

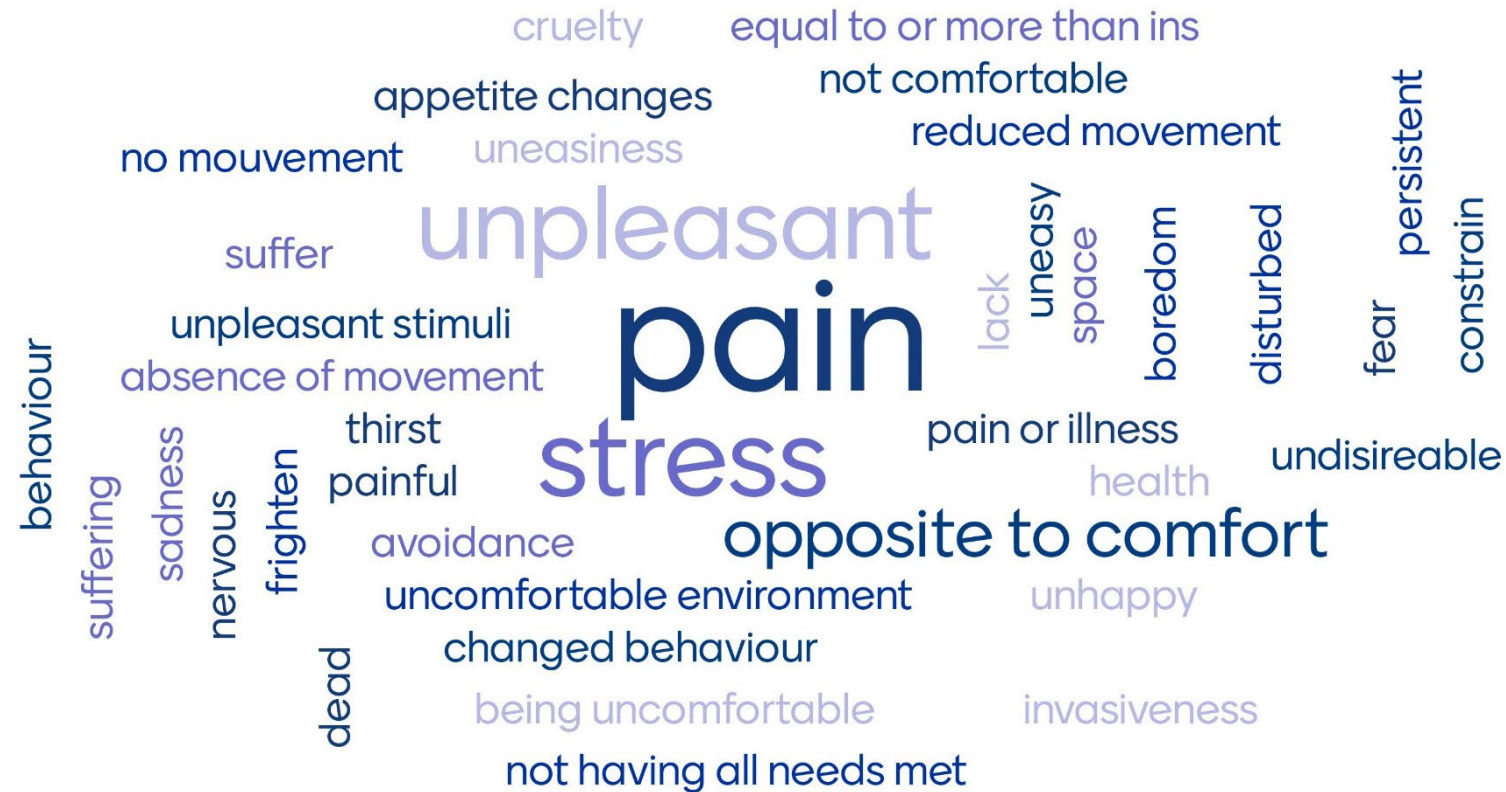
Conceptualization of “animal discomfort” using the domestic pig (*Sus scrofa*) as model





How do you interpret animal discomfort?

