



Representation of Cat Moslem Owners' Opinion on Orchiectomy and Ovariohysterectomy for Cat Overpopulation Control

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Abstract

Extremely high reproducibility in cats can be a problem due to the limited ability of humans to adequately care for cats. Overpopulation of cats in an area leads to animal and environmental health problems. In veterinary practice, surgical sterilization is the most recommended treatment to overcome the problem of overpopulation. However, many Moslem communities who are doubt this treatment because of Islamic law. This study aims to determine Moslem community opinion on orchiectomy and ovariohysterectomy surgery as an effort to control the cat population. The research was conducted through an online survey of 83 Moslem cat owners. The statement that the sterilization treatment for cats was not in accordance with Islamic law was approved by 12.30% of respondents and strongly agreed by 7.40% of respondents. Around 30.50% of respondents have neutral opinion, 31.50% of respondents agreed and 18.30% strongly agreed. Cat sterilization with certain medical reasons was not approved by 2.40% of respondents and strongly disapproved by 1.20% of respondents. Neutral opinion was given by 9.60% of respondents, 61.40% of respondents agreed and 27.70% strongly agreed. Respondents agreed that cat sterilization is against the nature of cats as creatures of Allah (23.10%) and strongly agreed (6.00%). Around 25.50% have a neutral opinion and 32.10% disagree and 13.30% strongly disagree. The obligation of humans to care about animal health problems is agreed by 53.24% of respondents and 42.20% strongly agree. Neutral opinion is 2.40% and disagree is 2.40%. A total of 36.30% of respondents agreed even though the Prophet's cat was not sterilized and 14.50% strongly agreed. Around 27.50% are neutral, 16.90% disagree and 4.80% strongly disagree. It was concluded that most of the Moslem community who keep cats have no problem with orchiectomy and ovariohysterectomy surgery to reduce cat overpopulation, some do not know and some do not agree.

Keywords: Representation, cat, Moslem, owners, orchiectomy, ovariohysterectomy

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Introduction

Cat (*Felis catus*) is one of the most popular pet animals globally that have been

domesticated by humans thousands of years ago as companion animals. In almost every human settlement area, cats can always be found, both masters, semi-feral and feral. As beloved animals, cats are well cared for by humans and are even considered family members by many families in the world. Apart from their intelligence which is quite high for an animal, cats are also very adorable for most cat lovers because of their cute behavior and different characters just like humans. McDonald et al., (2023) developed a multistate Matrix Population Model (MPM) by combining some parameters of multiple life history into an integrated model of cat demography and population dynamics. Subpopulation is one the models characterize cats and it includes owned, shelter, stray and feral.

Cats are known to have very high reproductivity rate, therefore it is not surprising that cats are very easy to find in various locations. Johnson (2022a) stated that puberty in queen can occur between 6 to 12 month of age and at a weight greater than 2-3 kg. A tom cat can show its puberty between 7 to 12 months of age (Johnson, 2022b). The high reproduction rate of cats is very profitable from a breeding perspective and there is very little chance of extinction. However, the high rate of reproduction in cats also causes many problems, especially health problems for cats, their owners' families, the environment and even society at large. Generally, four kittens can be delivered twice a year by a female cat (1-10 kittens and 1-3 litter per year) so that a queen is able to deliver 40 kittens over a 5-year lifespan (Woinarski et al., 2019; Jones & Coman, 1982; Read & Bowen, 2001; Robinson & Cock, 1970).

Limited human capabilities in caring for cats, especially costs and time, cause a decrease in the quality of life for cats and lead to the emergence of various health problems. In addition, cats are also one of the animals that can transmit certain diseases to humans, including their owners if they are looked after inadequately. Perdomo et al., (2021) reported that abandonment of pet brings severe consequences and problems concerning animal welfare, ecological, public health and safety, and economic. This fact increasingly emphasizes that cat overpopulation must be controlled wisely for the health and welfare of animals, even of humans.

