



THE AGA KHAN UNIVERSITY

eCommons@AKU

---

Department of Biological & Biomedical Sciences

Medical College, Pakistan

---

March 2017

# Challenges of conducting animal based research and teaching in medical colleges of Karachi, Pakistan

Muhammad Ulusyar Khan  
*Aga Khan University*

Faiq Amin  
*Aga Khan University, faiq.amin@aku.edu*

Fazal Manzoor Arain  
*Aga Khan University, fazal.arain@aku.edu*

Follow this and additional works at: [https://ecommons.aku.edu/pakistan\\_fhs\\_mc\\_bbs](https://ecommons.aku.edu/pakistan_fhs_mc_bbs)

 Part of the [Biochemistry Commons](#)

---

## Recommended Citation

Khan, M. U., Amin, F., Arain, F. M. (2017). Challenges of conducting animal based research and teaching in medical colleges of Karachi, Pakistan. *Journal of Pakistan Medical Association*, 67(3), 487.

**Available at:** [https://ecommons.aku.edu/pakistan\\_fhs\\_mc\\_bbs/431](https://ecommons.aku.edu/pakistan_fhs_mc_bbs/431)

## Challenges of conducting animal based research and teaching in medical colleges of Karachi, Pakistan

Muhammad Ulusyar Khan, Faiq Amin, Fazal Manzoor Arain

Madam, poor living conditions, such as chronic food and water deprivation and uncontrolled temperature, humidity and light/dark cycle significantly alters the results of animal based studies because they result in increased stress response, altered circadian rhythm and modulation of endocrine systems in animals.<sup>1,2</sup> There is international consensus that animal welfare needs to be ensured in order to make animal-based research and teaching acceptable and replicable. Pakistan Medical and Dental Council (PMDC) does not have detailed guidelines for animal care facilities in the research labs of medical colleges except for infrastructural needs, quote: "There shall be adequate .....space and equipment for the humane care of animals when they are used in teaching or research".<sup>3</sup> Whether the international standard of animal welfare is maintained in Pakistan has not been investigated. We conducted a telephonic and in-person survey of PMDC recognized medical colleges of Karachi, Pakistan, to identify the existence of animal houses and the challenges they faced. Only five out of fifteen recognized institutions had an animal housing facility. The major challenges faced by some of these facilities were lack of control of environmental conditions

.....  
Department of Biological and Biomedical Sciences, The Aga Khan University, Karachi.

**Correspondence:** Fazal Manzoor Arain. Email: fazal.arain@aku.edu

like temperature, humidity and lighting. Congenic line of some species were bought 10-30 years ago and since then were inter-bred without maintenance of records. However, no overcrowding was noted and general hygiene was well maintained. A veterinarian was present in all facilities. All facilities recognized that their standards should be improved. It was brought to attention that the medical colleges of Karachi cannot afford to establish and maintain international standard animal research facilities. It is imperative that all animals maintained in these institutes should be kept in conditions that conform to international standards. In this regard, PMDC should have more clear and detailed guidelines for establishment and maintenance of animal care facilities.

**Disclosure:** No financial support or grant was used for this case report.

### References

1. Heiderstadt KM, McLaughlin RM, Wright DC, Walker SE, Gomez-Sanchez CE. The effect of chronic food and water restriction on open-field behaviour and serum corticosterone levels in rats. *Lab Anim.* 2000; 34: 20-8.
2. Spoelstra K, Wikelski M, Daan S, Loudon AS, Hau M. Natural selection against a circadian clock gene mutation in mice. *Proc Natl Acad Sci U S A.* 2016; 113: 686-91.
3. Pakistan MoNRaSGo. The Gazette of Pakistan January 26th 2012. [Online] [Cited 2012 January 26]. Available from URL: [www.pmdc.org.pk/Portals/0/GuidelinesAndCriteria/CRITERIA.pdf](http://www.pmdc.org.pk/Portals/0/GuidelinesAndCriteria/CRITERIA.pdf).