62 responses



Study aim



Operational definition of “animal discomfort” using the domesticated pig as a model

Walker and Avant (2005) concept analysis method

→ Dissection of a concept into simpler elements to promote clarity

Materials and methods

- Search for documents published in English in Scopus data base until June 2023
- Keywords: "ANIMAL" and "DISCOMFORT" and "DEFIN*"
- Initial N = 2,594 publications (scientific manuscripts, book chapters, and reviews)
- Publications fully screened using the following criteria:
 1. Discomfort defined and/or measured in animals
 2. Pain, Suffering, or Sickness defined and/or measured in pigs only
- Final N = 118 publications (25 presenting a definition of discomfort or related states; 93 only presenting measures of discomfort)

Literature uses of animal discomfort

Body lesions
Mobility restriction
Fatigue
Pain

Physical /
sensory
discomfort

Physiological
discomfort

Hunger
Malaise
Metabolic disorders
Thirst

Mental
discomfort

Anxiety
Boredom
Fear
Frustration

Previous definitions of discomfort



Credit: American Nurse Journal



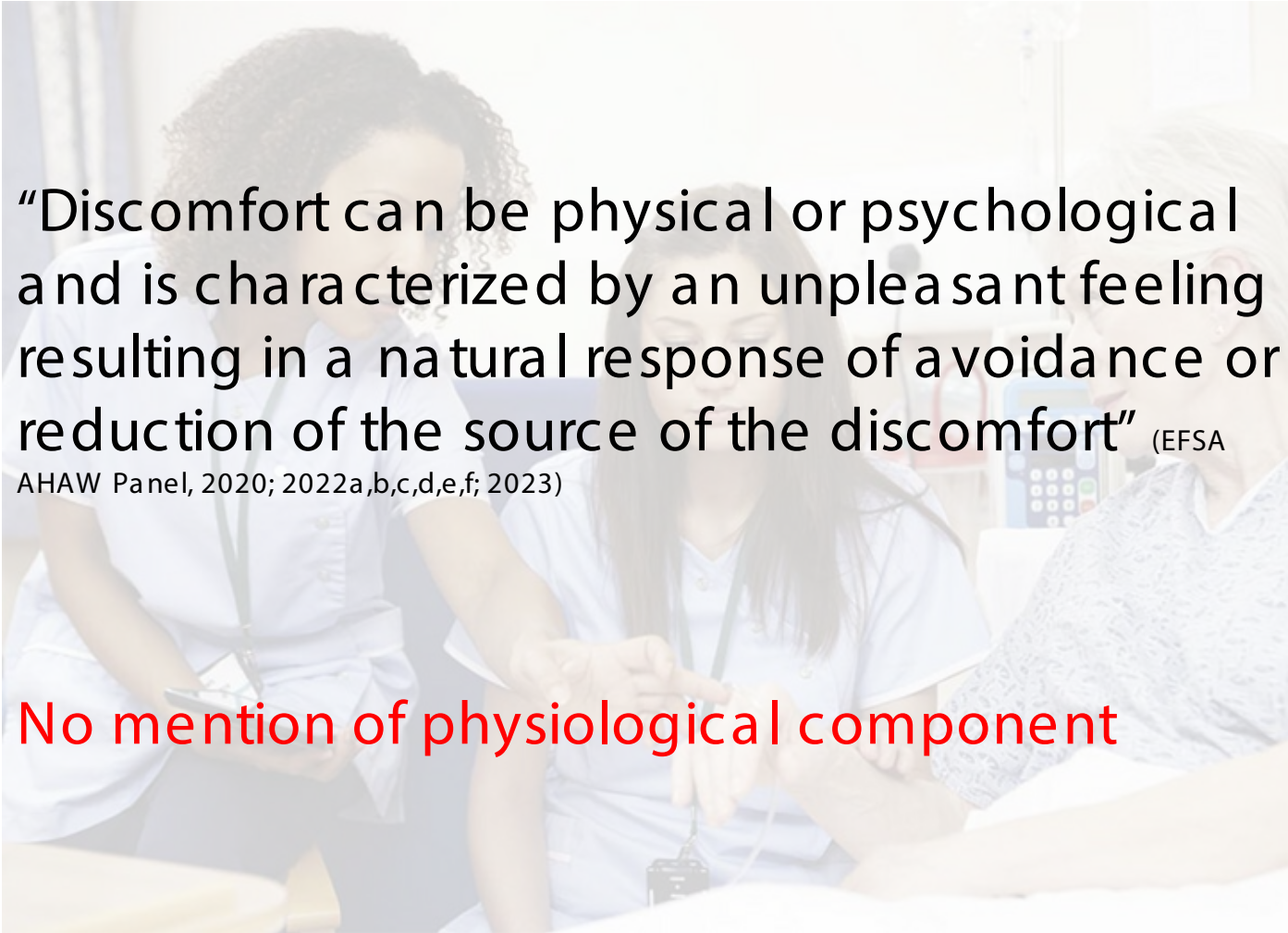
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POSTDOC



