

Welfare of companion animals: Domestic Cats

Did you know that cats are concerned about else of their cuteness by people?

Introduction

Pet ownership contributes to the human well-being includes stress relief, companionship or stability in their lives (Jongman, 2007; McCarthy and Simcock, 2024). Cats are one of the common animals to be pets, estimated 3.76 million cats are owned in 27% of Australian households whereas more than 5 million domestic cats are estimated in Australia (Jongman, 2007; Kennedy et al., 2020).

The term of ‘welfare’ is a state of trying to cope with its environment (Broom, 1991), it provides better management systems for animals in farm, zoo, laboratory as well as companion and performance animals (Broom, 2019). All the animals that being kept under these purposes, appropriate food, water, suitable environment, health or companionship are the key requirements (Broom, 2019).

Domestic cats are originally evolved from wild cats about 3000 years ago (Jongman, 2007). About 25,000 years ago which is the last ice age, wild cats dispersed throughout the world such as Europe, Asia and Africa and became highly adaptable to different environmental habitats (Driscoll et al., 2007; Jongman, 2007). This feature appears in recent domestic cats (Jongman, 2007), now they are well known as how flexible to be adapted indoor lifestyle in this respect (Toukhsati et al., 2015; Foreman-Worsley and Farnworth, 2019). Among domestic cats, mostly being housed for life (Jongman, 2007), then house environment is very important to ensure good welfare (Foreman-Worsley and Farnworth, 2019).

This review has written by aiming to improve welfare issues of domestic cats according to the concern about how owners are treating their cats in response to the rapidly growing number of domesticated cats as well as to improve consciousness in society about roaming/feral cats’ welfare.

Potential welfare issues that influence domestic cats

Regarding to the domestic cat welfare, stress is a major issue; aggressive or compulsive behaviour, elimination problems as well as surrounding environment are related to the cause of stress (Amat et al., 2016). Not only the stress, domestic cats getting lost, injury or diseases by roaming outside are part of their welfare issues (Jongman, 2007; Amat et al., 2016; Kennedy et al., 2020; Menor-Campos et al., 2024).

- Stress in domestic cats

Stress is caused by several reasons such as environmental changes, poor relationship between cat and human or lack of control and predictability, as well as poor human-cat relationship such includes inappropriate socialisation/inadequate handling such as using punishment (Amat et al., 2016). At the background of the domestic cat welfare issues, owners' lack of knowledge or misunderstanding about cats' behaviour or biology (Menor-Campos et al., 2024). There have been reported several numbers of cats' problem by their owner, commonly elimination and destructive behaviour issues (Menor-Campos et al., 2024).

- Roaming/feral cats

Cat overpopulation is concerned by leaving unneutered female roaming cats (Finkler and Terkel, 2012).

Roaming cats are existing in result of pet cats being allowed to roam, being lost or uncontrolled breeding (Finkler and Terkel, 2012; Swarbrick and Rand, 2018). As mentioned before, Australia has more than 5 million of domestic cats however only over the half are owned and roaming cats have high risks of lost or injury, as well as having negative impacts on Australian native wildlife such as predation by the roaming cats (Jongman, 2007; Kennedy et al., 2020; Trouwborst et al., 2020). Many of cat owners believe that roaming outside is necessary as activity benefit for cats, however it leads welfare risks such as getting injured by fighting with other cats or car accident, infecting disease by other cats that include feline immunodeficiency (FIV) (Jongman, 2007).

Evaluation of the welfare status of domestic cats with reference to biological functioning and natural behaviour

- Stress in domestic cats

As mentioned before, keeping good welfare for domestic cats requires desirable house environment, perhaps they would get stress by attempting unnatural behaviour. Toukhsati et al. (2015) defines containment environment needs; which are opportunities of play, climb or resting without destruction. Additionally, van der Leij et al. (2019) have done research about effect of hiding box on cats' behavioural stress level (Cat-Stress-Score; CSS), ended with result of significant decreasing stress level with hiding box. Figure 1 shows that changing stress level in two different situations; dotted lines for without hiding box which decrease stress gradually and solid lines for with hiding box which decrease suddenly thus that original environment alternative is effective for domestic cats' natural behaviour.

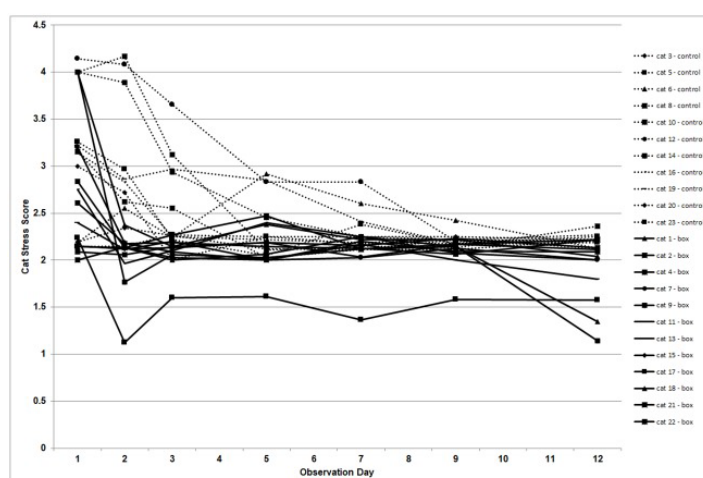


Figure1: Course of the Cat-Stress-Score in time of individual cats from the control group and the experimental group; dotted line – individual cats without hiding box, solid line – individual cats with hiding box

Amat et al. (2009) have found that aggression and elimination are the most commonly reported problem, which had already mentioned in this review that because some studies have done about domestic cats' behaviour then noted that kind of behaviours are likely sign of stress and owners should be given some advices from veterinarian or behaviourists how to address them (Menor-Campos et al., 2024). Whereas domestic cats are getting popular as being pets, most of cats' owners

has lack of knowledge that even cats are highly flexible to adapt containment indoor environment they still require distinct areas for especially sleeping, feeding and elimination (Ellis, 2009; Toukhsati et al., 2015; Foreman-Worsley and Farnworth, 2019).

Boissy et al. (2007) stated that understanding animals feeling can find solution for their welfare problems better and human society has stated to accept for animals having emotions such as pain or suffering. Even through human cannot communicate with animals as we do, it is essential to observe their natural behaviour in both of negative and positive way rather than not any perspective. Then Quaranta et al. (2020) proved that cats have ability to recognize cross-modally conspecific and human expressions. Happiness and anger stimuli have been used; cats spontaneously looked congruent facial expression longer when they hearing the conspecific vocalization of either emotion. Also, cats had high stress level when hearing anger vocal but when it was happiness, their stress level was lower. This suggests that domestic cats' welfare can be improved by observing their emotions.

- Roaming/feral cats

Females produce four kittens twice a year on average which lead significantly high speed of increase population (Kennedy et al., 2020). This biological function in the domestic cat would be concerned particularly in Australia because of wide variety of wildlife existence. Thus, in some points of Australia, there is a limitation for domestic cats to keep inside due to the concerns about predation of domestic cats on wildlife (Rochlitz, 2005). Feral cats have had large impact on Australian mammals, causing or contributing to more than 30 of species extinctions in the past 250 years (Legge et al., 2020). They also hunting bird or reptile; affect these native species mostly through predation, as well as through disease transmission, hybridisation with other native cat species (Legge et al., 2020). Roaming pet cats are also joining to the hunt, even though roaming cats also hunting introduced species such as rats and mice; especially rodents, it is unlikely to be a general phenomenon to suggest that roaming cats could be beneficial for native wildlife by reducing the density of introduced species and would be causing of induce hyper-predation (Legge et al., 2020).

