Medium and Large Adult Dogs Foster Care Project

Background and Objective

There are many reasons why foster care is beneficial for dogs and animal shelters. Foster care helps dogs get adopted by getting them out in the community and also reduces returns to the shelter (*Mohan-Gibbons, et al. 2014).* A study published in *Animals* found that foster care increased lifesaving, cut costs and improved health. (*Patronek & Crowe,2018)*. The goals of this study were: to assess the effect of foster care on medium to large dogs at multiple shelter locations in the United States; to assess the impact of the foster program on shelter staff morale; and to compare CBARQ results of foster dogs in the project to the existing database of owned dogs meeting study criteria.

Methods

Study Design

Six animal welfare organizations with a municipal contract were recruited to participate in a dog foster program initiative. All dogs in six shelters meeting the following study criteria were included in the study: at least 12 months old, females and males (regardless of neuter status), between 40-100 pounds, apparently healthy, length of stay of 21 days or more. Since there were not enough dogs in shelters meeting study criteria at the beginning of the study, shelters were asked to enroll every meeting criteria dog that reached three weeks of stay into the study in the subsequent year. Dogs were not intentionally held for the study, as the purpose was to include only the dogs who were not adopted by the three weeks of their stay. Every shelter received an excel randomization sheet to assign dogs to either control or treatment group as they reached three weeks mark. However, since the animal welfare was prioritized and foster homes were not always available the randomization was not always strictly followed. At the organizational level, staff and volunteered were surveyed before and one year after foster program was implemented to evaluate the impact of the foster program on staff morale. A convenient subsample of dogs in foster homes were also assessed using CBARQ questionnaire and the results were compared to the existing CBARQ database of dogs meeting study criteria. In addition, a convenient subsample of dogs was assessed using CBARQ one month post adoption.

Questionnaire

A behavior questionnaire which utilized a five-point rating scale was used to assess dogs during the study at all time points, with “unable to evaluate” being set as a missing value in the analysis. Shelters’ staff completed the first questionnaire for dogs between three to five weeks of their stay in the shelter, except dogs that had been in the shelter for more than five weeks at the moment of the study implementation, for them the first questionnaire was completed at the moment of enrolment The survey asked respondents to rate dogs related to 21 items such as confidence, friendly toward dogs, friendly toward people, attention-seeking and fear.

Data Analysis

Mann-Whitney U test was used to compare the difference between groups at the beginning of the study and seven days later, $p<0.05$ was considered significant. The scores difference between first shelter assessment and seven days later was calculated and included in between group analyses at time two.

Friedman test was used to identify significant difference within foster group during three time points, with $p<0.05$ being significant. For multiple comparisons, post hoc analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied, resulting in a significant level set at $p<0.017$. If Friedman test result was not statistically significant, post hoc tests were not run. For shelter group (within group analysis) Wilcoxon signed-rank tests was used, $p<0.05$ was considered significant. The questionnaire assessing morale staff and volunteers was analyzed using descriptive statistics. Custom tables were produced to include before and after foster care implementation results. Statistical analysis was performed using SPSS version 18.

Results

The total sample size at the moment of current data analysis was 263 dogs. Out of 263 dogs, 144 dogs remained in the shelter and were assessed by shelter staff seven to nine days later. 119 dogs went to homes where they were assessed by their foster caregivers one and seven days after entering foster care. Dogs in foster care showed significant improvements on 6 out of 21 items after one day in foster care compare to their initial assessment at three to five weeks in the shelter. They were perceived as more happy, relaxed and less anxious. Dog behavior and wellbeing continued to improve between one and seven days in the foster care. Dogs showed improvement on 15 out of 21 items on day seven compared to day one in the foster home. In addition, dogs in foster care showed significant improvements on 17 out of 21 items after 7 days in foster care compared to their initial assessment in the shelter. Table 1 below summarizes all the results for 21 behavior items.

Table 1. Wilcoxon Signed Ranks Test - Foster Group

	Shelter Versus 24hr in Foster	Shelter Versus 7 Days in Foster	24hr in Foster Versus 7 Days in Foster
1.Playful/cheerful	Z=-2.33, p=0.020, N=116	Z=-6.09, p<0.001, N=117	Z=-5.62, p<0.001, N=118
2.Happy/content	Z=-3.95, p<0.001, N=118	Z=-7.06, p<0.001, N=119	Z=-5.29, p<0.001, N=118
3.Friendly to people	Z=-1.41, p=0.158, N=117	Z=-3.69, p<0.001, N=117	Z=-2.70, p=0.007, N=117
4.Friendly to dogs	Friedman test $\chi^2(2)=1.29$, p=0.525,N=73		
5.Confident/sure	Z=-0.72, p=0.470, N=116	Z=-5.69, p<0.001, N=118	Z=-5.74, p<0.001, N=117
6.Relaxed/calm	Z=-3.30, p=0.001, N=118	Z=-7.51, p<0.001, N=118	Z=-6.21, p<0.001, N=117

