

# Culture of care in animal research – Expanding the 3Rs to include people

Laboratory Animals  
2022, Vol. 56(6) 511–518  
© The Author(s) 2022



Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/00236772221102238  
journals.sagepub.com/home/lan



**Fabienne Ferrara<sup>1</sup>** , **Bernhard Hiebl<sup>2</sup>**, **Peter Kunzmann<sup>2</sup>**,  
**Florian Hutter<sup>3</sup>**, **Freni Afkham<sup>3</sup>**, **Megan LaFollette<sup>4</sup>** and  
**Christian Gruber<sup>5</sup>**

## Abstract

Research on animals is essential for science and medical progress. While it is still necessary to conduct this research, it is essential to apply the highest standards in animal welfare, including animal husbandry and care. Furthermore, it is important to recognize the special relationship between research animals and the people who care for them. Caring for research animals can be extremely fulfilling and meaningful, but it also comes with challenges, particularly when caring for animals experiencing pain or distress. These challenges can lead to work-related mental stress. To get more insight into the challenges of working in animal research, we organized a panel discussion at the GV-SOLAS (German Society for Laboratory Animal Science) and IGTP (Interest Group Animal Caretakers) conference 2021 about work wellbeing. This discussion was the first of its kind in Germany. The active panel contributions included the view of an ethical philosopher, a scientist, a lecturer for laboratory animal science, an animal facility manager and an animal caretaker. They gave insights from their perspective into key factors that can affect human wellbeing in animal research. Key ideas included stigmatization of work, tension between research aims and animal wellbeing, and the importance of supportive culture to overcome work-related strains, as well as lack of education and supportive environments to cope with emotional stress in the workplace. Overall, the discussion has shown that we must also promote human wellbeing when promoting culture of care in animal research, because there is strong relationship between culture of care and individual performance.

## Keywords

Culture of care, caring for animals, wellbeing, compassion fatigue, resilience

Date received: 17 February 2022; accepted: 26 April 2022

## Cost of caring in animal research

The importance of animal research is highlighted by the ongoing COVID-19 pandemic – research animals have been and still are essential in understanding the virus and developing vaccines and therapies to combat it. Occasionally, these research animals are discussed in the media and politics and recognized for their contribution to this important biomedical research. Experienced animal caretakers are not only at the forefront of putting theoretical aspects of enrichment into practice to counteract possible stress effects based on research protocols, but are also essential in training on adequate management and care.<sup>1</sup> However, the people responsible for the care of these research animals are often not recognized, especially animal caretakers,

technicians and veterinarians.<sup>2</sup> Even more, it can be a delicate situation as given hierarchies between scientists and animal service staff shift in terms of ensuring good

<sup>1</sup>Consulting and Training in Laboratory Animal Science, Berlin, Germany

<sup>2</sup>Institute for Animal Hygiene, Animal Welfare and Farm Animal Behaviour, University of Veterinary Medicine Hannover Foundation, Germany

<sup>3</sup>Merck Healthcare KGaA, Darmstadt, Germany

<sup>4</sup>The North American 3Rs Collaborative, Denver, Colorado, USA

<sup>5</sup>Veted-consulting Munich, Germany

### Corresponding author:

Fabienne Ferrara, Kaiserin-Augusta-Allee 87, 10589 Berlin, Germany.

Email: ff@consciencetrain.com

care for research animals, which requires trust and appreciative cooperation.<sup>1</sup> This care for animals in research can be challenging. Working with research animals often requires longer than average or flexible working hours with weekend duties – which is reflective of the high level of protection that research animals deserve. A high degree of animal welfare is a necessity for both public support of animal research and good quality research results, and this requires a high standard of care.

