Cureus

# Psychometric testing and validation of the italian version of the Helsinki Chronic Pain Index in dogs with pain related to osteoarthritis

**Open Access**
**Abstract**
**Published 09/06/2023**



Giorgia Della Rocca [1] , Carlo Schievano [2] , Alessandra Di Salvo [3] , Maria Federica Della Valle [4]

1. Research Center on Animal Pain, Department of Veterinary Medicine,, University of Perugia, Perugia, ITA 2. Statistician, Innovative Statistical Research SRL, Padua, ITA 3. Research Center on Animal Pain, Department of Veterinary Medicine, University of Perugia, Perugia, ITA 4. CeDIS (Centro di Documentazione e Informazione Scientifica), Innovet Italia SRL, Saccolongo (Padua), ITA

**Corresponding author:** Giorgia Della Rocca, giorgia.dellarocca@unipg.it

**Categories:** Pain Management
**Keywords:** pain in animals, helsinky chronic pain index

**How to cite this abstract**
Della Rocca G, Schievano C, Di Salvo A, et al. (September 06, 2023) Psychometric testing and validation of the italian version of the Helsinki Chronic Pain Index in dogs with pain related to osteoarthritis. Cureus 15(9): a1017

## Abstract

Introduction

As clearly addressed by the 2020-revised IASP definition of pain, verbal description is only one of several behaviors to express pain (1). Like non-verbalizing human beings, dogs (and pets in general) cannot self-report their pain, which in no way negates they could experience pain. Osteoarthritis (OA) is the major source of chronic pain in dogs of any age and breed. Recognizing and assessing pain in OA dogs is essential for the proper treatment. Canine OA pain needs to be evaluated indirectly by the veterinarian, the owner(s) or other caregivers. To limit subjective interpretation, specific questionnaires (Clinical Metrology Instruments - CMIs) are entering veterinary clinical practice as semi-objective tools for estimating pain intensity. For a CMI to be considered suitable, it must undergo tests which confirm its main psychometric properties. Moreover, to be used in another language, it must be properly translated and again psychometrically tested, to ensure that the meaning and intent of the original items are maintained (2). Helsinki Chronic Pain Index (HCPI) is a validated, owner-based, 11-item CMI for assessing chronic pain in dogs with OA (3).

The present study was aimed to develop an Italian version of the HCPI (I-HCPI) and test its psychometric properties, i.e., criterion and construct validity, responsiveness, and reliability.

Methods

Forty healthy dogs and 87 dogs with mild-to-severe OA pain were recruited. After a thorough process of translation and back-translation, I-HCPI was administered to the dogs' owners.

For construct validity assessment, Wilcoxon rank-sum test was used to compare I-HCPI scores in healthy animals with those obtained in painful dogs. Convergent validity (a subtype of construct validity) was investigated with correlations between I-HCPI and Quality of Life (QoL) scores using Spearmen's correlation. Criterion validity was evaluated against a validated CMI assessing dog's chronic pain (i.e., the Italian version of the Canine Brief Pain Inventory, I-CBPI) using Pearson's correlation. To assess for responsiveness, pre- and post-treatment (meloxicam) scores were compared with Wilcoxon signed-rank test. For reliability, internal consistency was evaluated by use of the Cronbach α value.

Results

Construct validity was confirmed by a statistically difference in scores obtained in healthy and painful dogs ($P < 0.0001$). Strong correlation with QoL scores ($P < 0.0001$) and with CBPI total score ($P < 0.0001$) was found, thus supporting convergent and criterion validity. Finally, the statistically significant difference of I-HCPI scores before and after treatment ($P < 0.0001$) and the Cronbach α value = 0.96 confirmed responsiveness and reliability, respectively.

Conclusions

The study confirmed the main psychometric properties of the I-HCPI. The present validation of the I-HCPI provides Italian speaking veterinarians a new reliable tool to measure and monitor chronic pain related to OA in dogs.

References

1. Raja SN et al. Pain. 2020;161:1976-82.
2. Sperber AD. Gastroenterology 2004;126:124–8
3. Hielm-Björkman AK et al. Am. J. Vet. Res. 2009;70:727-34.