In veterinary medicine, neutering and spaying are commonly recommended procedure to perform (Vendramini at al., 2020) and this is related to the solution of controlling cat overpopulation. Surgical sterilization in cats is one of the preventive ways to minimize numerous undesirable behaviors, medical condition, and disease (Howe, 2015). Furthermore, a program called trap-neuter-release (TNR) is commonly performed by many cat communities in some countries in order to decrease feral and unowned cat population. For management of feral cat population, McCarthy et al., (2013) reported that trap-vasectomy-hysterectomy-release (TVHR) should be preferred over TNR if decrease in population size is the goal.

In some cases, a certain community like cat Moslem owners is still confused about the law of surgical sterilization in cats. Kashim et al., (2020) stated that the surgical procedure has been an issue debated by many, including the mujtahids, cat lovers, researchers and general public.

Materials and Methods

A questionnaire-based cross-sectional survey (Kersebohm et al., 2017) was performed and respondents were randomly selected based on the criteria of being Muslim, keeping cats and having visited a veterinary clinic for cat treatment or consultation. The survey was conducted online using a Google form and distributed purposively via an Android-based

messaging application to all veterinary clinic clients who met the criteria. The data were collected and tabulated and then analyzed using descriptive statistics (Riwidikdo, 2008).

Results and Discussion

The level of general knowledge of respondents regarding sterilization of both female cats (spaying) and male cats (neutering) is presented in Table 1. The score of respondents' level of knowledge regarding this matter is classified using a Likert Scale consisting of not understanding (score 1), doubtful (score 2), understand (score 3) and very understand (score 4).

Table 1. Respondents' level of general knowledge about spaying and neutering

No	Parameters	Percentage (%) at Each Score			
		1	2	3	4
1.	Spayed cat will no longer come into heat	27.70	12.10	30.10	30.10
2.	Spayed cat will not be pregnant or give birth again	14.50	3.60	8.40	73.50
3.	Neutered cat no longer has the libido to mate	22.90	18.10	28.90	30.10
4.	Neutered cat can't give offsprings	13.30	7.20	13.30	66.20
Mean		19.60^a	10.25^b	20.18^a	49.97^c

It appears that the majority of respondents had a high level of general knowledge with the category "very understand" (49.97%) and the category "understand" (20.18%) about spaying and neutering in cats. The remainder, respondents' level of general knowledge regarding spaying and neutering of cats was categorized as "don't understand" (19.60%) and "doubtful" (10.25%).

Adult, reproductive female cats will not experience heat (estrus) like cats that are not spayed. These physiological changes are caused by changes in the hormonal cycle in the female cat's reproductive system where estrogen secretion from the ovaries stops. During estrus, the estrogen concentration of female cats is at least 60 picogram/ml and after 5 days the concentration decreases rapidly to 8-12 picogram/ml (Junaidi, 2013). Removal of the uterus during ovariohysterectomy also does not allow female cats to gestation and give birth because the uterus is the main reproductive organ which functions as a place for fetal growth and development. Fertilization occurs in the oviduct and then the embryo migrates to the uterine body to develop into a fetus until birth (Brown & Comizzoli, 2018).

Libido (sexual desire) in adult male cats is an important factor in mating activity and physiologically appears when female cats are in estrus. Reproductive sterilization in male cats (orchietomy) apart from being able to reduce or even eliminate libido, has also been proven to have positive effects on male cats, including changes in behavior from aggressive to calm and the elimination of the very disturbing habit of spraying urine (Kustritz, 2012). Castration or orchietomy is a surgical procedure to remove the testicles (El-Sherif, 2017) so that the main source of the testosterone hormone becomes absent and reproductive activity decreases or even stops. The absence of testicles from a male cat's body will cause the male cat to lose its ability to fertilize oocytes and the cat will become sterile.