As highlighted in the healthcare sector, compassion is a key element in providing care to other beings.<sup>3</sup> Therefore, the research animal field needs people who are particularly caring, compassionate and empathic.<sup>4,5</sup> Caring professions that require compassion and empathy can lead to compassion satisfaction as a positive outcome of caring for others but can also lead to negative outcomes such as burnout.<sup>4–6</sup> The negative cost of caring has been addressed for many years within the human healthcare sector, and with the ongoing COVID-19 pandemic the global challenge of ensuring wellbeing and mental health has become even more clear.<sup>7</sup> In caring fields, work-related stress can lead to the development of a particular phenomenon called compassion fatigue.<sup>8,9</sup> Compassion fatigue is described as a state of physical and mental exhaustion and an inability to cope with external environmental conditions.<sup>5,8</sup>

When compassion fatigue manifests itself, undesirable symptoms occur, such as reduced ability to feel empathy, lower care-giving behaviour, anger, irritability, increased use of alcohol and drugs, decrease in professional decision-making ability and increase in absence from work. In addition to the effects on the work life, compassion fatigue also affects the private life of the person concerned through heightened anxiety, irrational fears and problems in personal relationships.<sup>5</sup> Compassion fatigue was first described for professions that take responsibility and care for other people in difficult life situations, such as palliative care, rescue workers and psychological therapists.<sup>9</sup> Unsurprisingly, the recent results of studies show that work-related mental stress and compassion fatigue also occurs not only in challenging human–animal relationships such as in veterinary clinics and shelters,<sup>10,11</sup> but also in animal research personnel.<sup>12–15</sup>

This highlights the need to pay more attention to the human strain and human wellbeing in the animal research community. To get more insight into the views of different stakeholders in Germany, we organized, for the first time, a panel discussion at the GV-SOLAS (German Society for Laboratory Animal Science) and IGTP (Interest Group Animal Caretakers) conference 2021 about work wellbeing.

## German conference roundtable 2021 on mental stress and work wellbeing in animal research

### *Roundtable background*

The increase in studies on mental stress and compassion fatigue in the last three years underlines the relevance of mental health in laboratory animal science. So far, most of the published studies on human wellbeing in animal research are focused on North America, the UK and Spain, but outcomes are very likely valid also in other countries such as, for example, Germany. While the types of stress may vary between different professional groups, three factors seem to be particularly stressful across professions:<sup>12,14–16</sup>

- Low public image of animal research and stigmatization as ‘dirty’ work;
- Low social support and poor internal communication culture;
- Areas of conflict in daily work.

Apart from low public appreciation, tensions in one’s own work can lead to strain. This can be due to the inherent tension between caring for research animals, trying to decrease pain or distress and to ensure their welfare as much as possible, and simultaneously carrying out animal research that can cause pain or distress or decreased welfare for research animals. This paradoxical situation can lead to moral stress, especially in animal care professionals as they enter the profession because of their love and empathy towards animals.<sup>10,17</sup> Moral stress is a particular form of stress and arises because individuals are uncertain whether they can meet their or society’s moral obligations.<sup>18,19</sup> However, mental stress, such as work-related anxiety, seems also to be associated with less work experience in animal research.<sup>12,20</sup>

In our own experiences from workshops, seminars and other panel discussions (6R-Roundtable: <https://www.berliner-kompaktkurse.de/6r-roundtable.html>) the three key factors listed above are also present in Germany among animal caretakers, attending veterinarians, animal welfare officers, animal managers and scientists. Based on these initial indications, we organized a roundtable on work-related stress and wellbeing at the 2021 virtual meeting of GV-SOLAS and the IGTP, which was public to all participants of the conference. The aim of the event was to show opinions and to discuss how the three key factors affect the quality of work-related stress and work wellbeing in the context of their professional activities.

### Roundtable summary

The roundtable was divided into two sections. No voice or video recordings were made during the event to ensure anonymity of the audience and panellists. The first part included five keynote speeches (three minutes each) by the invited speakers, who shared their own views on the event topic from their profession with the auditorium. These contributions included the view of an ethical philosopher (university), a scientist (basic research, university), a lecturer for laboratory animal science (higher education, university), an animal facility manager (pharma company) and an animal caretaker (pharma company). The speakers emphasized several relevant points for compassion fatigue. The summaries of the individual key speeches are listed below according to the individual perspectives.

