













Abstract

Depression in cancer survivors: the role of companion animal

Maria Paula Mota ^{1,2*}, Catarina Freitas Martins ¹, Jorge Pinto Soares ¹, Luís Azevedo ¹, Graça Monteiro ^{1,2}, Catarina Abrantes ^{1,2}, Maria da Graça Mota ³, Mariana Jesus ³, Eduarda Coelho ¹, Sandra Fonseca ¹, Luís Cardoso ^{4,5}, Maria dos Anjos Pires ^{4,5}

¹ Department of Sports, Exercise and Health, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal

² Research Center in Sports, Health and Human Development, CIDESD, Vila Real, Portugal

³ Unidade de Cuidados Primários de Saúde Bastulos, UCSPBASTULOS, ARS Norte, Celorico de Bastos, Portugal

⁴ Animal and Veterinary Research Centre (CECAV), Vila Real, Portugal

⁵ Department of Veterinary Sciences, School of Agrarian and Veterinary Sciences, University of Trás-os-Montes and Alto Douro (UTAD), Vila Real, Portugal

*E-mail: mpmota@utad.pt

Conflict of interest: nothing to declare. **Funding:** This work was funded by the R&D&I project “oneHcancer – One health approach in animal cancer”, the operation no.: NORTE-01-0145-FEDER-000078, co-funded by the European Regional Development Fund (ERDF) through NORTE 2020 (North Portugal Regional Operational Program 2014/2020)

It has been suggested that living with a pet reduces psychological stress, isolation, and loneliness while increasing social support and communication (Martins et al., 2023). Regarding cancer survivors, depression is one of the most common psychiatric diagnoses, so it may be hypothesised that these patients can benefit from a pet company. Nevertheless, an issue that should be considered in this human-animal bond relation is the attachment to a pet. This study aimed to analyse the attachment to pets in cancer survivors, considering their level of depression. The survey sample was conducted by mail and social media, with the support of LPCC and AAPC, and included subjects living in different parts of Portugal. Eighty-two cancer

survivors aged between 28 and 71 years (\bar{x} =47.9; SD=8.6; 97.6% female, 2.4% male) were included in this study. Sociodemographic data (including age, gender, having a pet, and living alone or accompanied), Depression Beck scale (Campos & Gonçalves, 2011) and attachment to pets (Lexington pet scale) (Miranda, 2015) were collected. Afterwards, subjects were divided into two groups: pet owners (PO, n=60) and non-pet owners (NPO, n=22). Eighty women and 2 men participated in the sample. Eleven volunteers lived alone, and the remaining one lived with others. Cancer was identified over more than 5 years in 24% of the sample, and 54% were not under treatment. Total sample depression scores were 15.1 (\pm 11.4), with 14.3 (\pm 8.2) for NPO and 15.4 (\pm 12.4) for PO. No difference in depression levels was found between cancer survivors who live alone or those accompanied. Between PO, the average attachment value to pets was 90.6 (\pm 13.0; 47 to 115). A positive and significant association was found between depression and the attachment to pets (ρ =0.266; p <0.05). The depression levels of this sample suggest that they have emotional support. Moreover, our results pointed out that the existence of a pet may contribute to face depression due to human-animal interaction, providing emotional support and improving the mental well-being of the owners.

Keywords: cancer survivors; depression; companion animal

Acknowledgements

We would like to acknowledge Liga Portuguesa contra o Cancro (núcleo regional do norte) and *Associação Apoio à Pessoa com Cancro* for the divulgation and encouragement of study participation.

References

- Campos, R. C., & Gonçalves, B. (2011). The Portuguese Version of the Beck Depression Inventory-II (BDI-II). *European Journal of Psychological Assessment*, 27(4), 258–264. <https://doi.org/10.1027/1015-5759/a000072>
- Martins, C. F., Soares, J. P., Cortinhas, A., Silva, L., Cardoso, L., Pires, M. A., & Mota, M. P. (2023). Pet's influence on humans' daily physical activity and mental health: A meta-analysis. *Frontiers in Public Health*, 11. <https://www.frontiersin.org/articles/10.3389/fpubh.2023.1196199>
- Miranda, M. I. (2015). A importância do vínculo para os donos de cães e gatos nas famílias portuguesas. Relatório Final de Estágio Mestrado Integrado em Medicina Veterinária. Instituto de Ciências Biomédicas Abel Salazar da Universidade do Porto.