Previous definitions of discomfort



“Discomfort can be physical or psychological and is characterized by an unpleasant feeling resulting in a natural response of avoidance or reduction of the source of the discomfort” (EFSA AHAW Panel, 2020; 2022a,b,c,d,e,f; 2023)

No mention of physiological component

Previous definitions of discomfort



Credit: Pig progress



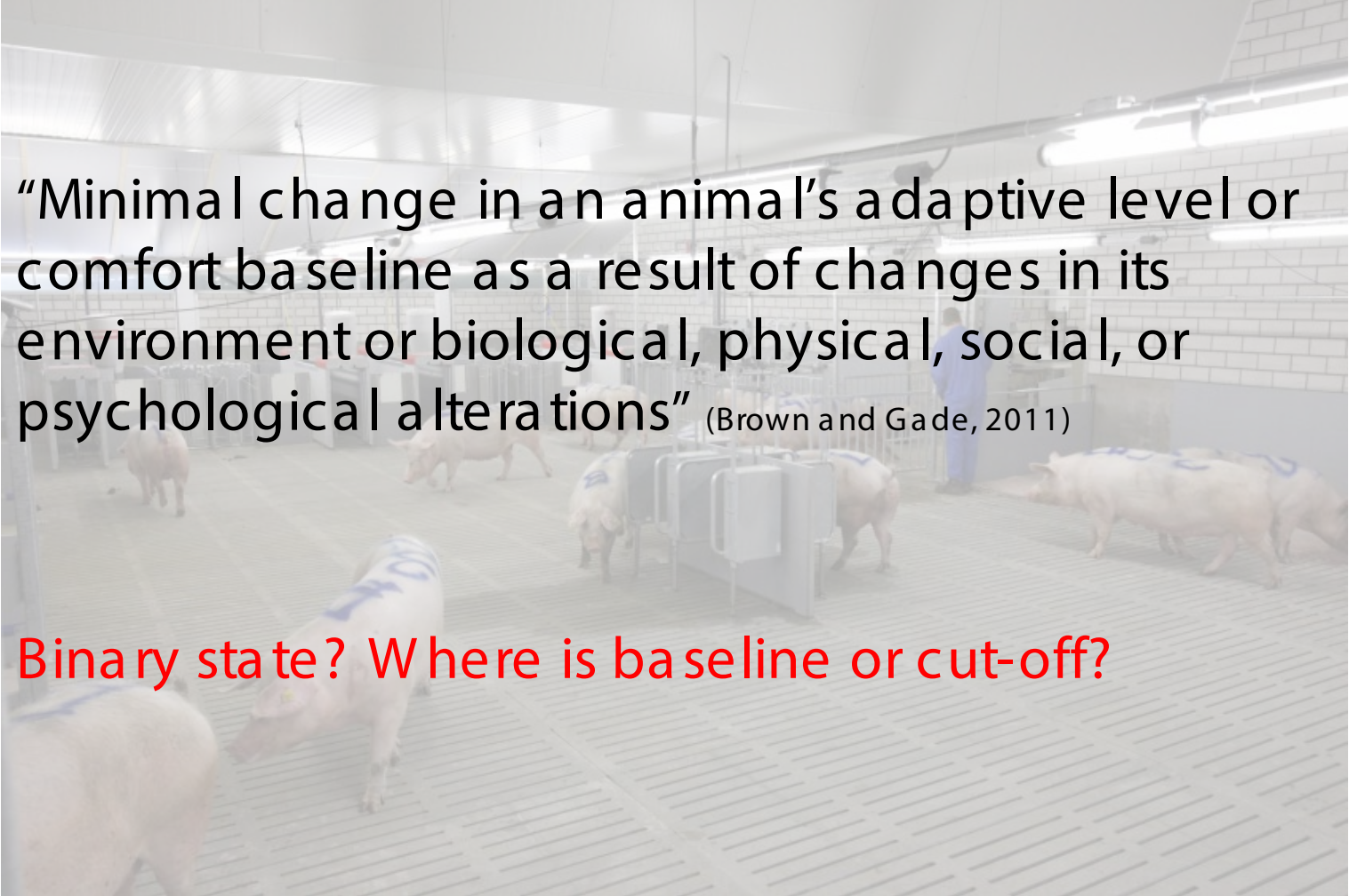
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Previous definitions of discomfort