From an *ethical perspective*, it was emphasized that the best we can do is to avoid unnecessary levels of pain while also working to promote positive welfare for research animals. Additionally, working to ensure true benefits from each animal study would help improve social stigmatization. Even though animal research has supported nearly every medical achievement, the discussion about animal research has been highly controversial for many years and has often stigmatized animal research as ‘dirty’ work. This may be due to the fact most people are not exposed to animal research and do not understand its direct benefits. In addition, positive representations of animal research in the media and politics are rare. As a research community, we can work to prevent stigmatization. Stigmas can affect any profession involved in some form of animal research. It can make people feel ashamed of their work and reluctant to talk about their profession in private life. Getting out of the stigma requires meaningful, informed, animal welfare-oriented and compassionate animal research. In addition, a high degree of empathy towards research animals might promote social acceptance and should be considered as a positive character trait in all professions in animal research. When these factors are achieved, professionals should feel more empowered and positive about talking about their work.

From the *scientist’s point of view*, there can sometimes be a trade-off between the research aims and the strain on animals. This begins with planning for the animal research. Studies must be designed to achieve the best data while inflicting as little stress on the animals as possible. At times, achieving meaningful scientific results is only possible when causing a level of stress on the animals that scientists would prefer to avoid. This tension can cause work related stress for all animal research personnel. As a scientific supervisor, it is particularly important to support early career

scientists. Successful scientific projects are vital for successful scientific careers – but the aforementioned conflict between meaningful results and animal stress can be difficult, especially for young scientists.

From the *lecturer for laboratory animal science point of view*, addressing mental stress and wellbeing must start early in academic careers and higher education. Responsible management of students and trainees means also ‘applying the 3Rs to people’:

1. Replace all those who do not explicitly want to do the work in animal research.
2. Reduce the number of people working in animal research to the most necessary amount, while also maximizing animal care. Ensure that staff are highly skilled by providing education and training.
3. Refine animal research professionals’ mental stress by providing support and resiliency advice early in animal research careers. Emotional strain must be taken seriously and given adequate attention, for example, by offering pastoral care during laboratory animal science training courses.<sup>21-22</sup>

From the *animal care workers’ and animal facility managers’ view*, animal welfare and human wellbeing are closely connected in everyday work. Animal caretakers must both take care of research animals each day and simultaneously be actively or passively involved in putting research animals under strain for research. Therefore, it is important to give animal care staff space for their emotions and offer them opportunities to create a balance. In particular, animal caretakers should be supported in their efforts to ensure maximum animal wellbeing, such as increasing enrichment and providing low-stress handling such as through animal training. Additionally, institutions should create supportive environments where caretakers can decide not to perform certain stressful activities (e.g. euthanasia of a particular animal) without fear of losing their jobs, critique from peers or management. For managers of animal facilities, it is clear there can be tension between balancing animal welfare, staff welfare and research interest on a daily basis. In order not to be under strain as a leader themselves, managers particularly need support from their management, especially in the context of safeguarding human wellbeing.

In the second part, the speakers discussed together with the audience (170 participants from the different professional groups in the field of animal research, noted at the beginning of the panel discussion event) the aspects from the keynote speeches on the three key factors and how to deal with one’s feelings and mental stress in the workplace. The speakers’ contributions to the discussion found broad approval in the auditorium.

It is clear that all professional groups in this field run the risk of work-related mental stress. Taken together, within the German animal research field, three major areas of work are needed according to the discussants:

- More awareness of the real issues surrounding work wellbeing;
- More resources to prevent work-related mental stress;
- More supportive cultures to promote work wellbeing.

This should be done in a broad approach of supportive opportunities to promote individuals' ability to cope with emotional stress in the workplace. There is a variety of ways to reach these aims. For example, training individuals in mental health first aid or compassion fatigue is beneficial. Also, working to build personal resilience, for example, by offering coaching and seminars.

### *Fostering a culture of care in animal research – rethink*

To promote the highest level of animal welfare in housing, breeding and use, a culture of care (CoC) should be promoted within every organization. Culture is the most important and most complex part of any organization as it impacts performance.<sup>23</sup> For healthcare, culture is co-created through interactions, communications, influences and collaborations between the members of an organization; it reflects the organization's values. Organizational culture therefore includes quality, safety and compassionate practice.

