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Measures of Well-Being in U.S. Animal Shelter Staff During 2023

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Abstract

Introduction: The demands of animal shelter work can take a toll on staff well-being. The years following the coronavirus pandemic have been especially demanding as shelters struggle to navigate a series of unprecedented challenges, including pandemic-related restrictions, the shortage of veterinary professionals, adoptions not keeping pace with increasing animal admissions (especially of dogs), the expiration of eviction moratoriums, and rising inflation. These factors create a context that is potentially deleterious to the well-being of shelter staff.
***Methods*:** We used an online survey to collect information from U.S. shelter staff (N = 243). Specifically, we used the Patient-Reported Outcomes Measurement Information System (PROMIS) and Professional Quality of Life (ProQOL) instruments to quantify various aspects of staff well-being. We also collected basic demographic information and details about participants' experience in the animal welfare field.
***Results*:** PROMIS results reveal mean anger, anxiety, depression, and fatigue scores in the mild/moderate range, significantly higher than those of the general U.S. population. ProQOL results show that nearly half of shelter staff respondents (49.4%) recorded compassion satisfaction scores in the high range, with the remainder falling into the moderate (39.1%) or low (11.5%) range; 53.5% recorded burnout scores in the high range, with the remainder falling into the moderate (32.1%) or low (14.4%) range; and 90.9% recorded secondary traumatic stress scores in the high range, with the remainder falling into the moderate (8.2%) or low (0.8%) range.
***Conclusion*:** Although the shelter staff surveyed reported high levels of job satisfaction, their high burnout and secondary traumatic stress scores, and lower mental and physical health scores raise serious concerns about employee well-being and potential turnover following the coronavirus pandemic. If much of the trauma that comes with animal sheltering work cannot be avoided, policymakers should consider providing shelter staff with the resources necessary to mitigate its impact.

Keywords: *animal shelters*; *burnout*; *compassion fatigue*; *COVID-19*; *PROMIS*; *ProQOL*; *well-being*

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Supplementary material
Supplementary material for this article can be accessed here.

Animal shelter work encompasses a broad range of tasks and responsibilities; some roles involve direct animal care (e.g. kennel attendant and field services officer), whereas others are more administrative in nature (e.g. adoption coordinator and executive director). Each of these roles likely has its own stresses – those of an adoption coordinator being different from those of a shelter's field services staff, for example. In some shelters, especially in smaller agencies, staff often fill multiple roles, subjecting themselves to the stresses associated with each role. But even in the largest shelters, where roles and responsibilities are more narrowly defined, the pressure to provide the best outcome for each animal in one's care is likely felt by all shelter staff.

Animal shelter work is demanding, and, not surprisingly, these demands can take a toll on staff well-being. The years following the coronavirus pandemic have been especially demanding, as shelters struggle to navigate a series of unprecedented challenges, including pandemic-related restrictions,[1] the shortage of veterinary professionals,[2] adoptions not keeping pace with increasing animal admissions (especially of dogs),[a] the expiration of eviction moratoriums,[3] and rising inflation.[4]

a. BFAS. *The State of U.S. Animal Sheltering, 2022*. Best Friends Animal Society; 2023:5. Accessed October 24, 2023. https://network.bestfriends.org/sites/default/files/2023-06/National%20Shelter%20Data%20Set%202023_updated_6.12.2023.pdf

Much of the information provided here was first published and posted on the BFAS website in September 2023.

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Shelter staff well-being was conceptualized with two superordinate constructs, each with its attendant sub-dimensions. The first component of staff well-being was psychological quality of life. The derivative domains of psychological quality of life included both positive (i.e. self-efficacy, companionship, emotional support, informational support, and satisfaction with roles and activities) and negative (i.e. anger, anxiety, and depression) indicators, as indexed by the Patient-Reported Outcomes Measurement Information System (PROMIS).[5] The positive indicators reflect a sense of feeling connected and supported socially, contentment and enjoyment with activities, and feeling able to affect outcomes in one's own life. The negative indicators reflect experiences of bothersome negative affect. Measures of these and other PROMIS domains were developed using item response theory approaches to calibrate test item banks and generate a scoring system that establishes norms within the general U.S. population.[6,7] The second component of well-being assessed in this investigation was professional quality of life. Stamm[8] defines professional quality of life as 'the quality one feels in relation to their work as a helper'. Like psychological quality of life, professional quality of life has multiple domains, the first of which is compassion satisfaction (CS). People high in CS derive substantial pleasure from being able to perform their work helping others. The second domain is compassion fatigue, which is indexed by two indictors: burnout (BO) and secondary traumatic stress (STS). People who feel burned out feel exhausted, frustrated, hopeless, and angry because of their work. STS is the result of working with others who have experienced traumatic and stressful events in the workplace. This secondary traumatic exposure is hypothesized to generate fear, intrusive images or thoughts, and sleep disruption. Professional quality of life was assessed with the ProQOL instrument,[8] which has been widely and successfully used throughout the helping professions,[9–14] including animal care workers.[15–20]

To our knowledge, the PROMIS measures have not been used to assess shelter staff well-being. However, they have generally demonstrated good validity[21] and were attractive for the present study largely because of their extensive prior use in other fields, allowing for comparisons to nationally normed data. The ProQOL, first introduced in 2005,[22] was based on the Compassion Fatigue Self Test developed 10 years earlier for psychotherapists.[23] The instrument was quickly adopted for use in studies of nurses and other healthcare providers.[24–26] Later, it was adopted by researchers studying veterinary professionals and others caring for animals.[27,28] Among the first to use ProQOL to assess the well-being of animal shelter staff were Rank et al., who used the instrument to assess the effectiveness of a 'compassion fatigue training module'.[16]

