We read with interest the paper of Nicholls et al. 2022 ("Use of mechanical thresholds in a model of feline clinical acute pain and their correlation with the Glasgow Feline Composite Measure Pain Scale scores"), in which mechanical threshold data (obtained with a SMALGO algometer) and pain scale score data (using the Glasgow Feline Composite Measure Pain Scale, CMPS-Fel) were collected from female cats undergoing ovariohysterectomy surgery.[1]

We have concerns that the study misrepresents the value of behavioural scoring in feline practice. The International Association for the Study of Pain provides definitions for pain and nociception.[2] Pain is defined as, "An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.". Nociception is defined as "The neural process of encoding noxious stimuli." In the notes accompanying the definition of pain it is stated that "Pain and nociception are different phenomena".

Mechanical threshold testing to identify hypersensitivity is an assessment of nociception and cannot truly resolve the multidimensional experience that is pain.[3] Animals may display a variety of behaviours in response to application of the SMALGO probe tip, such as those described by the authors ("vocalisation, head turning towards the stimulation site, back muscle contraction, hissing and attempting to bite, scratch or escape"). However, behavioural consequences of nociception, whether they be withdrawal reflexes or more complex nocifensive behaviours do not necessarily imply the presence of pain.

In contrast to nociceptive threshold testing, the CMPS-Fel was developed as a behavioural assessment instrument to measure pain in cats. The items included in the scale align with the IASP definition of pain as they have the potential to reveal the emotional experience. However, as pain scales are used and studied, it is likely that we learn more about their strengths and limitations. It has been shown that cats that are less interactive (e.g. nervous, shy, aggressive) may be assessed as painful because they can exhibit behaviours that are assigned higher scores on the CMPS-Fel (such as crying, hissing, lack of response to stroking) (Buisman et al. 2017).[4] Buisman et al. found that clinically healthy and pain-free cats exhibiting such behaviours pre-operatively continued to be assigned elevated pain scores post-operatively i.e. these behaviours interfered with pain assessment. Nicholls et al. allude to this possibility in their discussion, where they suggest that elevated CMPS-Fel scores could result from cats cowering or growling during assessment. They reported 5 cats that had elevated pain scores (>5) pre-operatively; however, rather than exclude these cats from the study, they remained in the study and contributed to the final dataset. If their scores remained artificially elevated throughout the study, as predicted by Buisman et al. (2017), this could partly explain the variability observed in the CMPS-Fel data. Additionally, the analgesic strategy in the study would have resulted in the majority of animals feeling no to mild pain. Is it therefore perhaps unsurprising that the majority of CMPS-Fel scores were below threshold post-operatively and hence equivocal when compared to mechanical thresholds.

When applying a behavioural pain scale, such as the CMPS-Fel, it is important to adhere to the scale items, as described. Varying from these, such as awarding a score that differs from the behaviour being expressed, invalidates the scale. From the authors' description of how the CMPS-Fel was applied by the two evaluators, it is apparent that subjectivity and potentially bias were introduced when at least one of the evaluators was selective in how behaviours were scored. This could easily explain the low agreement

coefficients observed and may be a more likely explanation than the concern of low repeatability raised by the authors. Related to this, the assumption that elevated CMPS-FeI scores "should not be possible for presumably non-painful cats", suggests a misunderstanding of the absolute ability of the scale to classify painful vs non-painful cats and may indicate the presence of evaluator bias. One way to reduce this risk is for evaluators to be blinded to (unaware of) the testing time point (pre vs post-op). This adds some complexity to the methods (pre-operative clipping and dressing application) but has been done in other studies. Evaluator blinding would have also reduced the risk of bias associated with evaluating the subjective outcomes during SMALGO testing.

We recognise the difficulties inherent in feline pain assessment and agree with the authors that robust prospective studies are required to refine novel pain assessment methodologies. However, we feel that the focus on the limitations of the CMPS-FeI as a measure of pain in Nicholls et al. are unwarranted given the limitations, risk of bias, and the choice of a nocifensive measure as a comparator in their study.

References

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