To improve care, it is essential to promote an appropriate internal CoC.<sup>24</sup> To build a CoC, an institution should work to create an environment where all people feel valued, including both the individuals being cared for (e.g. clients, patients) and organizational staff.<sup>3</sup> Strong values such as compassion and safety play a central role in leading and caring.<sup>3,24</sup> A CoC uses the positive psychological capital of every individual employee, including good performance, job satisfaction and organizational commitment.<sup>25</sup> The following factors are contrary to a positive CoC: high workloads including weekends and night shifts, high professional and personal demands, moral conflicts and lack of control or support, and these factors are associated with low job satisfaction, burnout, anxiety disorder and compassion fatigue, which all negatively impact caring behaviour towards patients.<sup>7,26,27</sup> Hence, a CoC must therefore also address human wellbeing in order to ensure the quality of care, but also to prevent

workplace stigmatization of those affected by mental illness.<sup>28,29</sup>

Relationships with humans are one of the most important parts of research animals' lives. Therefore, happy, well-trained people are critical for animal welfare to reduce animal stress and ultimately contribute to good science.<sup>31</sup> Hence, the presence of mental stress and compassion fatigue in animal research is concerning as they affect not only the individuals suffering from compassion fatigue, but also potentially the animals they are tasked to care for. The intertwined welfare of humans and animals underlines the concept of 'one welfare', which is a recognition of the connection of human and animal welfare.<sup>32</sup> Our German roundtable discussion results are backed up by the existing literature. LaFollette et al.<sup>14</sup> found a correlation between professional quality of life, animal stress, whether an individual has control over whether they euthanize animals they care for and method of euthanasia. Higher compassion fatigue was associated with higher animal stress, less control over euthanasia and physical euthanasia methods. On the other hand, positive human-animal interactions, such as a good quality of enrichment<sup>14</sup> or stress-free handling,<sup>33,34</sup> seem to be important links to promote both animal wellbeing and human wellbeing.<sup>14,33</sup> Interestingly, individuals who reported higher compassion satisfaction performed more often relationship-building human-animal interactions, such as, for example, naming their animals. On the other hand, this was associated with higher secondary traumatic stress as one component of compassion fatigue.<sup>14</sup>

Recently a study by Randall et al.<sup>13</sup> examined the most important work-related factors associated with feelings of compassion fatigue and subsequent coping mechanisms. Extreme or moderate compassion fatigue degree (rated by over 60% of general respondents) was associated with feeling understaffed, having good relationships with animals, lack of coping resources, lack of awareness and training of compassion fatigue, and a poor relationship with supervisors. The main coping mechanisms reported by participants in this study published by Randall et al.<sup>13</sup> were talking to someone or being away from work, self-care strategies and physical activity.

In summary, it is clear that we need to pay more attention to mental health and work wellbeing, because there is a strong relationship between culture of care and individual performance. Institutions should be committed to fostering a comprehensive culture of care that also places a high value on human wellbeing. To combat three main causes of compassion fatigue various strategies should be employed: improving animal research personnel's social support, better institutional culture of care and communication, open and

transparent communication with the public to improve understanding of animal research, and general support for work related stress. Hence, we need to rethink our 3R concept in a wider way in the progress of fostering a living CoC in animal research. While the term is widely internationally accepted as a commitment to drive and improve animal welfare with the upmost priority, recent publications also suggest that a CoC also covers ensuring research quality, promoting a transparent communication and staff wellbeing.<sup>35–38</sup> Regarding transparency, it will be important to engage more strongly in dialogue with different critical voices in society<sup>39</sup> also in events like the described panel discussion. With such a defined code of ethics, the legal and social requirements for animal welfare and animal protection can be implemented. At the same time, we achieve our own ethical requirements in treating laboratory animals. In consequence, a living CoC in animal research implements the well-known 3R principles (replacement/reduction/refinement) from Russel and Burch (1959) as the core element of directive 2010/63/EU and three further principles: reproducibility as well as responsibility and respect towards animals and humans.<sup>38</sup>