“Minimal change in an animal’s adaptive level or comfort baseline as a result of changes in its environment or biological, physical, social, or psychological alterations” (Brown and Gade, 2011)

Binary state? Where is baseline or cut-off?



Antecedents and consequences

Antecedents: events eliciting mild-to-severe negative emotional experiences

- Physical (e.g., pain, body lesions, limited movement)
- Physiological (e.g., nutrient deficiency, impaired metabolism)
- Mental (e.g., social isolation, handling, novelty)

Consequences: animals' attempts to evade or minimize the source(s) of this affective state

Defining attributes

Attributes

Physical or mental negative state

Unpleasant sensory or emotional experience

Homeostatic mechanisms challenged by environmental changes and consequent biological, physical, or mental alterations

Behavioral signs of avoidance or attempt to reduce the source of discomfort

Model case – Pigs kept in metabolic cages



Model case – Pigs kept in metabolic cages

Physical/Mental features

- Restricted space
- Thwarted behavior repertoire
- Social isolation

Challenged homeostasis

- Sudden and relatively long-lasting change in housing

Unpleasant emotional experience

- Human handling
- Insertion of catheters

Behavioral signs of avoidance

- Bar-biting / -chewing
- Vocalisations



Credit: Guilherme A. Franchi



Operational definition of animal discomfort

“Short- or long-lived negative affective state featured by physical, physiological and/or mental components, induced by internal or external stimuli, ranging from mild to severe, potentially occurring together with other negative affective states, and leading to avoidance or attempt to alleviate the source of uneasiness.”



Implications

- Standardized application and comprehension of the concept
- Accurate use and development of measures to quantify discomfort
- Improve legislation consistency and research integrity

<https://www.pigweb.eu/policypapers>

Harmonization of pig research

PIGWEB aims to contribute to the goals of the European Green Deal and the 'Farm to Fork' strategy, by strengthening the pig research community and developing solutions for sustainable pig production systems. One challenge is variation in transposition of the European Directive on the protection of animals used for scientific purposes into national legislation. This variation can hinder scientific progress and raise ethical concerns. To harmonize pig research, we propose three key recommendations.



Acknowledgements



Mette Herskin, AU



Heleen Boswijk, WUR



Marc Bagaria, IRTA



Emma Fabrega, IRTA



Rebecka Westin, SLU



Disclaimer: the PIGWEB project has received funding from European Union's Horizon 2020 research and innovation program under Grant Agreement No 101004770.



Livestock Science
Volume 286, August 2024, 105524



Animal discomfort: A concept analysis using the domesticated pig (*Sus scrofa*) as a model

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<https://doi.org/10.1016/j.livsci.2024.105524> 

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