce the role of economic and educational disparities in access to veterinary healthcare (Filipe et al, 2021).

Inadequate vaccination coverage among lower ES groups may contribute to higher rabies incidence rates, elevated public health challenges in regions where rabies remains endemic (S. Premashthira, 2021). This highlights the importance of increasing vaccination awareness and accessibility among lower ES pet owners to prevent potential outbreaks and protect both animal and human populations (Paul & Gates, 2017).

Conversely, cats belonging to owners from lower ES groups exhibited lower vaccination rates, which could be linked to limited financial resources and a lack of education on preventive care (Marianne Diez, 2015). These findings highlight the need for targeted educational campaigns and subsidized veterinary services to bridge the gap and promote responsible pet ownership across different economic groups (V. Ahuja, 2003) because lower ES group are not aware of cat vaccination.

4.2 Deworming and Feeding Practices

The study also identified significant differences in deworming practices based on ES. Owners with higher income and educational backgrounds dewormed their cats more frequently, likely due to a better understanding of the risks associated with parasitic infections. Similar trends were observed in feeding practices, where higher ES owners were more likely to provide

commercial, nutritionally balanced diets. Lower ES owners were more likely to rely on homemade or less expensive food options (Sarah A. S. Dodd, 2020).

The correlation between ES and feeding practices has been widely documented, as higher ES individuals often have better access to premium commercial pet food, contributing to their cats' overall health and well-being (Aylin Kumcu, 2015). In contrast, cats in lower ES households may be at higher risk of malnutrition and related health issues due to the use of less balanced diets.

4.3 Health Status of Cats

The association between economic factors and the health status of cats was another significant finding in our study. Cats from higher ES households were reported to have fewer health problems, which may be attributed to the better preventive care (vaccination and deworming) and feeding practices observed in these groups (L. G. Felipetto, 2022). This underscores the importance of ES in influencing pet health outcomes, as has been noted in previous research (Jennifer W. Applebaum, 2023)

Limitations

One limitation of this study is that the data were collected from a single veterinary hospital, which may limit the generalizability of the findings to the broader population. Additionally, the self-reported nature of economic status and vaccination/deworming practices may introduce reporting bias. Future studies with larger, more diverse samples and longitudinal designs could provide further insights into the long-term effects of ES on pet health and care practices.

Chapter 5: Conclusion

Overall, this study highlights the significant role that economic factors play in determining the health and well-being of domestic cats. By addressing these disparities, veterinary professionals and policymakers can work towards ensuring that all pet owners, regardless of ES, have access to the resources and knowledge necessary to provide adequate care for their animals.

These results highlight the need for easily available veterinary care and education to lower the risk of rabies and improve animal welfare in lower ES groups by exposing differences in vaccination, deworming, and feeding habits according to economic class.

This study also helps to make a bridge of vaccination gaps of deadly zoonotic disease rabies. The results of this study have important implications for veterinary public health and pet welfare. Public health initiatives that focus on providing affordable vaccination and deworming services, particularly in low ES communities, could help mitigate the impact of economic barriers on pet care (Caroline Boissonneault, 2018). Additionally, educational programs targeting low-income pet owners could play a central role in enhancing their awareness of the importance of vaccinations, deworming, and proper feeding practices.

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Biography of Author

Md. Shahin Alam, son of Md. Abdul Matin and Samortha Khatun hail from the village of Doripara, Ullapara, Sirajganj. The author was Born in Ullapara and raised there at his scenic village on, bank of the Jamuna River. Mr. Alam completed his secondary and higher secondary education from Ullapara Adarsha High School, and Govt. Akbar College, graduating in 2014 and 2016, respectively. The author is currently pursuing his Doctor of Veterinary Medicine (DVM) degree at Chattogram Veterinary and Animal Sciences University, with his graduation expected in December 2024.

Alam has been actively involved in veterinary research throughout his academic career. His research work includes a comparative analysis of the economic status of pet owners and its effects on rearing practices in the Chattogram metropolitan area, particularly focusing on vaccination, disease management, feeding, and deworming practices.

The author looks forward to receiving readers' opinions on this research paper, valuing constructive feedback that may lead to future advancements in veterinary science. He also hopes for everyone's blessings and well wishes as he continues to explore new frontiers in research and veterinary medicine.