

# Evaluating Prosocial Behavior and Sleep Disturbances Between Pet Owners and Non-pet Owners

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## Introduction

- Research within the field of human-animal interaction (HAI) has shown there to be an association between companion animal ownership and prosocial behaviors (Christian et al., 2020; Purewal et al., 2024; Wenden et al., 2021) as well as sleep disturbances (Medlin & Wisnieski, 2023; Mein & Grant, 2018).
- Many samples used in HAI research are not representative of the greater U.S. population (Rodriguez et al., 2021).
- The goals of this study were to:
  - Confirm the factor structure and test the invariance of a measure of prosocial behavior between pet owners and non-pet owners
  - Investigate the impact of pet ownership on sleep disturbances, while adjusting for contextual covariates in a nationally representative sample.

## Methodology

- This research used data from the Adolescent Brain Cognitive Development (ABCD) Study®.
- $N$  (prosocial) = 8,273
  - $n$  (pet) = 6,265;  $n$  (non-pet) = 2,008
- $N$  (sleep) = 8,507
  - $n$  (pet) = 6,452;  $n$  (non-pet) = 2,055
- Prosocial measures were adapted from the Strength and Difficulties Questionnaire (SDQ; Goodman et al., 1998).
- Sleep disturbances were measured using parent responses to the Sleep Disturbances Scale for Children (SDSC; Bruni et al., 1996).
- The pet ownership survey is a youth report measure of pet ownership developed by the ABCD Study® team.

## Results

**Table 1**

*Prosocial Confirmatory Factor Analysis*

Model	df	$\chi^2$	p	RMSEA	90% CI	CFI	TLI
Two factor	8	33.7	< .001	.02	[.013, .027]	.999	.998
One factor	9	3,630	< .001	.221	[.215, .227]	.875	.791

**Table 2**

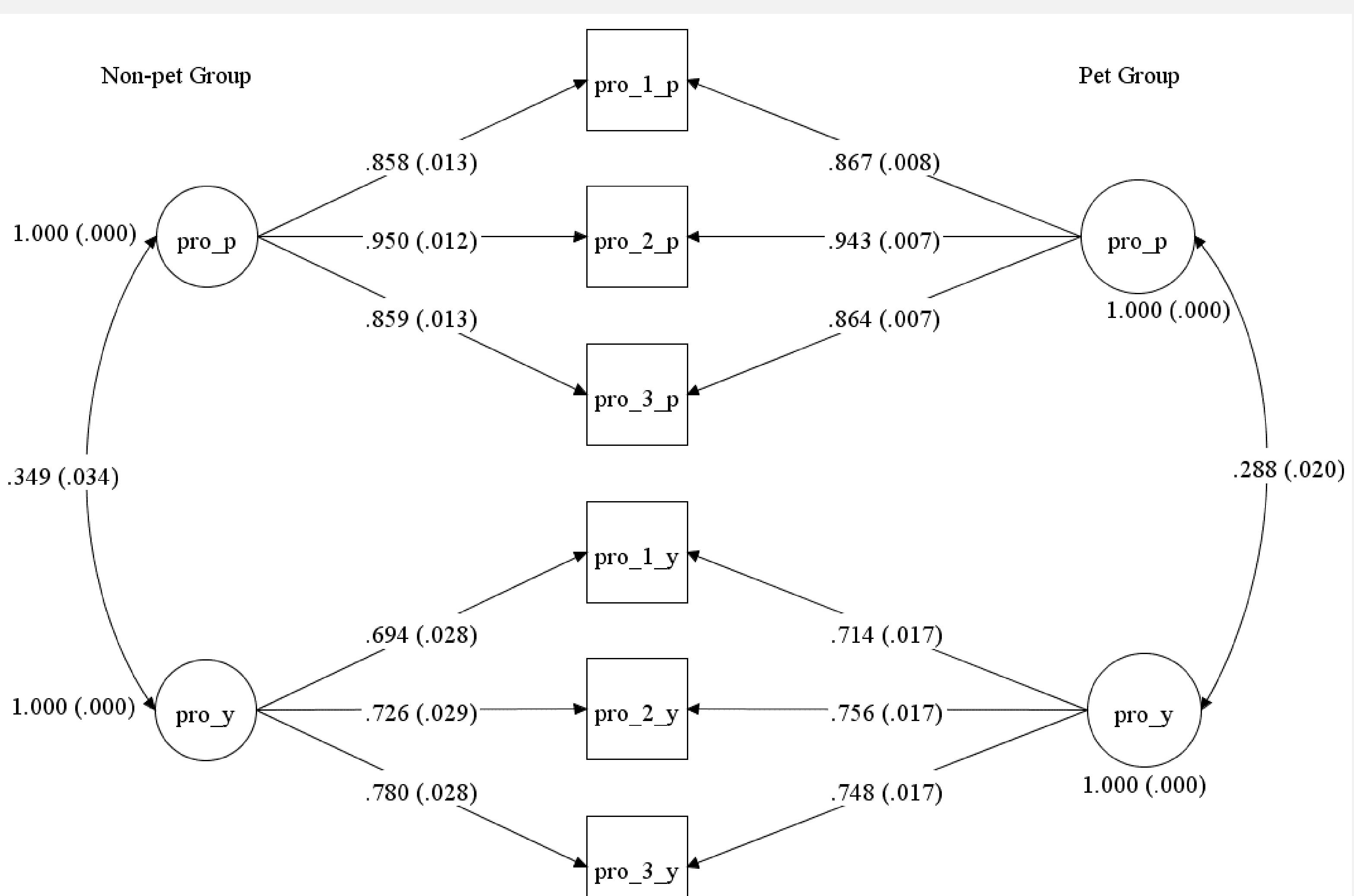
*Truncated Sleep Regression Models*

Model	OR	SE	95% CI	t	p
Total Sleep Problems	1.28	0.13	[1.00, 1.66]	1.91	.06
Disorders of initiating and maintaining sleep (DIMS)	1.23	0.09	[1.03, 1.47]	2.33	.01
Sleep breathing disorders (SBD)	1.03	0.17	[0.75, 1.43]	0.17	.86
Disorders of Arousal (DA)	0.98	0.23	[0.63, 1.56]	-0.08	.94
Sleep-Wake Transition Disorders (SWTD)	1.24	0.19	[0.87, 1.81]	1.15	.25
Disorders of excessive somnolence (DOES)	1.09	0.14	[0.84, 1.43]	0.63	.53
Sleep Hyperhydrosis (SHY)	1.78	0.32	[0.97, 3.49]	1.77	.08

Note. The reference group for each regression model is non-pet owners. Full models are laid out in the Supplemental Information.

**Figure 1**

*Prosocial Behavior Item Structure*



Note. This figure depicts standardized (STDYX standardization using Mplus version 8.10) item loadings for two separate baseline CFAs estimated using WLSMV in the non-pet and pet groups. Results from both CFAs are depicted here for the purpose of comparing differences across groups.

## Discussion

- Youth prosocial behavior was equivalent across pet and non-pet owners (Table S1; Figure 1).
- Pet ownership was not significantly associated with total sleep problems, SBD, DA, SWTD, DOES, or SHY, but was associated with DIMS, however, perhaps not meaningfully so.

## Conclusions

- The mean level of parent- and youth-reported youth prosocial behavior was shown to be invariant across non-pet and pet owners, in contrast to recent research.
- Additionally, pet ownership was not found to be meaningfully related to total sleep disturbances, pointing to the need for more granular research questions in the future.

## Supplemental Information

Funding information, references, and full regression models can be found at the following QR code:

