Research has indicated possible rises in global mental health difficulties during the COVID-19 pandemic. One such cause may be social isolation which could be mitigated through the company of pet animals. This study aimed to examine the impact of pet presence and human-pet attachment on human mental health over the course of one year during the pandemic. 85 participants completed an online survey comprised of standardised mental health measures (DASS-21, PANAS, PGWBI) and the Lexington Attachment to Pets Scale (LAPS) at 3 time-points over lockdown in 2020. 45 participants completed a 4th and final survey during another lockdown in 2021. We also collected qualitative data through open-text responses. The findings show that compared to non-pet owners, pet owners scored significantly higher on stress and negative affect at time 1 and significantly higher on stress and anxiety at time 4. Pet attachment levels remained the same over time. Regression analysis found that high attachment to pets significantly predicted higher stress and anxiety and lower psychological wellbeing at time 1. No significant regressions were found for time 2 or 3 (low number of restrictions). At time 4, high attachment to pets significantly predicted higher stress, anxiety and depression and lower psychological wellbeing. These findings suggest that for the participants in our study, during a full lockdown (times 1 and 4), having a pet, and particularly being highly attached to a pet, predicted poorer mental health, potentially due to unique hardships related to pet ownership during the pandemic. This was not corroborated by our qualitative findings where no negative impacts of pets were reported. It is important that we continue to monitor the long-term impact of the pandemic and related stressors on the human-pet relationship.