To achieve more work-related wellbeing, there is of course a need to implement institutional mental health programmes that strengthening wellbeing and promote compassion resilience.<sup>16,38</sup> Although mental health is getting more and more attention, it seems that the effort taken in educational means does not have a comparable effect in the workplace. There will be a need for more than the traditional educational concepts if knowledge and content of mental wellbeing is to be integrated into people's (work-)life sustainably. This means that a far-sighted CoC needs to be developed that, in addition to implementing the 3Rs, also ensures work competences and good work structures. How this can be achieved (best) will be subject to further studies. Overall, we conclude from the German roundtable that there is a need to address work-related mental stress within our laboratory animal science community, and to offer holistic approaches to support resilience and coping.

### Acknowledgement

The authors would like to thank all those who contributed to the creation and implementation of the roundtable and would like to thank by name Dr Bettina Kränzlin, the President of GV-SOLAS, for making it possible to address the topic of work wellbeing at the national conference for the first time and Dr Miriam Roth (animal aspects).

### Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.


### Data availability

No raw data was collected. The article reviews a public panel discussion and its outcomes. All information can be found in the manuscript. Further information can be obtained from the corresponding author.

### Ethical statement

This publication was reviewed by a member of the central ethics committee of the University of Veterinary Medicine. There was no cause for objections with regard to ethical questions.

### ORCID iD

Fabienne Ferrara  <https://orcid.org/0000-0003-3464-2725>

### References

1. Sharp LA. Part II Sacrifice: An interlude. In: *Animal ethos: The morality of human–animal encounters in experimental lab science*. 1st ed. University of California Press, Oakland, California 2019, pp.143–146.
2. Mocho JP. Many thanks to our animal caretakers and technicians. *Lab Anim* 2020; 54: 295.
3. Rafferty AM, Julia Philippou J, Fitzpatrick JM, et al. 'Culture of Care' barometer. Report to NHS England on the development and validation of an instrument to measure 'Culture of Care' in NHS Trust. National Nursing Research Unit Florence Nightingale Faculty of Nursing and Midwifery King's College London, <https://www.england.nhs.uk/wp-content/uploads/2015/03/culture-care-barometer.pdf> (2015, accessed 22 December 2021).
4. Hunt PA, Denieffe S and Gooney M. Burnout and its relationship to empathy in nursing: A review of the literature. *J Res Nurs* 2017; 22: 7–22.
5. Mathieu F. Running on empty: Compassion fatigue in health professionals, <http://compassionfatigue.org/pages/RunningOnEmpty.pdf> (2007, accessed 22 December 2021).
6. Hansen EM, Eklund JH, Hallén A, et al. Does feeling empathy lead to compassion fatigue or compassion satisfaction? The role of time perspective. *J Psychol* 2018; 152: 630–645.
7. Søvdal LE, Naslund JA, Kousoulis AA, et al. Prioritizing the mental health and well-being of healthcare workers: An urgent global public health priority. *Front Public Health* 2021; 7: 679397.
8. Figley CR. Compassion fatigue as secondary traumatic stress disorder: An overview. In: Figley CR (Ed.) *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. Brunner/Mazel Psychological stress series, no. 23. Bristol: Brunner/Mazel, 1995, pp.1–20.
9. Cocker F and Joss N. Compassion fatigue among healthcare, emergency and community service workers: A

