Evaluating physiological stress in Asiatic black bears (Ursus thibetanus) rescued from bile farms in Vietnam

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Abstract

Asiatic black bears (Ursus thibetanus) face chronic stress in bile farms. In this study, we investigated whether bile-farmed bears show significantly high levels of stress at rescue and whether stress levels reduce over time in a bear sanctuary where the bears are supported with environmental enrichment and veterinary care to improve animal welfare. We measured stress hormone levels using faecal cortisol metabolites (FCM) in 16 Asiatic black bears freshly rescued from bile farms in Vietnam. Fresh faeces were collected from each bear on the rescue truck and on a weekly basis for a 22-week study period at a bear sanctuary in Vietnam. Results showed that for all 16 rescued bears (with one exception) individual FCM levels from truck samples were above mean baseline FCMs of bears previously rehabilitated to a bear sanctuary. This suggested the majority of the rescued bears were still capable of showing a stress endocrine response during the rescue operation despite being exposed to conditions causing chronic stress in bears on bile farms. Results showed that mean FCM levels of the rescued bears differed significantly between time-periods (higher at the rescue [on truck samples] compared to week 22 samples) and mean FCM levels showed an overall decline over the first 22 weeks after they arrived at the bear sanctuary. The bears also demonstrated acute FCM stress responses to management interventions at the sanctuary, such as veterinary health checks and transportation. In conclusion, rescued bears tend to modulate their stress endocrine response after rehoming at the bear sanctuary. This is an important result, indicating that the rescue effort and rehabilitation of bile-farm bears is effective. Whether this also coincides with behavioural adjustments in rehabilitation bears (eg lessening of stereotypic behaviour) warrants further investigation.

Keywords: animal welfare, bear bile farming, rehabilitation, rescue, stress, Ursus thibetanus

Introduction

Asiatic black bears (Ursus thibetanus), also known as Himalayan black bears, moon bears and Tibetan black bears, are one of eight world bear species belonging to the Ursidae family. One of the major threats to the declining population of Asiatic black bears is bear bile farms, fuelled by the increasing demands for bear bile and bear parts for use in traditional Chinese medicine (Huygens et al 2003; Kikuchi 2012). Across Asia, multiple countries engage in bear farming and as many as 12,000 bears have been estimated to be housed in both illegal and legal bear farms (Bekoff 2009). Though some farms rely on captive breeding to provision bear products, many still depend on the capture of wild bears to support trade and risk natural populations. The welfare of bears on these ‘farms’ is generally considered very poor because bears are housed in small cages where they lack social or other forms of enrichment, receive poor nutrition, are exposed to surgical trauma and have a high risk of disease (Loeffler et al 2009).

Consequently, bears are often thought to be highly stressed, but the limited access to these facilities has made it difficult to quantify the extent of this stress (Malcolm et al 2013). Although bear-bile farming practice became illegal in Vietnam from 1992, the Ministry of Agriculture and Rural Development reported in 2015 that 1,245 bears were kept in small-scale bear-bile farms in Vietnam (Animals Asia Foundation 2015). As bear-bile farming is a sensitive issue, access to these ‘farms’ is extremely limited, resulting in a lack of systematic examinations of the bear-bile farming industry and its effects on the farmed bears’ physiology. However, there is a handful of documented evidence of the impacts that bile farms have on the ethology of farmed bears (Maas 2000; Malcolm et al 2013).

A key initiative, alongside legislation to outlaw bear-bile farming, is for government or non-government organisations to remove incarcerated bears and relocate them into designated sanctuaries that offer considerably better environmental conditions and the provision of routine veterinary interventions at the sanctuary, such as veterinary health checks and transportation. In conclusion, rescued bears tend to modulate their stress endocrine response after rehoming at the bear sanctuary. This is an important result, indicating that the rescue effort and rehabilitation of bile-farm bears is effective. Whether this also coincides with behavioural adjustments in rehabilitation bears (eg lessening of stereotypic behaviour) warrants further investigation.