

APPROACH TO CARDIOVASCULAR DISEASE IN CAPTIVE GREAT APES

INTRODUCTION

Nowadays, cardiovascular disease (CVD) is thought to be one of the main causes of morbidity and mortality among captive great apes and the most frequent cause among captive chimpanzees.¹ However, little is known nor has been written about its etiology, diagnosis and treatment.^{2,3}



Figure 1. Specimens of great apes of different genera. (A): *Pan troglodytes ssp. schweinfurthii*. (B): *Gorilla gorilla ssp. gorilla*. (C): *Pongo pygmaeus ssp. wurmbii*. iNaturalist.

Objectives:

Investigate the real impact of CVD on captive great apes. In line with this:

- Which factors influence the onset of disease.
- The real importance of interstitial myocardial fibrosis.
- Whether chimpanzees are the most affected species.
- The diagnostic tools and treatments described.

Materials and Methods:

Rehabilitation centers and associations

Fundació MONA,
Rainfer and Primadomus

Asociación
Primatológica Española

Bibliographic research

Pubmed

Experts in the subject

Veterinarians,
pathologists and
other experts

Professional experience,
articles and book chapters

Table 1. Amount of literature coverage dedicated to each etiology, displayed as percentage of total.⁴

Etiologic category	% of total
Behavioral/psychological	5%
Degenerative	6%
Husbandry related	5%
Idiopathic	17%
Infectious	36%
Neoplastic	9%
Vascular	6%

Table 2. Amount of literature coverage dedicated to each body system, displayed as percentage of total.⁴

Body system category	% of total
Behavioral	6%
Cardiovascular	18%
Endocrine	5%
Gastrointestinal	12%
Generalized-multi-system	18%
Musculoskeletal	8%
Neurological	7%
Respiratory	11%

RESULTS

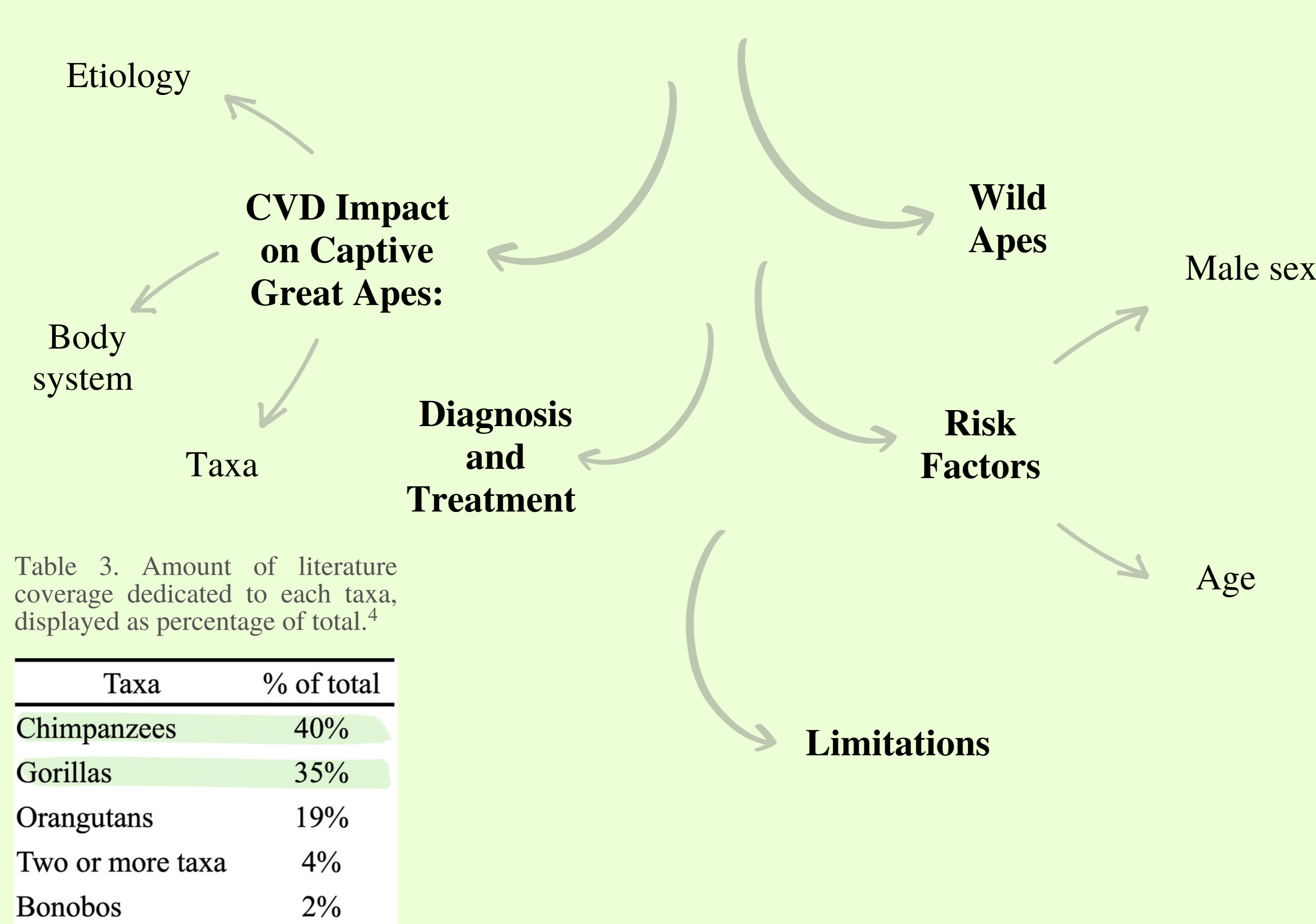


Table 3. Amount of literature coverage dedicated to each taxa, displayed as percentage of total.⁴