- systematic review. *Int J Environ Res Public Health* 2016; 13: 618.
10. Scotney RL, Deirdre McLaughlin D and Keates HL. A systematic review of the effects of euthanasia and occupational stress in personnel working with animals in animal shelters, veterinary clinics, and biomedical research facilities. *J Am Vet Med Assoc* 2015; 247: 1121–1130.
  11. Mitchener KL and Ogilvie GK. Understanding compassion fatigue: Keys for the caring veterinary healthcare team. *J Am Anim Hosp Assoc* 2008; 38: 307–310.
  12. Goñi-Balentiaga O, Vila S, Ortega-Saez I, et al. Professional quality of life in research involving laboratory animals. *Animals (Basel)* 2021; 11: 2639.
  13. Randall MS, Moody CM, Patricia V, et al. Mental well-being in laboratory animal professionals: A cross-sectional study of compassion fatigue, contributing factors, and coping mechanisms. *J Am Assoc Lab Anim Sci* 2021; 60: 54–63.
  14. LaFollette MR, Riley MC, Cloutier S, et al. Laboratory animal welfare meets human welfare: A cross-sectional study of professional quality of life, including compassion fatigue in laboratory animal personnel. *Front Vet Sci* 2020; 5: 7–114.
  15. Newsome JT, Clemmons EA, Fitzhugh DC, et al. Compassion fatigue, euthanasia stress, and their management in laboratory animal research. *J Am Assoc Lab Anim Sci* 2018; 58: 289–292.
  16. Murray J, Bauer C, Vilminot N, et al. Strengthening workplace well-being in research animal facilities. *Front Vet Sci* 2020; 7: 573106.
  17. Herzog H. Ethical aspects of relationships between humans and research animals. *ILAR J* 2002; 43: 27–32.
  18. Moses L, Malowney MJ and Boyd JW. Ethical conflict and moral distress in veterinary practice: A survey of North American veterinarians. *J Vet Intern Med* 2018; 32: 2115–2122.
  19. Rollin BE. Euthanasia, moral stress, and chronic illness in veterinary medicine. *Vet Clin North Am Small Anim Pract* 2011; 41: 651–659.
  20. Kang M, Han A, Kim D, et al. Mental stress from animal experiments: A survey with Korean researchers. *Toxicol Res* 2018; 34: 75–81.
  21. Förster N. Seelsorge in Präparierkursen der Human- und Zahnmedizin und in Kursen zur Vermittlung versuchstierkundlicher Sachkompetenz. In: Hirschberg C, Freudenberg M and Plisch U-K (eds), *Handbuch Studierendenseelsorge. Gemeinde – Präsenz an den Hochschulen – Perspektiven*. Göttingen: Vandenhoeck & Ruprecht, 2021, pp.184–192.
  22. Förster N. Bericht über Seelsorge im Rahmen von FELASA B-Kursen an der Tierärztlichen Hochschule Hannover. *Spiritual Care* 2019; 9: 65–68.
  23. Azzolini E, Ricciardi W and Gray M. Healthcare organizational performance: Why changing the culture really matters. Commentary. *Ann Ist Super Sanita* 2018; 54: 6–8.
  24. West M, Steward K, Eckert R, et al. Developing collective leadership for health care. The King's Fund, <https://www.kingsfund.org.uk/publications/developing-collective-leadership-health-care> (2014, accessed 22 December 2021).
  25. Luthans F, Norman SM and Avolio JB. The mediating role of psychological capital in the supportive organizational climate – employee performance relationship. *J Organ Behav* 2008; 29: 219–238.
  26. Aiken LA, Sloane DM, Bruyneel L, et al. Nurses' reports of working conditions and hospital quality of care in 12 countries in Europe. *Int J Nurs Stud* 2013; 50: 143–153.
  27. Ball JE, Murrells T, Rafferty AM, et al. 'Care left undone' during nursing shifts: Associations with workload and perceived quality of care. *BMJ Qual Saf* 2013; 32: 116–125.
  28. Knaak S, Mantler E and Szeto A. Mental illness-related stigma in healthcare: Barriers to access and care and evidence-based solutions. *Healthc Manage Forum* 2017; 30: 111–116.
  29. Knaak S, Patten S and Ungar T. Mental illness stigma as a quality-of-care problem. *Lancet Psychiatry* 2015; 2: 863–864.
  30. Henderson C, Noblett J, Parke H, et al. Mental health-related stigma in health care and mental health-care settings. *Lancet Psychiatry* 2014; 1: 467–482.
  31. Poole T. Happy animals make good science. *Lab Anim* 1997; 31: 116–124.
  32. Pinillos RA, Appleby MC, Manteca X, et al. One welfare – A platform for improving human and animal welfare. *Vet Rec* 2016; 179: 412–413.
  33. LaFollette MR, Cloutier S, Brady C, et al. Laboratory animal welfare and human attitudes: A cross-sectional survey on heterospecific play or "rat tickling". *PLoS One* 2019; 7: 114.
  34. Hurst JL and West SR. Taming anxiety in laboratory mice. *Nat Methods* 2010; 7: 825–826.
  35. Robinson S, White W, Wilkes J, et al. Improving culture of care through maximising learning from observations and events: Addressing what is at fault. *Lab Anim*. Epub ahead of print 8 September 2021. DOI: 10.1177/00236772211037177.
  36. Robinson S, Sparrow S, Williams B, et al. The European Federation of the Pharmaceutical Industry and Associations' Research and Animal Welfare Group: Assessing and benchmarking 'Culture of Care' in the context of using animals for scientific purpose. *Lab Anim*. Epub ahead of print 19 November 2019. DOI: 10.1177/0023677219887998.
  37. Brown MJ, Symonowicz C, Medina LV, et al. Culture of care: Organizational responsibilities. In: *Management of animal care and use programs in research, education, and testing*. 2nd ed. Boca Raton (FL): CRC Press/Taylor & Francis, 2018, Chapter 2.
  38. Ferrara F. Culture of Care in der tierexperimentellen Forschung – Eine Frage der Vernetzung von Tierwohl und menschlichem Wohlbefinden, [https://www.berlinerkompakturse.de/assets/kk/downloads/programmheft/vtk\\_kompakt\\_05-20.pdf](https://www.berlinerkompakturse.de/assets/kk/downloads/programmheft/vtk_kompakt_05-20.pdf) (2020, accessed 22 December 2021).
  39. Carbone L. Open transparent communication about animals in laboratories: Dialog for multiple voices and multiple audiences. *Animals (Basel)* 2021; 11: 368.

## **Culture de soins dans la recherche sur les animaux – élargissement du concept des 3R pour inclure les personnes**

### *Résumé*

La recherche sur les animaux est essentielle au progrès scientifique et médical. Bien qu'il soit encore nécessaire de mener cette recherche, il est essentiel d'appliquer les normes les plus élevées en matière de bien-être animal, y compris en ce qui concerne l'élevage et les soins. Il est également important de reconnaître la relation spéciale qui s'établit entre les animaux de recherche et les personnes qui s'en occupent. Prendre soin des animaux de recherche peut être extrêmement satisfaisant et significatif, mais cela implique aussi des défis, en particulier lorsqu'il s'agit de prendre soin d'animaux qui éprouvent de la douleur ou de la détresse. Ces défis peuvent entraîner un stress mental lié au travail. Pour mieux comprendre les défis de la recherche sur les animaux, nous avons organisé une table ronde à la conférence GV-SOLAS et IGTP 2021 sur le bien-être au travail. Cette discussion était la première du genre en Allemagne. Les contributions actives du panel comprenaient le point de vue d'un philosophe éthique, d'un scientifique, d'un conférencier en science des animaux de laboratoire, d'un gestionnaire d'installations animales et d'un gardien d'animaux. De leur point de vue, ils ont donné un aperçu des facteurs clés qui peuvent affecter le bien-être humain dans le cadre de la recherche menée sur des animaux. Les idées clés comprenaient la stigmatisation du travail, la tension entre les objectifs de recherche et le bien-être animal, et l'importance d'une culture de soutien pour surmonter les difficultés liées au travail », ainsi que le manque d'éducation et d'environnements favorables pour faire face au stress émotionnel sur le lieu de travail. Dans l'ensemble, la discussion a montré que nous devons également promouvoir le bien-être humain lors de la promotion de la culture des soins (CdS) dans la recherche sur les animaux, car il existe une relation forte entre celle-ci et la performance individuelle.