Although several studies have examined the well-being of animal shelter staff,[16,18,19,29–31] the results of one sometimes contradict those of another. The authors of a 2015 study found, for example, that 'personnel directly engaged in euthanasia reported significantly higher levels of work stress and lower levels of job satisfaction, which may have resulted in higher employee turnover, psychological distress, and other stress-related conditions'.[31] However, other studies have found that factors other than direct involvement with euthanasia contribute more to job-related stress.[19,32,33] In addition, the results of a single survey can sometimes be counterintuitive. One recent study found that staff working in shelters with higher live-release rates (LRRs) reported greater levels of CS (i.e. the pleasure derived from being able to help others through their work) while also reporting higher levels of some work-related stress (e.g. BO and STS) than those in shelters with lower LRRs. These seemingly contradictory findings led the researchers to conclude that staff in shelters with higher LRRs feel 'that they are making more of a difference and are helping more animals' – but also feel an 'increased hopelessness in their work'.[19]

The purpose of the present study was to investigate animal shelter staff well-being across the United States in the wake of the coronavirus pandemic, adding to this important area of research. In particular, we aimed to answer the following questions:

1. How does current shelter staff well-being compare to that of the general public?
2. How does current shelter staff well-being compare to that of individuals employed in other 'helping professions' (e.g. nurses and first responders)?
3. To what extent might current levels of staff well-being correlate with key shelter metrics (e.g. annual animal intake, LRR)?

Methods

We used an online survey for this cross-sectional study of animal shelter staff well-being, collecting participants' demographic and employment information, as well their responses to standardized measures of well-being. The complete survey is available in the Supplementary material.

Recruitment

Recruitment was done primarily through e-mail communication from Best Friends Animal Society (BFAS) to the organization's Network partners, a collection of more than 4,400 shelters and rescue groups across the country who regularly share their data with BFAS. Additional recruitment was done through social media (e.g. a Facebook group open only to BFAS Network partners) and e-mail communication facilitated by the National Animal Care & Control Association. The survey was available online, via Qualtrics (April–June 2023), from April 5 through June 8, 2023.

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Participation was limited to paid staff of U.S. brick-and-mortar shelters and was entirely voluntary. A $5 Amazon gift card code was sent to participants who shared their e-mail address and completed a survey. Respondents were free to quit the survey at any point and were able to skip any question that they did not wish to answer. All responses were anonymous. The research protocol was reviewed and approved by the Institutional Review Board at the University of Arizona under protocol number MOD00003395.

Measures

The survey was comprised of 3 sections: (1) a series of questions to collect participants' demographic and employment information, (2) the PROMIS scale,[5] and (3) the ProQOL scale.[8] Mental, physical, and social health were assessed using 9 PROMIS scales: anger, anxiety, depression, self-efficacy, fatigue, companionship, emotional support, informational support, and satisfaction with roles and activities. Associated categories of well-being, number of items per scale, and alpha reliabilities appear in Table 1. All PROMIS items used for the present study were responded to using a 5-point Likert scale (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, and 5 = *always*; or 1 = *not at all*, 2 = *a little bit*, 3 = *somewhat*, 4 = *quite a bit*, and 5 = *very much*). Raw PROMIS scores were converted to T-scores so that they could be compared to those of the general U.S. adult population (i.e. mean = 50, standard deviation [SD] = 10). Participants' scores were calculated using the online HealthMeasures Scoring Service.[34]

Professional quality of life was assessed with the ProQOL instrument so that shelter staff scores could be compared with those of others employed in the helping professions. The instrument's extensive application in surveys of helpers (including animal shelter staff[18,19]) made it an attractive choice for the present study. The ProQOL instrument is made up of 30 Likert-scale items broken into two primary components: CS and compassion fatigue, with compassion fatigue being made up of 2 components: BO and STS.

Some items were modified to better fit animal shelter staff (e.g. 'I get satisfaction from being able to [help] people' was modified to 'I get satisfaction from being able to help animals'), as shown in Table S1. Each of the 3 ProQOL components was scored separately by summing the appropriate 10 items using a 5-point system (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, and 5 = *very often*). For BO scores, 5 of the 10 items were first reverse-coded. Alpha reliabilities for each scale appear in Table 2. Following previous research,[35] we used mean substitution for missing values. Although this method is biased toward the mean,[36] it was justified in this case because the percentage of missing data for each ProQOL item ranged from 0 to 0.8% making the potential effect of this imputation negligible. Following De La Rosa et al.,[37] we adopted the low, moderate, and high thresholds for each of the 3 ProQOL components, as described in Table 2.

Table 1. PROMIS domains, scales, item bank designations, and alpha reliability measures

PROMIS domain & scale	PROMIS item bank designation	No. of items	α reliability
Mental health			
Anger	v 1.1 short form 5a	5	0.92
Anxiety	v 1.0 short form 4a	4	0.88
Depression	v 1.0 short form 8a	8	0.95
Self-efficacy	v 1.0 short form 4a	4	0.90
Physical health			
Fatigue	v 1.0 short form 7a	7	0.90
Social health			
Companionship	v 2.0 short form 4a	4	0.94
Emotional support	v 2.0 short form 6a	6	0.95
Informational support	v 2.0 short form 4a	4	0.94
Satisfaction with social roles & activities	v 2.0 short form 4a	4	0.89

Data cleaning

During initial recruitment efforts, 221 valid responses (90.1% of the total) were received, after which 2 bot attacks occurred (the apparent result of the survey being posted to at least 1 social media platform). Just 6 of 721 submissions (0.8%) from the first attack and 16 of 235 submissions (6.8%) from the second attack were deemed valid and retained for analysis.

The details of how we addressed concerns over this threat to data quality are described in Appendix A.

Statistical analysis

The pattern of missingness in the data file was evaluated with the Missing Completely at Random test in SPSS 28.0 and found to be missing completely at random (χ^2 = 1427.38, *df* = 1403, *P* = 0.319). For all quantitative variables, data were missing in 0–2.1% of the cases. Descriptive statistics were then calculated for respondents' PROMIS and ProQOL scores using Excel (Microsoft Corporation, version 2307). Analyses of Variance (ANOVAs) were used to determine if ProQOL scores varied significantly by organization type (e.g. municipal vs. private shelter). Because annual intake and LRR data were not normally

Table 2. Scoring thresholds and internal reliability for ProQOL scales

ProQOL component	Low	Moderate	High	α reliability
Compassion satisfaction	≤ 33	34–41	≥ 42	0.88
Burnout	≤ 19	20–26	≥ 27	0.84
Secondary traumatic stress	≤ 13	14–17	≥ 18	0.85

distributed, we used Spearman's rank correlation coefficients to determine the extent to which ProQOL scores were related to annual intake or LRR. The Asilomar version of LRR[38] (i.e. live outcomes divided by [all outcomes minus unhealthy/untreatable owner-requested euthanasia]) was used so that our results could be compared with those reported in a previous study.[19] To account for multiple comparisons, the Benjamini-Hochberg Procedure was used to adjust *P*-values.[39] T-tests were used to compare mean PROMIS T-scores to the U.S. population (mean 50, SD 10) and to compare ProQOL scores of shelter staff hired before and after 2020. All statistical analyses were conducted using RStudio (version 4.2.2). *P*-values < 0.05 were considered statistically significant.

Results

Results are reported in accordance with the Enhancing the QUAlity and Transparency Of health Research (EQUATOR) Network's Checklist for Reporting Of Survey Studies (CROSS),[40] where applicable. A total of 243 shelter staff members from 122 shelters completed the survey. Staff employed by municipal shelters made up 22.2% of our sample, while the remainder were employed by private shelters with government contracts (34.2%) or private shelters without contracts (37.4%). Private shelters are therefore overrepresented in our sample (Table 3).

Shelter staff who identify as women and/or White made up 84.8 and 93.8% of our sample, respectively. This generally agrees with data from the U.S. Bureau of Labor Statistics for 'animal caretakers', indicating that 76.0% identify as women and 87.8% identify as White.[41] Respondent demographics are provided in Table 4, and employment details are provided in Table 5.

RQ1: Comparing shelter staff well-being to that of the general public

The mental health of this sample of shelter workers is characterized by not only significantly more anger,

Table 3. Sample description by shelter type

Shelter type	Number (%)		
	Present study		U.S. shelters
	(participants)	(shelter type)	
Municipal	54 (22.2)	34 (27.9)	2,175 (55.3)
Private shelter with contract(s)	83 (34.2)	43 (35.2)	845 (21.5)
Private shelter without contract(s)	91 (37.4)	45 (36.9)	910 (23.2)
Other*	15 (6.2)	–	–
Total	243 (100)	122 (100)	3,930 (100)

* No shelter name provided or not included in BFAS database. U.S. shelter data compiled by BFAS.

Table 4. Respondent demographics

Demographic category	*n* (%)
Gender identity (*N* = 243)	
Male	26 (10.7)
Female	206 (84.8)
Non-binary	7 (2.9)
Transgender	2 (0.8)
Other	1 (0.4)
Prefer not to say	1 (0.4)
Age (*N* = 243)	
18–25	33 (13.6)
26–35	68 (28.0)
36–45	67 (27.6)
46–55	31 (12.8)
56–65	37 (15.2)
>65	7 (2.9)
Prefer not to say	0 (0.0)
Race* (*N* = 243)	
White	228 (93.8)
Black or African American	4 (1.6)
American Indian or Alaska Native	3 (1.2)
Asian	9 (3.7)
Native Hawaiian or other Pacific Islander	1 (0.4)
Some other race	6 (2.5)
Prefer not to say	1 (0.4)
Ethnicity (*N* = 241)	
Hispanic or Latino	19 (7.9)
Not Hispanic or Latino	219 (90.9)
Prefer not to say	3 (1.2)
Level of education (*N* = 243)	
No formal educational credential	1 (0.4)
High school diploma or equivalent	20 (8.2)
Some college, no degree	52 (21.4)
Postsecondary nondegree award	4 (1.6)
Associate degree	37 (15.2)
Bachelor's degree	82 (33.7)
Master's degree	39 (16.0)
Doctoral or professional degree	6 (2.5)
Prefer not to say	2 (0.8)
Marital status (*N* = 243)	
Never married	67 (27.6)
Married	101 (41.6)
Living with a partner	40 (16.5)
Separated	2 (0.8)
Divorced	26 (10.7)
Widowed	5 (2.1)
Prefer not to say	2 (0.8)
Parent/caregiver (*N* = 243)	
Yes	83 (34.2)
No	159 (65.4)
Prefer not to say	1 (0.4)

(Continued)

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Table 4. (Continued) Respondent demographics

Demographic category	*n* (%)
Current financial situation (*N* = 242)	
Cannot get by without assistance	10 (4.1)
Struggling to get by	17 (7.0)
Just getting by	89 (36.8)
Able to get by with a little left over	89 (36.8)
Able to get by very comfortably	37 (15.3)

* More than one choice allowed.