Taxa	% of total
Chimpanzees	40%
Gorillas	35%
Orangutans	19%
Two or more taxa	4%
Bonobos	2%

Table 4. Variation in risk of death as a result of CVD depending on sex, for all taxa combined.⁵

	ALL TAXA	
	♂	♀
Number of deaths		
n/total	42/93	22/117
%	45%	19%
Relative risk	2,4	

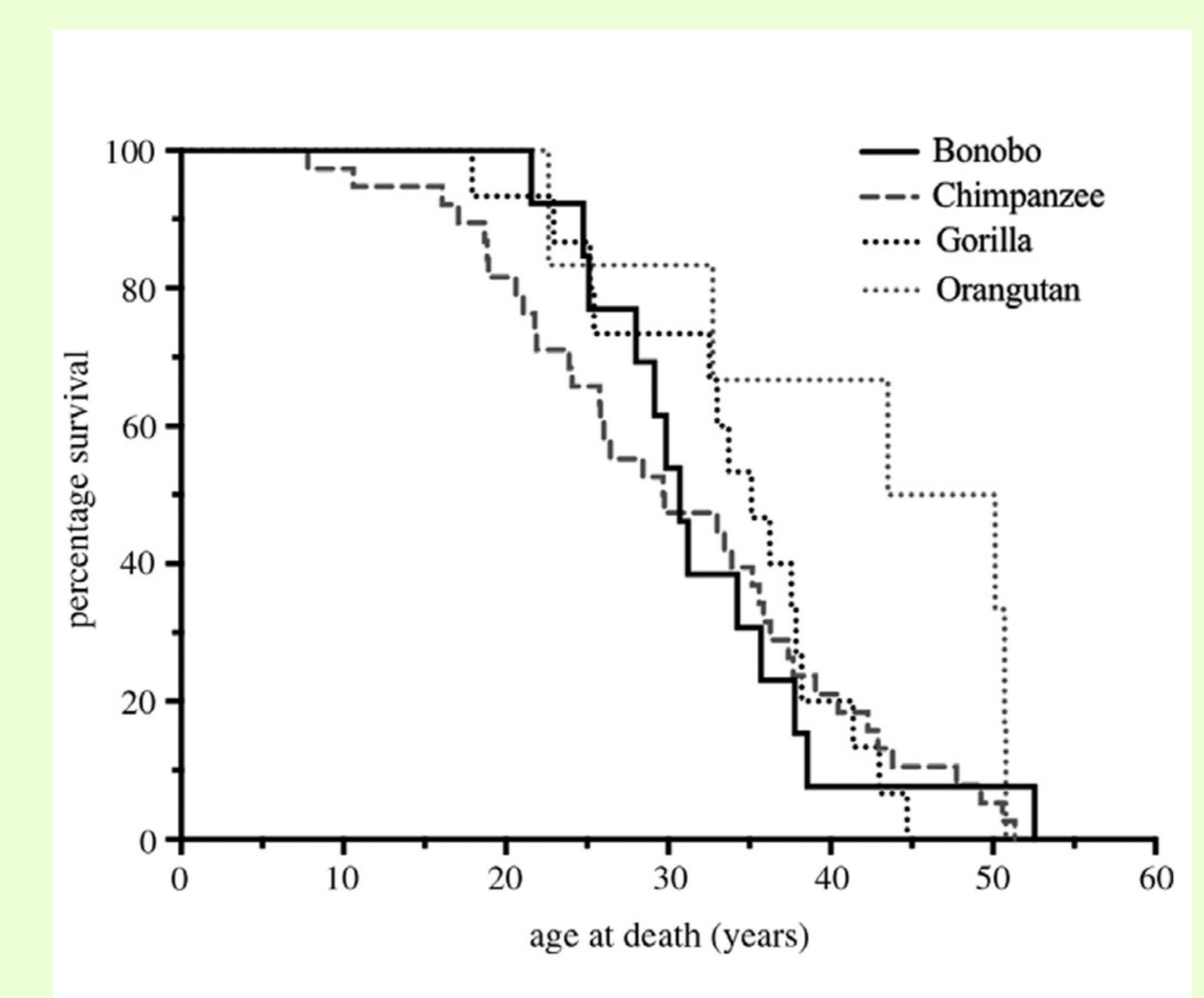


Figure 2. Age at death as a result of CVD across captive great apes.⁵

CONCLUSIONS

- To date, the impact of CVD on captive great apes is unknown.
- Infections are the main etiology of disease in the studied populations of great apes, followed by idiopathic diseases.
- Chimpanzees are the species of great apes on which more research has been done regarding CVD, and on which the greatest impact of this has been reported.
- Male sex and age are two risk factors for CVD in great apes.
- In the absence of a validated diagnostic protocol, it is difficult to quantify the impact of CVD on great apes in captivity.

References:

