Development and validation of the canine neonatal vitality score (CNVS)
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No validated scoring systems, similar to the human Apgar score, for evaluation of newborn puppies exist for either a research or clinical setting. The objective of this study was to develop a validated scoring system that had a Cronbach’s alpha of greater than 0.7 and a significant correlation to resuscitation outcome. Initial data were collected from 129 puppies from four clinics and the CNVS was the result. This CNVS scoring system was then re-distributed to four clinics (one differed) and applied to 113 additional puppies. Each category (heart rate, respiratory effort, mucus membrane color, activity and muscle tone, suckle reflex, and lumbosacral stimulation) received a value of 0-2 points for a possible 12 total. Following factor analysis, the CNVS was considered valid with a Cronbach's alpha of 0.93. Convergent validity was tested using correlations to outcome. The total CNVS value was moderately inversely correlated with the length of time the puppy was stimulated (rho= -0.5803, p<0.00001) and the number of interventions needed to revive the puppy (rho= -0.6267, p<0.00001). This study demonstrates that the new CNVS is a valid score that can be used for either clinical or research settings. Future investigations should include the ability of the CNVS to assess change in puppies over time and to predict short and long term survival and morbidity.

Keywords: Neonatal vitality score, puppy, scoring system, resuscitation