Based on experience in daily practice, one of the reasons cat owners do not agree with sterilization is the belief that Islamic law does not justify this action. Some cat owners understand that neutering a cat is no different from eliminating an animal's basic rights to be

able to fulfill its biological needs like a human. A study conducted by Downes et al., (2015) in Australia concluded that several reasons pet owners keep their pets from being sterilized include expensive operating costs, personal ability to control the pet population even without sterilization, and negative perceptions that sterilization can reducing the health and welfare of pets.

Figure 1 generally shows a good percentage where the majority of respondents do not have a problem with sterilization of cats when viewed from the perspective of Islamic religious teachings. Around 31.50% gave a disagree opinion and 18.30% gave a strongly disagree opinion.

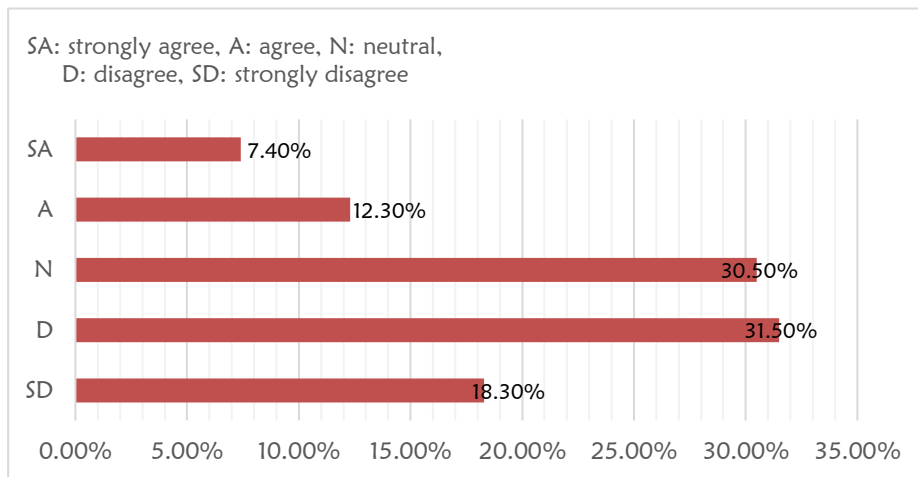


Fig. 1 Opinions regarding the statement "sterilizing cats is not in accordance with Islamic law"

Daily practical experience also finds that among the many cat owners who refuse to sterilize their cats for reasons of Islamic law, there are several of them who decide to sterilize their cats for certain medical reasons. These cat owners believe that reproductive sterilization of cats is only justified if there are certain medical reasons where other treatment options are unable to overcome the disease problem that occurs.

Griffin et al., (2016) reported that gonadectomy in pets or reproductive sterilization surgery is routinely recommended in various countries before the first estrus (heat) cycle, namely at the age of 6-9 months. Advocacy for gonadectomy refers to the benefits obtained such as ease of population control, decreased unwanted pet behavior and reduced relinquishment of pets, as well as reducing the incidence of certain diseases.

Opinions regarding the statement "sterilizing cats in accordance with Islamic law if there are certain medical reasons" presented by Figure 2. Around 61.40% of respondents agreed and 27.70% strongly agreed.