Roaming cats carry wide range of diseases that can pose risks to themselves, other native wildlife, or even humans (Lepczyk et al., 2015). It is important to understand how cats behave in a role of disease acquisition and their movement thus appropriate management actions and policies could be established (Lepczyk et al., 2015). Cats are the one of the wide spready invasive vertebrate species; they would exist nearly every ecosystem type which from tropical islands, arid interior, sub-Antarctic islands, high elevation mountains and high density of urban area (Lepczyk et al., 2015). Moreover, they are partially arboreal, with good sense of eyesight and unneeded water if live prey is available (Lepczyk et al., 2015).

Roaming cats' population is abundant in urban environment, vehicular accidents are commonly caused of death but daily many of roaming cats engage in dangerous activities (Loyd et al., 2013; Flockhart et al., 2016). Loyd et al. (2013) had research about activities of roaming pet cats by using small video camera hanging onto the cat collars. 42 cats were tested and recorded almost half of them had crossed road, and one-quarter of cats got close contact with unknown cat was also recorded which is threatened of contracting infectious diseases (Loyd et al., 2013). The both of injury and disease risk probabilities would be higher if those cats are very strictly outside roaming cats.

Trap-Neuter-Return (TNR) program is important for preventing population of roaming cats (Finkler and Terkel, 2012; Swarbrick and Rand, 2018) which traps cats, anaesthetise, sterilise and returned to their habitats (Wallace and Levy, 2006; Longcore et al., 2009). This program has not really been familiar in general society or even has not researched well (Swarbrick and Rand, 2018; Loss et al., 2022). However, Levy and Crawford (2004) found that TNR program at the Florida University successfully reduced feral cat population during 11 years long period. This research proves that TNR program is effective and thoughtful for feral cats' welfare.

Discussion about domestic cats' welfare that could be improved

By addressing domestic cat issues and research results about their behaviour, they are likely getting stress by unsuitable environment and tending to behave aggressively or having elimination problems.

Cats provide well-being for people, pet cats provide happiness for owners, establishing suitable environment and any enrichments for cats' happiness and peaceful life is their owner's responsibility. As mentioned in previous section, cats feel less stress with hiding box which means that enrichments actually alternative function for domestic cats, even they are artificial, cats can still be relaxed. So, owners must respect their natural behaviour while living indoor.

Discovering domestic cats' feeling by observing their emotions is modern way of solution. Animals have completely different languages compared to human, but people believe there is a way to communicate with animals by somehow and it is proved by science to identify what they actually feel with comparing human emotions. If domestic cat's owners could be able to catch cats' feeling, it is possible to start improve current situation before owners considering about to relinquishment of their own cats to shelter.

Welfare issue of indoor-lived domestic cats seems to be solved by their owners but it is intense for roaming or feral cats; especially for cats being strictly outdoor. They have a greater number of welfare issues than pet cats nevertheless those issues affect not only themselves which is considerable within both political and general human society. Hunting wildlife by roaming and feral cats is particular issue; Australia has already been strict about conservation. At least number of roaming pet cats could be reduced by rising owners' awareness for the hunting but also avoiding spread diseases. The most of impacts of spreading diseases to human could be caused by roaming pet cats bringing back to their house and transmit to their households. For strictly outdoor roaming and feral cats, TNR program would improve their welfare issues, especially for the future because they should not produce more cats to suffer.

Conclusion

Domestic cats' stress likely come from their environmental issues and which induce their behavioural problems. But there is not still many of research has been attempted about roaming needs for neutered domestic cats, so as Toukhsati et al. (2015) stated, further research will be

required to identify how much the environment are suitable enriched for cats to behave naturally with less stress and boredom. As getting large population of domestic cats in worldwide, today's welfare issues would continue to be concerned by getting behind to track numbers. However, only pursuing what is lost is not a solution, it is also important to make current/future cat owners or even general human society to recognise that they are related to the issues to solve.

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