## **Kultur der Fürsorge in der tierexperimentellen Forschung – Ausweitung der 3R unter Berücksichtigung des Menschen**

### *Abstract*

Die tierexperimentelle Forschung ist für die Wissenschaft und den medizinischen Fortschritt unerlässlich. Die Durchführung dieser Forschung ist weiterhin erforderlich, doch müssen dabei höchste Tierschutznormen, einschließlich Tierhaltung und -pflege, eingehalten werden. Darüber hinaus ist es wichtig, die besondere Beziehung zwischen Versuchstieren und den Menschen, die sich um sie kümmern, zu berücksichtigen. Die Pflege von Versuchstieren kann höchst erfüllend und sinnstiftend sein, aber sie bringt auch Herausforderungen mit sich, vor allem wenn Tiere dabei Schmerzen oder Leiden erfahren. Diese Herausforderungen können zu arbeitsbedingtem psychischem Stress führen. Um mehr Einblick in die Herausforderungen bei der Arbeit in der Tierforschung zu erhalten, haben wir auf der GV-SOLAS- und IGTP-Konferenz 2021 eine Podiumsdiskussion über das Wohlbefinden bei der Arbeit organisiert. Diese Diskussion war die erste ihrer Art in Deutschland. Die aktiven Podiumsbeiträge umfassten die Sichtweise eines Philosophen und Ethikers, eines Wissenschaftlers, eines Dozenten für Versuchstierkunde, eines Tiereinrichtungsleiters und eines Tierpflegers. Sie gaben aus ihrer Sicht Einblicke in Schlüsselfaktoren, die das menschliche Wohlbefinden in der Tierforschung beeinträchtigen können. Zu den wichtigsten Aspekten gehörten die Stigmatisierung der Arbeit, das Spannungsverhältnis zwischen Forschungszielen und dem Wohlergehen der Tiere und die Bedeutung einer unterstützenden Kultur zur Überwindung arbeitsbedingter Belastungen sowie der Mangel an Ausbildung und unterstützende Umgebungen zur Bewältigung von emotionalem Stress am Arbeitsplatz. Insgesamt hat die Diskussion gezeigt, dass wir bei der Förderung einer Kultur der Fürsorge (Culture of Care, CoC) in der tierexperimentellen Forschung auch das menschliche Wohlbefinden verbessern müssen, denn es besteht ein enger Zusammenhang zwischen CoC und individueller Leistung.

## **La cultura del cuidado en la investigación con animales – Ampliación de las 3R para incluir a las personas**

### *Resumen*

La investigación con animales es fundamental para la ciencia y los avances médicos. Si bien es necesario llevar a cabo esta investigación, es esencial aplicar los más altos estándares de bienestar animal, incluidos la cría y el cuidado de los animales. Asimismo, es importante reconocer la relación especial entre los animales de investigación y las personas que los cuidan. El cuidado de los animales de investigación puede ser muy satisfactorio y significativo pero también conlleva desafíos, especialmente cuando se trata de animales que sienten dolor o angustia. Estos retos pueden provocar estrés mental relacionado con el trabajo. Para conocer mejor los retos que supone trabajar en la investigación con animales, organizamos una mesa redonda en la conferencia 2021 de GV-SOLAS e IGTP sobre el bienestar laboral. Este debate fue el primero de este tipo en Alemania. Las contribuciones activas del panel incluyeron el punto de vista de un filósofo ético, un científico, un profesor de ciencia de animales de laboratorio, un gerente de instalaciones de animales y un cuidador de animales. Desde su punto de vista, expusieron los factores clave que pueden afectar al bienestar humano durante la investigación con animales. Las ideas clave fueron la estigmatización del trabajo, la tensión entre los objetivos de la investigación y el bienestar de los animales, así como la importancia de una cultura de respaldo para superar las tensiones relacionadas con el trabajo, así como la falta de educación y de entornos de apoyo para hacer frente al estrés emocional en el lugar de trabajo. En general, el debate ha servido para poner de manifiesto que también debemos promover el bienestar humano cuando fomentamos la cultura del cuidado (CoC) en la investigación con animales, ya que existe una fuerte relación entre la CoC y el rendimiento individual.