

7-22-2022

The impact of service dogs on objective and perceived sleep quality for veterans with PTSD

Madhuri Vempati
Purdue University, mvempati@purdue.edu

Elise A. Miller
Purdue University, mill2464@purdue.edu

Sarah C. Leighton
Purdue University, sleight@purdue.edu

Leanne O. Nieforth
Purdue University, lniefort@purdue.edu

Marguerite O'Haire
Purdue University, mohaire@purdue.edu

Follow this and additional works at: <https://docs.lib.purdue.edu/duri>



Part of the [Alternative and Complementary Medicine Commons](#), [Animal-Assisted Therapy Commons](#), [Biostatistics Commons](#), [Longitudinal Data Analysis and Time Series Commons](#), and the [Psychiatric and Mental Health Commons](#)

Recommended Citation

Vempati, Madhuri; Miller, Elise A.; Leighton, Sarah C.; Nieforth, Leanne O.; and O'Haire, Marguerite, "The impact of service dogs on objective and perceived sleep quality for veterans with PTSD" (2022). *Discovery Undergraduate Interdisciplinary Research Internship*. Paper 19.
<https://docs.lib.purdue.edu/duri/19>

The impact of service dogs on objective and perceived sleep quality for veterans with PTSD

Madhuri Vempati¹, Elise A. Miller², Sarah C. Leighton³, Leanne O. Nieforth³, Marguerite E. O’Haire³

One in four post-9/11 veterans (Fulton et al., 2015) have been diagnosed with posttraumatic stress disorder (PTSD), facing sleep disruptions as one of their most common symptoms. Service dogs have become an increasingly popular complementary intervention and anecdotes suggest they may impact sleep for veterans with PTSD. There is a need for empirical investigation into these claims through measurement and analysis of sleep quality.

The purpose of this study was to longitudinally investigate the impact of service dogs on sleep quality through both objective and subjective measures.

Participants in the treatment group (n=92) received a service dog after baseline, while those in the control group (n=76) received usual care alone for the duration of the study. Actigraphy (objective) and survey (subjective) data were collected longitudinally (at 0 and 3 months). Descriptive statistical tests and regression analyses were performed while controlling for baseline and demographic characteristics to compare sleep outcomes for the treatment versus control groups.

Results indicated that service dog placement was significantly associated with better perceived sleep quality (overall: $B=-0.12$, $p<0.05$; fear of sleep: $B=-0.33$, $p<0.001$; sleep disturbance: $B=-0.45$, $p<0.01$). In contrast, no significant differences in objective sleep measures were observed (duration: $B=-0.09$, $p=0.52$; regularity: $B<0.01$, $p>0.99$; efficiency: $B=-0.10$, $p=0.54$).

These findings suggest that while service dogs may be associated with better perceived sleep quality for veterans with PTSD, these improvements do not appear to be motion related (Actigraphy). Instead, they may be related to differences in other sleep quality determinants such as nightmares and general fear of falling asleep.

¹ Department of Mathematics, College of Science, Purdue University, West Lafayette, IN

² Department of Computer Science, College of Science, Purdue University, West Lafayette, IN

³ Center for the Human Animal Bond, Department of Comparative Pathobiology, College of Veterinary Medicine, Purdue University, West Lafayette, IN