Table 5. Respondent employment/position

Employment information	*n* (%)
Shelter type (*N* = 243)	
Municipal	54 (22.2)
Private shelter with contract(s)	83 (34.2)
Private shelter without contract(s)	91 (37.4)
Unlisted shelters	4 (1.6)
Anonymous*	11 (4.5)
Position at shelter† (*N* = 243)	
Management	135 (55.6)
Operations, admissions	45 (18.5)
Operations, adoptions	49 (20.2)
Operations, animal care	62 (25.5)
Operations, medical	38 (15.6)
Administrative (e.g. data entry)	34 (14.0)
Other	51 (21.0)
Time in current position (*N* = 243)	
< 1 year	44 (18.1)
1–3 years	100 (41.2)
4–6 years	56 (23.0)
7–10 years	20 (8.2)
11–15 years	13 (5.3)
> 15 years	10 (4.1)
Time at shelter (*N* = 243)	
< 1 year	27 (11.1)
1–3 years	89 (36.6)
4–6 years	55 (22.6)
7–10 years	26 (10.7)
11–15 years	24 (9.9)
>15 years	22 (9.1)
Intent to continue working at this shelter for the foreseeable future (*N* = 242)	
Very likely	181 (74.8)
Somewhat likely	48 (19.8)
Not likely	13 (5.4)
Position(s) in animal welfare field† (*N* = 243)	
Shelter staff (paid)	217 (89.3)
Enforcement/field services	21 (8.6)
Rescue organization staff	21 (8.6)

Table 1 continues

Table 5. Respondent employment/position

Employment information	*n* (%)
Shelter or rescue volunteer	3 (1.2)
Other	10 (4.1)
Time in animal welfare field (*N* = 242)	
<1 year	17 (7.0)
1–3 years	58 (24.0)
4–6 years	54 (22.3)
7–10 years	35 (14.5)
11–15 years	35 (14.5)
>15 years	43 (17.8)

* Assumed to be shelters.
† More than one choice allowed.

depression, and anxiety compared to that of the general population but also significantly higher self-efficacy (Fig. 1). The physical health of this sample is characterized by significantly greater fatigue than that of the general population. In terms of social well-being, participants reported significantly greater informational support but significantly lower satisfaction with social roles compared to population norms. The sample of shelter workers was comparable to the generation population on measures of companionship and emotional support.

RQ2: Comparing shelter staff well-being to that of other helping professions

CS, BO, and STS scores were calculated for each respondent who completed the survey. Descriptive statistics are provided in Fig. 2.

Nearly half of shelter staff respondents (49.4%) recorded CS scores in the high range, with the remainder falling into the moderate (39.1%) or low (11.5%) range. More than half our respondents (53.5%) recorded BO scores in the high range, with the remainder falling into the moderate (32.1%) or low (14.4%) range. Roughly 9 in 10 of our respondents (90.9%) recorded STS scores in the high range, with the remainder falling into the moderate (8.2%) or low (0.8%) range. No statistically significant differences were found between ProQOL scores and shelter type (e.g. municipal vs. private) with all Fs < 2.0 and all Ps > 0.12.

Nearly three quarters of respondents (74.8%) indicated that they are likely to continue working at the shelter currently employing them, while the remainder indicated that they are either somewhat likely (19.8%) or unlikely (5.4%) to continue. Shelter staff reporting higher BO scores were significantly less likely to continue working at the shelter where they are currently employed compared to staff reporting lower BO levels ($t(240) = 7.10$, $P < 0.001$, Fig. 3). A similar trend was observed for STS scores ($t(240) = 4.36$, $P < 0.001$).

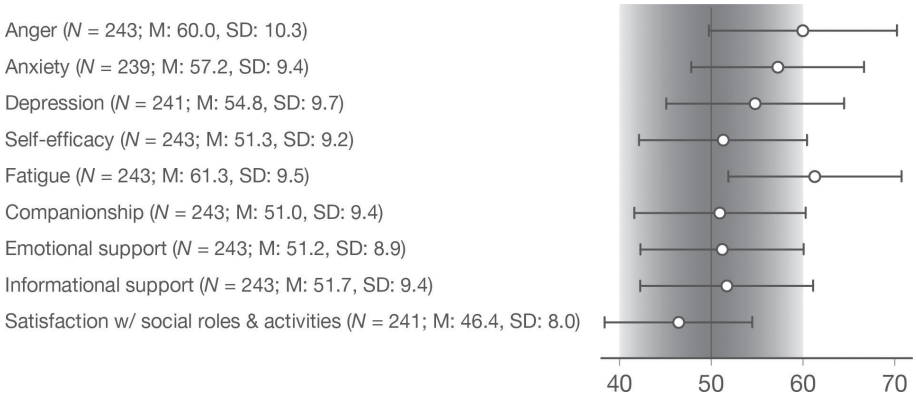

Fig. 1. Summary of PROMIS scores. Shaded area represents standardized scores of U.S. adult population (M: 50, SD: 10). For anger, anxiety, depression, and fatigue, higher stores indicate lower levels well-being; for self-efficacy, companionship, emotional support, informational support, and satisfaction with social roles & activities, higher scores indicate greater levels well-being.

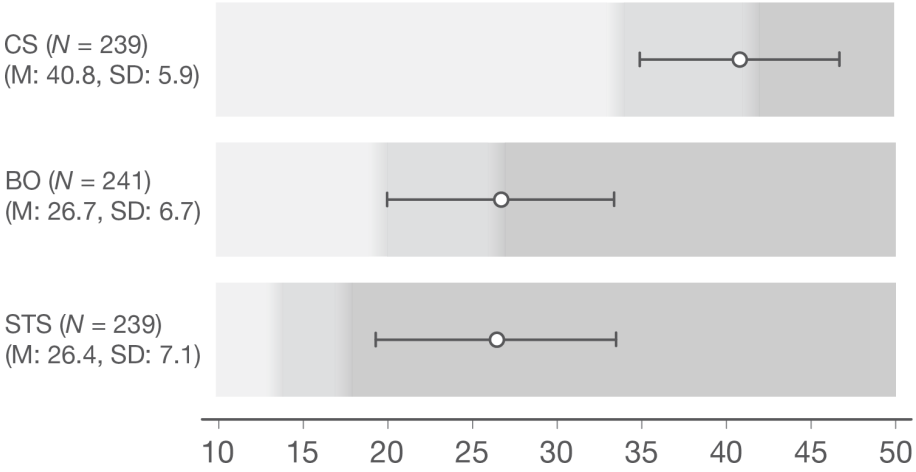

Fig. 2. Summary of ProQOL scores. Shaded areas represent low, moderate, and high ranges of each component, as suggested by De La Rosa et al.[37] Specifically, compassion satisfaction (CS): ≤ 33 = low, 34–41 = moderate, and ≥ 42 = high; burnout (BO): ≤ 19 = low, 20–26 = moderate, and ≥ 27 = high; secondary traumatic stress (STS): ≤ 13 = low, 14–17 = moderate, and ≥ 18 = high. Note: Descriptive statistics calculated using mean substitution for missing values, $N = 243$.

We compiled means and standard deviations from 3 investigations of helping professions that used the PROMIS anger, depression, anxiety, or fatigue measures[42–44] and 19 investigations that used the ProQOL measures.[10–14,16,18,19,29,45–54] Means from these investigations were compared to relevant means from the present sample using Welsh's t-tests due to the differing sample sizes across the various comparisons (Table S2). The results show that with few exceptions, the present sample of animal shelter staff scored higher on indicators of distress such as anger, depression, anxiety, fatigue, BO, and STS when compared to groups such as nurses, law enforcement, laboratory animal technicians, and ocean lifeguards. It should be noted, however, that many of these previous studies were conducted prior to the coronavirus pandemic, which might account for some of the differences seen in our comparisons.

RQ3: Shelter staff well-being and shelter metrics

The median LRR for shelters responding to our survey was 94% (range: 52–100%); median annual intake was 2,394 animals (range: 45–33,916). To examine the relationship between shelter staff well-being and these shelter metrics, all PROMIS and ProQOL measures were correlated with yearly shelter intake and LRR, data available for 200 of our respondents. No significant correlations were found between PROMIS or ProQOL measures and LRR or intake (Table 6).

We found no significant differences between CS or STS scores of staff who have been involved with animal welfare work for 3 years or less and scores of staff with 4 or more years of experience, $t(240) = 0.34$, $P = 0.73$ and $t(240) = -0.04$, $P = 0.97$, respectively. We did, however, observe a relatively minor difference between their BO scores, with staff hired post-pandemic reporting slightly lower BO scores those hired pre-pandemic ($t(240) = -1.69$, $P = 0.09$).

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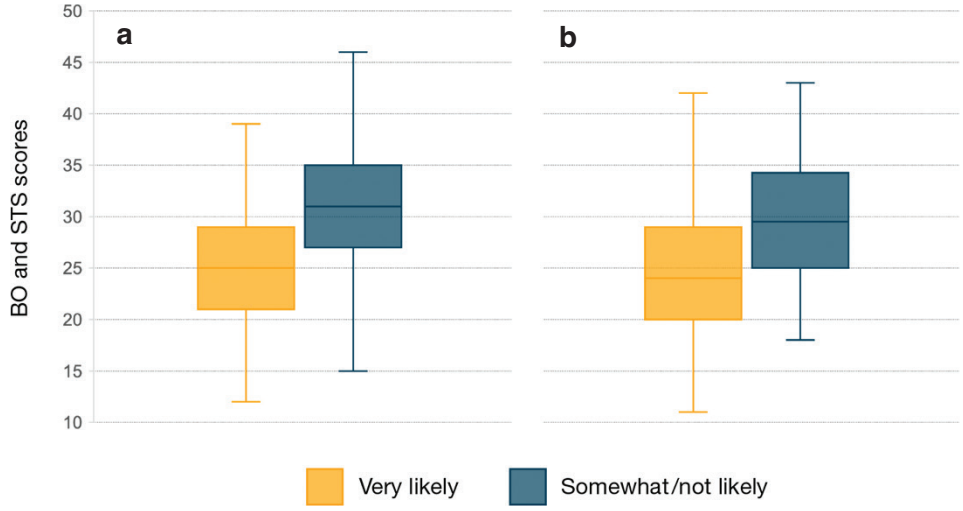


Fig. 3. Burnout (BO) and secondary traumatic stress (STS) scores. BO scores (a) for shelter staff indicating that they were very likely to continue working at their current shelter (mean 25.1, SD 6.1) compared to those indicating that they were either somewhat likely or not likely to continue (mean 31.5, SD 6.0). Boxes are bounded by 25th and 75th quartiles with horizontal bars indicating the medians. Whiskers indicate minimum and maximum values. STS scores (b) show a similar trend (very likely: mean 25.3, SD 7.0; somewhat/not likely: mean 29.8, SD 6.6). For both BO and STS, higher stores indicate lower levels well-being.

Table 6. Well-being measures from PROMIS and ProQOL scales correlated with shelter live-release rate (LRR) and yearly intake (Spearman's rank correlation coefficients)

Scale	LRR		Annual intake	
	ρ	*P*	ρ	*P*
PROMIS				
Anger	0.02	0.52	0.02	0.62
Anxiety	0.00	0.73	0.05	0.39
Depression	0.03	0.78	0.06	0.28
Self-efficacy	0.11	0.54	−0.02	0.73
Fatigue	0.12	0.52	−0.04	0.76
Companionship	−0.07	0.52	0.05	0.94
Emotional support	−0.05	0.52	0.01	0.73
Informational support	−0.13	0.25	0.05	0.74
Satisfaction with social roles & activities	−0.09	0.89	0.05	0.80
ProQOL				
CS	0.01	0.68	−0.05	0.60
BO	0.05	0.52	0.03	0.60
STS	0.05	0.68	0.05	0.39

Note: Only respondents whose shelter's LRR and intake were available were included (N = 200).

Discussion

The specific aims of this study were to compare the well-being of animal shelter staff workers to that of the general population as well as those in other helping professions. Additionally, we sought to determine whether the nature of shelter work, specifically intake volume and LRR, was associated with shelter worker well-being. To our knowledge, our sample (243 shelter staff members from 122 shelters) makes this the largest survey of its kind to date. The results showed that shelter workers reported significantly higher anger, anxiety, depression, and fatigue compared to the general population. Over half of the respondents reported high levels of BO and STS. Animal shelter workers also scored higher on indicators of distress such as anger, depression, anxiety, fatigue, BO, and STS when compared to other people employed in the helping professions. Finally, the nature of shelter work, as indexed by intake volume and LRR, was not associated with any measure of shelter worker well-being.

Shelter worker well-being

The mean CS score observed is considered moderate to high,[37] comparable to scores reported by shelter staff in other studies,[18,19,29] notably higher than those reported in some studies of veterinary professionals,[48] and slightly higher than those reported in some studies of critical care medical professionals[14,53,55] and child protection workers.[11,54] By contrast, higher CS scores were reported in studies of ocean lifeguards,[12] former and current dog fosters,[52] foster parents (of children) in the UK,[47] and 'mental health professionals treating military service members with combat trauma'.[49]

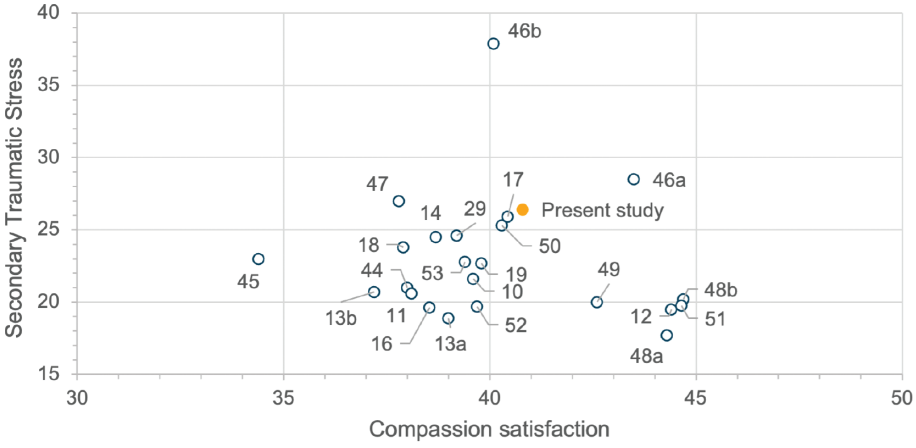
As noted previously, just over half of the respondents recorded BO scores in the high range,[37] with the remainder falling into the moderate or low range. Over 90% recorded STS scores in the high range, with the remainder falling into the moderate or low range. Although moderate and high scores were not entirely unexpected, the STS scores in particular are among the highest observed in the published literature.

The level of BO reported by our participants is comparable to levels reported by shelter staff in some studies[18,19] but slightly higher than those reported in another.[29] The scores we observed were also comparable to those reported by studies of veterinary professionals,[48] medical trainees learning surgical techniques,[56] and 'full-time police officers in the northwest of England, U.K. with no previous diagnosis of PTSD'.[46] Interestingly, BO levels among the shelter staff we surveyed were comparable to[55] or exceeded those reported by critical care medical professionals.[14,53]

The mean STS score we observed was well above the threshold to be considered high,[37] and exceeding those reported by shelter staff in other studies.[18,19,29] Indeed, the STS levels reported by the shelter staff we surveyed exceeded most of those reported in the published literature, including from studies of critical care medical professionals[14,53] (with at least one exception[55]), child protection workers,[11,54] and therapists working with survivors of sexual violence and other trauma survivors.[35] One of the few studies reporting comparable STS values involved veterinary professionals.[48]

An unusual combination of high CS and STS scores

A comparison of CS and STS scores reveals an interesting relationship, with 42.8% of respondents scoring in the high range for both CS (≥ 42) and STS (≥ 18). This combination of high CS and high STS scores sets our sample of shelter staff apart from other helping professions. Of the 20 studies whose results are illustrated in Fig. 4, only one reported higher CS and STS scores. This was a study of adults in the U.K. caring for foster children,[47] including those expressing a strong interest in continuing this work (46a) and those with 'low intent' (46b). The CS and STS scores we observed exceed the mean scores reported by Andrukonis and Protopopova[19] (CS: 39.8, STS: 22.7) and Scotney et al.[29] (CS: 39.2, STS: 29.6), and only slightly exceed those reported recently by Andrukonis et al.[17] (CS: 40.4, STS: 25.9), the 3 studies most similar to ours (i.e. involving shelter staff). The study with CS and STS scores closest to those we observed among shelter staff (30) comes from a study of healthcare frontline providers deployed by non-governmental organizations to work with Ebola patients in West Africa between 2014 and 2015.[51] Although the stresses associated with these vastly different jobs are likely quite different, the associated



10 Critical Incident Stress Management responders
11 Child protection
12 Ocean lifeguards
13a Military medicine, never deployed
13b Military medicine, previously deployed
14 ER nurses (Covid-19)
16 Shelter staff and vet professionals
17 Shelter staff
18 Shelter/euthanasia staff
19 Shelter staff
29 Animal care professionals, various
44 Animal lab techs
45 UK police
46a Foster parents (high intent to continue)
46b Foster parents (low intent to continue)
47 Veterinary professionals
48a Military mental health, prior military experience
48b Military mental health, no prior military experience
49 Healthcare volunteers
50 Ebola responders
51 Dog fosters
52 ER/trauma center
53 Child protection

Fig. 4. Mean compassion satisfaction (CS) and secondary traumatic stress (STS) scores from various studies. The solid dot indicates scores for U.S. shelter staff from the present study. Numbers refer to the publications cited throughout. For CS, higher stores indicate greater levels well-being; for STS, higher stores indicate lower levels well-being.

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well-being scores (via the ProQOL instrument) are surprisingly similar.

Others have suggested that the 'compassion framework' is a 'response continuum of work-related stress ranging from fatigue to satisfaction', challenging the notion that individuals can truly score high on both CS and STS scales.[11] The findings from this study, as illustrated in Fig. 4, suggest otherwise. However, it is not clear why animal shelter work might lead to ProQOL results so different from those associated with other helping professions. If it is true that high levels of CS are integral to animal sheltering work, this may lead staff to experience – and tolerate – high levels of both BO and STS. This would seem to have policy implications; specifically, if much of the trauma that comes with animal sheltering work cannot be avoided, it is important that shelter staff has access to techniques and programming that can mitigate its impact.

Shelter admissions and live-release rates

Annual intake and LRRs were of particular interest to us; this was in part because of previous research on the subject. A 2017–2018 survey of U.S. shelter staff revealed significant positive correlations between LRRs and BO, CS, and STS scores.[19] However, our results revealed no such correlations (Table 6). There are a number of possible explanations for the differences in the results of the two surveys. For example, the median LRR for the shelters included in the earlier survey was 81%, compared to a median LRR of 94% for shelters responding to our survey. And the range of LRRs in the earlier survey was wider (i.e. 25–98% vs. 52–100%). Restriction of range will attenuate observed relationships between quantitative variables. In addition, our survey was conducted well after the beginning of the COVID-19 pandemic, at a time when there might have been a shift in these relationships (e.g. resulting from a steady increase in admissions following pandemic restrictions). In any case, the 2 results are not necessarily in conflict. It makes sense, for example, that staff working in shelters with higher rates of lifesaving can experience both higher CS (from their many lives saved) *and* STS scores (as each life lost is felt more acutely).

Potential impact of COVID-19 pandemic

It is virtually impossible to examine shelter staff well-being in 2023 without considering the possible effects of the COVID-19 pandemic and the 'great resignation'. However, we found no significant differences between CS or STS scores of staff who had been involved with animal welfare work for 3 years or less and scores of staff with 4 or more years of experience. We did, however, observe a relatively minor difference between their BO scores, with staff hired post-pandemic experiencing slightly less BO than those hired pre-pandemic.

As noted previously, the CS and STS scores we observed are higher than the mean scores reported in 2 previous studies of shelter staff.[19,29] It is worth noting that both of these studies were conducted prior to the coronavirus pandemic. However, the extent to which this explains the difference in scores, if at all, remains unclear.

Potential impact on staff turnover

There is evidence to show that feeling passionate about one's work – generally considered a positive attribute, especially in the animal welfare field – can itself contribute to BO.[57] We saw the potential impact of BO when we asked respondents how likely they were to continue working at their current shelter for the foreseeable future. The mean BO score for those indicating that they were very likely to stay was 25.1 (SD 6.1), considerably lower than the mean (31.6, SD 6.0) for those indicating that they were somewhat likely or unlikely to stay. A similar trend was seen for STS scores (Fig. 1). These findings correspond with those from other studies of the helping professions showing that as staff well-being decreases, the likelihood of turnover increases. A study of child therapists in Norway, for example, found that respondents with higher BO and STS scores expressed a 'higher intention to leave' than those with lower BO and STS scores.[58] A study of oncology nurses in the United States found a statistically significant relationship between BO scores and turnover intent, but not between STS scores and turnover intent.[59] A large-scale survey of academic physicians (N = 18,719), which used PROMIS to measure anxiety and depression, found a statistically significant positive relationship between depression scores and participants' intent to leave (ITL) their jobs. However, the relationship between anxiety scores and ITL was not statistically significant.[60]

In a previous BFAS survey, conducted July–August 2021, shelters and rescue groups were asked about staffing issues. The vast majority of the 187 respondents (87%) reported staffing shortages, and 75% of organizations reported increased stress levels.[b] Although it is not clear if there is a direct relationship between the two, it is not unreasonable to suggest that staff shortages might lead to increased stress levels, and that increased stress levels lead to turnover (i.e. staffing shortages). Although updated figures for staffing shortages are, to our knowledge, unavailable, anecdotal information suggests that this issue persists today.