7.Has more good days than bad days	N/A	Z=-7.22, p<0.001, N=114	N/A
8.Nervous/uneasy	Z=-0.06, p=0.952, N=117	Z=-3.72, p<0.001, N=118	Z=-4.12, p<0.001, N=118
9.Unsure/insecure	Z=-0.71, p=0.477, N=117	Z=-3.05, p=0.002, N=118	Z=-4.40, p<0.001, N=118
10.Anxious/worried	Z=-2.82, p=0.005, N=118	Z=-6.35, p<0.001, N=119	Z=-4.97, p<0.001, N=118
11.Alert/vigilant	Freedman test $\chi^2(2)=4.355$, p=0.113, N=116		
12.Boisterous/noisy	Z=-4.03, p<0.001, N=118	Z=-3.39, p=0.001, N=119	Z=-0.88, p=0.380, N=118
13.Attention-seeking	Freedman test $\chi^2(2)=3.31$, p=0.191, N=116		
14.Barking	Z=-4.24, p<0.001, N=118	Z=-3.73, p<0.001, N=119	Z=-1.87, p=0.061, N=118
15.Poor self-care/grooming	Z=-0.44, p=0.657, N=116	Z=-2.95, p=0.003, N=119	Z=-2.83, p=0.005, N=116
16.Fur is greasy	Z=-0.48, p=0.633, N=117	Z=-5.08, p<0.001, N=119	Z=4.53, p<0.001, N=117
17.Panting	Z=-1.06, p=0.291, N=118	Z=-2.88, p=0.004, N=119	Z=-5.03, p<0.001, N=118
18.Shakes/Trembles	Z=-3.21, p=0.001, N=118	Z=5.06, p<0.001, N=119	Z=-2.41, p=0.016, N=118
19.Shows Repetitive Behavior	Z=-1.37, p=0.172, N=118	Z=-5.07, p<0.001, N=119	Z=-4.53, p<0.001, N=118
20.Fearful	Z=-1.17, p=0.244, N=118	Z=-3.27, p=0.001, N=119	Z=-2.68, p=0.007, N=118
21. Aggressive	Z=-0.98, p=0.326, N=117	Z=-0.70, p=0.485, N=118	Z=-2.53, P=0.011, N=116

*The variables in the table are the shorten definitions of the original behavior variables presented to respondents.

Dogs who did not go to foster care did not show any significant improvement on any of the behavior and wellbeing items. Moreover, they showed a significant deterioration on one item, less sociable and friendly behavior to other dogs ($p<0.026$).

With regards to in between group difference; both groups were not significantly different from each other at the first shelter assessment, except some behavior variables measuring fear. Dogs that were assigned to foster care were significantly more fearful ($p=0.023$), anxious ($p=0.008$), showed poor self-grooming ($p=0.003$) and shook/trembled ($p=0.002$) more than dogs who stayed in a shelter. The difference probably occurred due to shelter staff overwriting randomization and trying to maximize dogs' welfare by sending more fearful and stressed dogs to foster homes. However, when both groups were compared again after seven days, dogs who went to foster care showed a significant improvement on 17 out of 21 behavior variables compared to dogs who stayed in the shelter.

There was no significant difference in staff morale questionnaire before and after implementing foster care when looking across all 6 shelters. However, these results could be due to staffing changes and other factors such as organizational changes. The sample size was also different between time one and time two. Although, there was no difference found, the questionnaire allowed organizations to get inside into staff satisfaction and happiness and hopefully implement efforts to address difficulties expressed in the questionnaire. The questionnaire also permitted to evaluate staff and volunteers' attitude towards foster care in general. The results were very positive among all 6 organizations.

Benefits of The Project

The results from this study suggest that dogs benefit dramatically from foster care. Behaviors associated with well-being improved and those associated with poor well-being lessened. It is unknown whether social contact and a change in environment impacted the dogs' behavior or whether the differences reported occurred because people subjectively perceive dogs more positively and less negatively when they are in homes. However, it is important to note that both are important when it comes to finding homes for dogs as a positive attitude about dogs is likely beneficial in finding them homes. Shelters should utilize foster care to improve welfare and find homes for dogs, because it has a significant impact on behavior, well-being and adoption.

References:

- Patronek, G., & Crowe, A. (2018). Factors Associated with High Live Release for Dogs at a Large, Open-Admission, Municipal Shelter. Animals, 8(4), 45. doi:10.3390/ani8040045
- Mohan-Gibbons H, Weiss E, Garrison L, Allison M (2014). Evaluation of a Novel Dog Adoption Program in Two US Communities. PLoS ONE 9(3): e91959. doi:10.1371/journal.pone.0091959