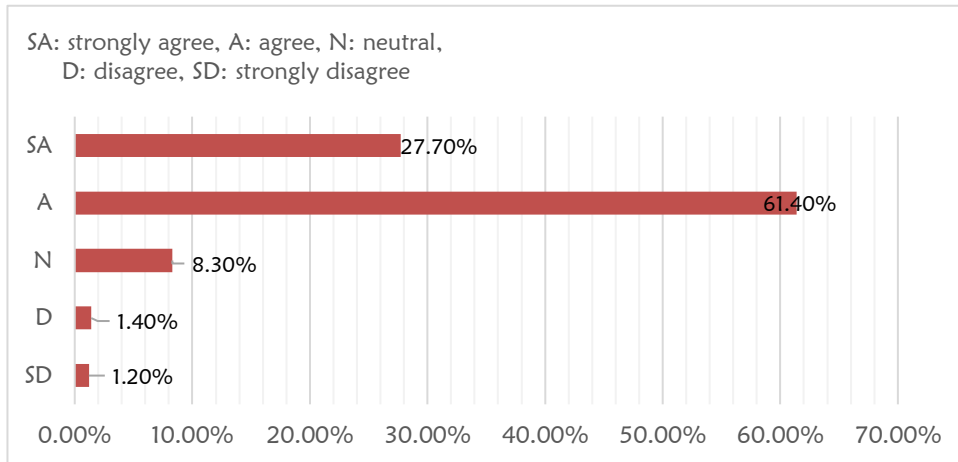


Fig. 2 Opinions regarding the statement "sterilizing cats in accordance with Islamic law if there are certain medical reasons"

However, 8.30% of respondents stated they were neutral regarding the statement in question. Other respondents stated they disagreed (1.40%) and strongly disagreed (1.20%). One of the serious reproductive diseases in cats is pyometra which can weaken the animal's condition if it does not receive adequate treatment from the start (Naimah et al., 2019). Ovariohysterectomy is still the most recommended solution and is very effective compared to drug therapy in treating cases of pyometra in cats (Misk and El-sherry, 2020). This can also be interpreted that cases of pyometra are often a medical reason that makes cat owners not question reproductive sterilization surgery.

Figure 3 presents a diagram of respondents' opinions regarding the statement "sterilizing cats is against the nature of cats as creatures created by God to reproduce". As many as 32.10% of respondents disagreed and 13.3% strongly disagreed. A neutral opinion was given by 25.5% of respondents and 23.10% of respondents agreed and 6.00% of respondents strongly agreed.

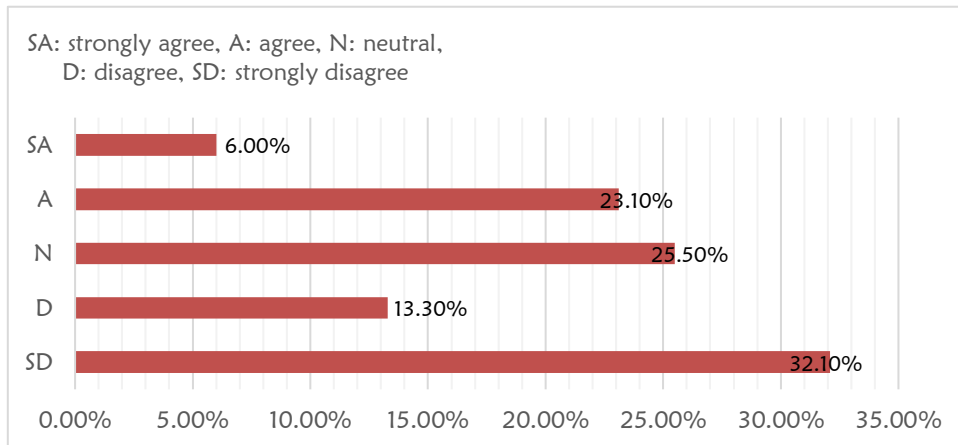


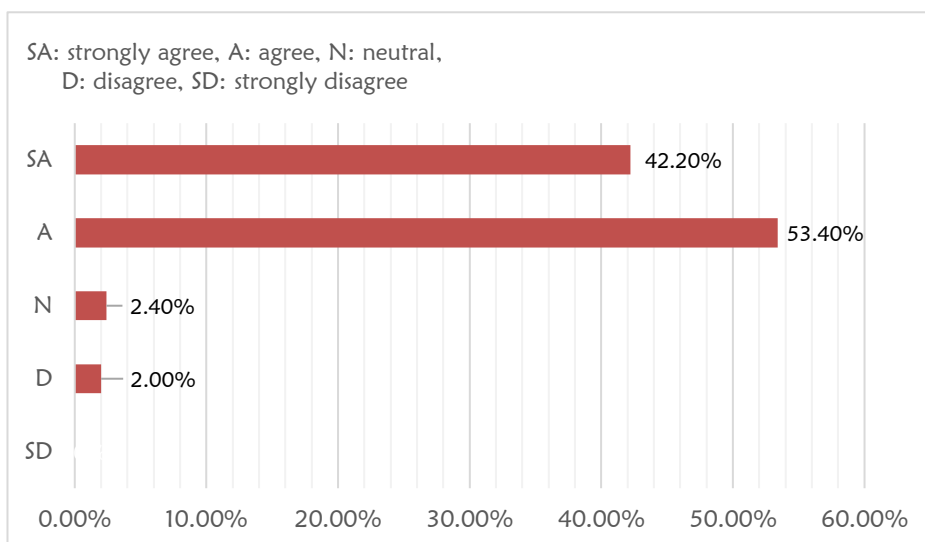
Fig. 3 Opinions regarding the statement "sterilizing cats is against the nature of cats as creatures created by God to reproduce"

Hubrecht & Kirkwood (2010) wrote that female cats can reach sexual maturity at the age of 9 months (range 4-18 months) and male cats can reach sexual maturity at the age of 8 months,

although some of them can be earlier. Junaidi (2013) stated that the age of puberty (first estrus) in female cats varies greatly depending on the breed of cat. Most female cats experience their first estrus when they reach a body weight of 2.3-2.5 kg or around 7 months of age. In some cases, it has been found that sexual maturity is reached as early as 3 months of age and in some cases long-haired native breeds such as Persians may not reach sexual maturity until 12-18 months of age. Hubrecht & Kirkwood (2010) states that the average number of offspring per cat birth is 4 (3-10) with 104 male cats for every 100 female cats. The maximum number of children usually occurs in the third birth.

As creatures endowed with reason and thought, humans are given the responsibility to solve problems on earth. Watsiqotul et al., (2018) concluded in their research that humans have advantages and power in controlling nature and other living creatures. The advantages possessed by humans require humans to be able to demonstrate their responsibility for the use and maintenance of nature and all its contents as a mandate. The concept of humans as caliphs on earth also shows that in Islamic teachings there is great relevance and attention to ecological and environmental concepts.

Figure 4 shows the distribution of respondents' opinions regarding the statement "cat population control is a human responsibility because it affects animal health, the environment and society".



Around 53.40% of respondents agreed that controlling the cat population is also a human responsibility and 42.20% strongly agreed. Only 2.40% of respondents were neutral and 2.00% disagreed.

Fig. 4 Opinions regarding the statement "cat population control is a human responsibility because it affects animal health, the environment and society"

Cat populations are always increasing in various parts of the world, and this fact has resulted in increased cat contact with humans and wild animals which can spread zoonotic diseases (Kennedy et al., 2020). There are 38 cat-sourced zoonotic agents reported by Tuzio et al., (2005) ranging from bacteria, parasites to viruses. If the cat population is not controlled, zoonotic problems originating from cats will become more easily spread and contagious. The situation will become more complicated if the wild cat population increases. Zoonoses are a universal health problem in which animals, humans and the environment experience health problems.

Conclusion

Based on the results of the research and discussion, it can be concluded that 1) the majority of respondents have high knowledge about reproductive sterilization surgery as an effort to control cat population, 2) the majority of respondents gave a positive opinion regarding orchietomy and ovariectomy in cats. Suggestions for this research are the need for further research involving other researchers with expertise in Islamic studies, especially those related to Islamic law relating to medical actions in veterinary medical practice.

Conflict of Interest

We certify that there is no conflict of interest with any financial, personal, or other relationships with other people or organization related to the material discussed in the manuscript.

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