Even setting aside the animal welfare and staff well-being implications, shelter staff BO has implications for policymakers; indeed, it has been suggested

b. BFAS. *Staffing Shortage Survey Data*. Best Friends Animal Society; 2021. Accessed February 24, 2023. https://network.bestfriends.org/research-data/research/staffing-shortage-survey-data

that reducing BO is simply good for business.[c] And since roughly 76% of U.S. shelters are either operated by municipalities or private agencies with municipal contracts – accounting for approximately 80% of animals admitted to shelters annually – this is an issue likely to be of interest to taxpayers and voters.[d]

Work underway to mitigate the impact of job-related stress on veterinary professionals' well-being provides some potentially useful guidance. A pilot study of veterinary professionals attending a weekly peer-support group for 10 weeks, for example, documented 'a moderate impact on overall life stress, job satisfaction, burnout, and vicarious traumatization'. The researchers involved noted that such groups 'may not directly impact the specific situations causing participants' stress, but rather can impact the ability of the participant to efficiently respond to the stressor, while also offering a non-judgmental space to troubleshoot with professional peers'.[e] The American Animal Hospital Association's 'Veterinary Practice Team Well-Being' guide offers a number of recommendations for 'improving practice culture and team member well-being,' ranging from the general (e.g. self-compassion and self-care) to the specific (e.g. 'objectively assess your stress level by taking the 'Life Stress Test' offered by the Compassion Fatigue Awareness Project').[f] Although operating a veterinary practice is not the same as operating a shelter, the many similarities offer an opportunity to learn from a field that has committed considerable resources to better understanding staff well-being in recent years.

Limitations

This study has its limitations. Any investigation using self-reported scores is prone to errors associated with inaccurate or biased responses. In the present study, we have mitigated these risks by using standard measures and a relatively large sample size. Another limitation is the study's cross-sectional design; as a result, we are unable to definitively establish any causal ordering among the variables measured. As noted previously, shelter workers reported more depression and anxiety than those in the general population. Although it may be tempting to attribute this difference to the mentally taxing nature of shelter work, it is equally possible that a self-selection bias channels more people with symptoms of depression and anxiety into animal shelter work. In addition, the timing of our survey (i.e. when many U.S. shelters are seeing adoptions fail to keep pace with animal admissions[g]) likely affected results. Repeating the survey with the same individuals at regular intervals might therefore be useful.

In addition, survey respondents were recruited largely from U.S. shelters that regularly share their data with BFAS. These shelters do not necessarily reflect U.S. shelters generally (e.g. participant shelters have higher LRRs on average, private shelters were over-represented compared to municipal shelters), which should be considered when interpreting the results of the present study.

Conclusion

Although the shelter staff we surveyed reported high levels of job satisfaction, their high BO and STS, and lower mental and physical health scores raise serious concerns about employee well-being and potential turnover following the coronavirus pandemic. If much of the trauma that comes with animal sheltering work cannot be avoided, policymakers should provide shelter staff with techniques and resources that can mitigate its impact.

Author credit statement

Peter J. Wolf: Conceptualization, methodology, data curation, and writing – original draft.

Maureen Gillespie: Conceptualization, methodology, formal analysis, and writing – review and editing.

Chris Segrin: Conceptualization, methodology, formal analysis, and writing – review and editing.

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Appendix A: Data cleaning details

Detecting the bot attacks was relatively straightforward since the response rate was observed to increase dramatically (i.e. 320 surveys begun within a 30-min period). Identifying the valid responses was more difficult, however. In some cases, there were obvious signs of trouble, such as submissions having internet protocol (IP) addresses outside the U.S. or with dubious shelter names (e.g. 'Virginia Zoo', 'pound', or 'puppy'). Hundreds of submissions appeared to legitimate, however, with valid shelter names, IP addresses, etc.

An invalid shelter name (determined by checking against a list of U.S. shelters that is maintained by BFAS) was reason enough to reject a submission. Following the advice of other researchers,[61–63] we developed a screening system comprised of multiple flags (e.g. Qualtrics reCAPTCHA score < 0.5 or fraud detection score ≥ 30, suspect IP location, etc.). A minimum of 2 flags were required to reject a submission. However, flags were not necessarily valued equally. A mismatch between IP location and shelter location, for example, was not sufficient cause to reject a submission. It might be the case, for example, that a staff member was working off-site when they completed our survey or accessed the survey via a virtual private network (VPN), thereby masking their true location. Another 'false positive' we sometimes observed was the flag generated by Qualtrics when the system detects multiple submissions from the same IP address. We could determine that, in some cases, multiple staff members were using the same device to complete our survey, often one after another. E-mail addresses were rarely of much help, as we encouraged participants to use their personal e-mail address rather than one associated with their employer. However, the few submissions for which we had verifiable e-mail addresses proved invaluable for validating our system of flags (e.g. confirming that a dubious IP location alone was not evidence of a fraudulent submission).