“Their pets are loved members of their family”: Animal ownership, food insecurity and the value of having pet food available in food banks.

The authors have no conflict of interests to report.

Abstract

National estimates of household food security fail to take into account the animals in the household, and studies conducted by animal welfare, veterinary, and pet product associations have not estimated the extent to which pets experience food insecurity. Yet the proliferation of dedicated pet food pantries and the addition of pet food to existing food banks suggest that many pet owners are challenged to keep food on the table and in the food bowl. This descriptive study evaluated the pet food distribution program “Chow Wagon” by surveying the staff of participating food pantries and banks. The respondents provided their perception of the value of having pet food available in their food banks, as well as what additional animal services were needed. In addition, the study utilized Geographic Mapping Information (GIS) with United States Census data on poverty to assess the greater community need. The survey was mailed to 29 Chow Wagon participating food banks and 19 respondents completed a survey for a 61% response rate. According to the respondents, pet food availability in the food bank was highly valued by the clients, and when they did not have pet food, approximately three-fourths of the survey respondents believed that their clients were likely to share human food with their pets. The findings were inconclusive about whether having pet food available prevents owners from surrendering their animals. Finally, GIS mapping of the region to identify areas of high poverty with limited access to pet food in pantries suggests further expansion of the pet food service into suburban and rural parts of Western Pennsylvania. Further research is needed to better understand the relationship between animal and human food insecurity as well as the well-being and mental and physical health benefits afforded by pet ownership for low-income owners.

Keywords: Pet Food; Food Banks; Food Pantries; Food Insecurity; Animal Food Insecurity; Program Evaluation

Americans love their pets. Sixty-five percent of American households own one pet and 42% of these households have more than one animal living in the home (American Pet Products Association, 2015-2016). The size of the pet market, 58.04 billion dollars spent in 2014, is one indicator of the primary role that animals play in our lives (Skarbnik, 2015). A survey by the American Veterinary Medical Association (2012) found that 63% of pet owners consider their pets to be family members. In fact, many pet owners refer to their pet/pets as their “fur kids” or “fur family”.

Pet ownership spans the range of income levels, and pet ownership does not seem to be driven primarily by financial considerations (Staats, Miller, Carnot, Rada & Turnes, 1996). A marketing report utilizing 2012 data on pet ownership and income reported comparable levels of cat ownership (approximately 30%) between those living at or below $20,000 per year with those above it (Lindsey, 2013). Another marketing study on pet ownership reported in an animal welfare blog KC Dog Blog, (November, 2012) found that 34% of people with incomes less than $25,000 per year acquired their pet from someone else. This number is closer to 20% for other income groups and 16% for high-income households.

However, it is estimated that 23 million pets live in homes and communities which are underserved in terms of access to routine and preventative veterinary care such as vaccinations and spay/neuter services (Humane Society of the United States, 2013). In their study of under-served communities, the Humane Society of the United States reported that 53% of the respondents had never taken their pet to a veterinarian (Humane Society of the United States, 2013). In the Bayer veterinary care usage study (Volk, Felsted, Thomas, & Siren, 2011), pet owners with lower income households (incomes less than $35,000) and those who were unemployed were less likely to take their pet to a veterinarian during the prior year than owners who reported higher incomes. Unemployed cat owners or cat owners with lower household incomes were less likely to have taken their cat to the veterinarian than unemployed dog owners or dog owners with lower household incomes (Volk, Felsted, Thomas, & Siren, 2011, p. 1276). A systematic review of the of published research on relinquishment of companion animals reported that caretaker “economic reasons” were mentioned as a reason for relinquishing an animal in 41.7% of the 35 studies reviewed (Coe, Young, Lambert, Dysart, Borden & Rajic, 2014). However, it was not clear why the condition of household economic strain resulted in subsequent relinquishment.

Therefore, a lower household income may mean that pets in the home may not have access to routine medical and preventative care. Moreover, limited access to low cost medical services may not be the only challenge facing low-income pet owning households. In 2014, 14% of American households were found to be food insecure, meaning that at some time during the year, food intake of one or more household members was reduced and eating patterns were disrupted because the household lacked the money and other resources for food (Coleman-Jensen, Rabbitt, Gregory & Singh, 2015). When the household is challenged to feed the human members of the family, is it likely that family pets experience food insecurity as well? National estimates of household food security do not take into account animals in the household, and studies conducted by animal welfare, veterinary, and pet product associations have not estimated the extent to which pets experience food insecurity. Therefore, the intersection of human and animal food insecurity was the focus of this descriptive investigation.

**Human Food Insecurity**

Reflecting the recession and slow economic recovery, the prevalence of food insecurity in the United States increased in 2008 from 11% to 14.6% and has remained essentially unchanged. Food insecurity has a higher prevalence among certain groups: those near or below the Federal poverty line, households with children headed by a single parent, women living alone, and Black and Hispanic-headed households (Colman-Jensen et al., 2015). Immigrants are also at risk of experiencing food insecurity (Rush, Ng, Irwin, Stitt & He, 2007). About 61% of food-insecure households reported receiving assistance from one or more of the three largest Federal food and nutrition assistance programs such as Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women, Infants and Children (WIC) and the National School Lunch Program (Coleman-Jensen, 2015). However, other households not eligible for assistance may also experience food insecurity: households with individuals working at minimum-wage or part-time employment, those who are retired and living on a fixed income, undocumented residents, or those experiencing an acute and temporary shortage of cash. Food pantries and banks (hereafter referred to as food banks) are intended to be temporary assistance for households experiencing a critical food shortage by providing grocery items directly to clients. The intent of this service is to be a short-term solution but research suggests that a proportion of households relied on food banks as their primary source of food (Daponte, Lewis, Sanders & Taylor, 1998; Kicinski, 2012; McKay & Dunn, 2015; Starkey, Kuhnlein & Gray-Donald, 1998). A systematic review of the research on the role of food banks found that clients remained food insecure between visits (Bazerghi, McKay & Dunn, 2016). Consequently households had to find ways to cope with limited supplies of food. Some food coping strategies included putting off paying bills, borrowing money from friends and relatives to purchase food, buying in bulk, sending children to a friend or family member for meals, hunting or fishing for food, and using home or community gardens or gleaning harvested fields (Wood, Shultz, Edlefsen & Butkus, 2006).

However these strategies do not easily translate to feeding a pet. The estimated yearly cost of feeding an animal varies, from an average of $224 per year for a cat, to between $150 to $500 a year for dog, depending upon breed and size (American Society for the Prevention of Cruelty to Animals; RaisingSpot.com <http://www.raisingspot.com/adopting/cost-of-owning-dog>). SNAP benefits do not cover pet food, and sending an animal to a relative for a meal or meal sharing is not an option. Buying pet food in bulk and using discount stores are another strategy used by food-insecure households (Wood et al., 2006). Although pet food can be purchased in bulk at discount stores, this requires a car, which many food bank users may not have (Daponte et al., 1998). Using game (e.g. deer meat) and fish obtained through hunting and fishing can be used to feed family pets, but this requires skills, equipment, licenses and transportation.

**Animal Food Insecurity and the Intersection with Human Food Insecurity**

There is little research about the extent of pet food insecurity in low-income households. Studies conducted by the United States Department of Agriculture (USDA) did not include animals in the household in estimating the prevalence of food insecurity. A search of the research literature found one study conducted in the Pacific Northwest which explored trans-species food security by surveying a small sample of homeless veterans with companion animals. The primary finding was that animal food insecurity created human food security problems because the veterans shared their emergency food with their animals (Fink, 2015). The author concluded that the animal-human bond is a tie strong enough to defy logic and basic self-preservation instincts (Fink, p. 56).

The proliferation of dedicated pet food pantries and the addition of pet food to established food pantries and banks suggest that many pet owners are challenged to keep food on the table and in the food bowl (Hu, 2016, February 7; Strom, 2010, March 19). These services are not without controversy. At least one advocate had questioned whether animal food security should be addressed when food pantries /banks and food services could not fully address human hunger (Hu, 2016). This debate will continue as long as there is limited empirical information about the intersection of animal and human food insecurity. Therefore, the objectives of this investigation were to explore and describe the perception of the relationship between animal and human food insecurity by surveying the staff and volunteers at pantries/banks participating in a pet food distribution program located in Southwestern Pennsylvania. This evaluation and needs assessment study, a collaboration between the University of Pittsburgh and Animal Friends, an animal resource agency, sought to answer several questions about pet ownership and food insecurity: (1) What is the value for humans and animals when pet food is available in food banks?; (2) Are the clients perceived to be less food secure when their pets are also experiencing food insecurity?; and (3) What is the perception of the commitment of the owners to their pets? Secondly, the study sought to identify additional regional needs using Geographic Mapping Information (GIS). As additional pantries ask for assistance, Animal Friends must balance the inventory of donated food, storage capacity and volunteer availability in relation to community needs. Therefore a targeted approach to verifying high need areas could be useful for future program expansion.

**Communities in Need**

Unlike other parts of the United States, the economic activity of the Southwestern Pennsylvania region in the early twentieth century was located along the rivers, resulting in communities forming around the industrial core (Deitrick, Briem & Foster, 2005). However, the period from the mid-1970s to the middle of the 1980s was characterized by the collapse of the steel industry and the loss of thousands of jobs in the region. Out-migration of young working age residents and their families and natural population aging resulted in a population loss. In addition, the absence of high-wage manufacturing jobs contributed to an overall decline in income and tax revenue for the region as well as in specific communities. For example, in 2000, residents in the City of Pittsburgh had an average household income that was 75% or less than the county average (Deitrick et al., 2005). Although the region has undergone an economic restructuring concentrated on education and health care and accompanied by a notable increase in income in some suburban municipalities, households in certain areas remained poor, and over time have become even more impoverished such as those along the Monongahela River (Deitrick et al., 2005, p.37). In addition, the city of Pittsburgh and many municipalities have experienced a recent influx of immigrant and refugees from Bhutan, Iraq, Somalia, Burma Afghanistan, and Russia and former nations of the Soviet Union (Horn, Smith & Whitehill, 2013). As immigrants settle in particular neighborhoods, it becomes an anchoring community, attracting secondary migration. Immigrants have been identified as being a low-income group with high levels of food insecurity (Rush et al., 2007).

**Program Information**

Chow Wagon is coordinated by Animal Friends, a nonprofit companion animal resource center located in Southwestern Pennsylvania. The mission of Animal Friends is to promote the animal-human bond and nurture relationships with companion animals which are guided by compassion (Animal Friends n.d. Mission and Vision. Retrieved from http://www.thinkingoutsidethecage.org/site/c.elKWIeOUIhJ6H/b.8629491/k.BC40/Mission\_and\_Vision.htm). In response to the most recent economic recession as well as historical community patterns of poverty, the goal of Chow Wagon is to keep companion animals in their homes and with their families by providing nutritious pet food to food banks, pantries, high rises, veteran drop-in centers and Meals on Wheels programs. Since its inception in 2007, approximately 300,000 pounds of dog, cat, rabbit food and other supplies such as toys, litter and treats have been distributed in Allegheny County and surrounding areas. The pet food and other animal supplies are obtained though individual and corporate donations as well as through a partnership with Ainsworth Pet Nutrition. Ainsworth donates Rachael Ray™ Nutrish®dog and cat food for the shelter animals housed at Animal Friends as well as for the Chow Wagon associated food banks. These donations are then distributed by volunteers to participating food programs on a monthly basis.

**Methods**

**Survey**

The university researchers collaborated with advocates from Animal Friends in creating the self-administered survey for food bank staff and volunteers to complete. A decision was made to survey the staff rather than the clients because Animal Friends was interested in determining staff perception of unmet programmatic needs as well as staff perception of the value of having pet food, and they also lacked a description of the food programs that they were assisting. Consequently, the study was determined to be program evaluation by the University Institutional Review Board, thus not meeting the federal definition of research.

 The survey had four major sections: Descriptive information about the food bank (location, size, and scope of services); the customers/households using the food bank (type of households, information about pet ownership); the need for additional services that Animal Friends could provide to improve the well-being of pets; and the perceived value of having pet food in the food bank. Many of the questions were “check as many as applies” or Yes/No responses. Since many of the food sites are operated by a community nonprofit or a church, it was believed that the staff and volunteers would have relationships within and outside the food program that would make them credible respondents. Therefore, six questions about the customers and their pets and worker perception of whether this service was valuable to customers of their food program were added to the survey: “Customers are appreciative of having pet food available when they shop in the pantry/bank”; “We frequently run out of pet food before the next Chow Wagon delivery”; “Customers say that the pet food helps them out”; “Having pet food in our pantry/bank brings in customers who might not come here”; “I feel that people would surrender their pets to a shelter if we did not have pet food available here”; and “When we don’t have pet food available, customers will select human food to give to their animals”. Using a Likert Scale, respondents could select “strongly agree”, “agree”, “neither agree or disagree”, “disagree” or “strongly disagree” or “don’t know”. As a final question, the respondents were asked to write anything that their customers have shared about their pets or any observations that they have about the relationship between the customers and their pets. Beginning in February 2016, the survey was mailed on Animal Friends letterhead to 29 Chow Wagon participating food banks and programs with three reminder mailings over a six week period. One response per food program was requested and 19 respondents completed a survey for a 61% response rate. The data were analyzed using IBM SPSS Statistics Version 24 (IBM Corporation, 2016).

**Maps**

The color-coded maps were created using ArcGIS version 10.4 **® software (**ESRI, Redlands, USA) by layering geocoded Chow Wagon pantry locations with poverty indicators obtained from the Allegheny County Health Department’s Allegheny Community Indicators (ACI) (Allegheny County Health Department, 2017). The ACI is an interactive set of public health indicators which allows the user to access local, state and national data and build custom reports using two or more indicators. This study used poverty indicators from the American Community Survey (2010-2014) administered by the U. S Census Bureau and Allegheny County zip codes. The Census Bureau uses the Office of Budget and Management’s definition of poverty which is a set of money income thresholds that vary by family size and composition. If the total income for a family or individual falls below the relevant poverty threshold, then the family (and every individual in it) is considered to be in poverty (http://Factfinder.census.gov/#glossary.htm). Households defined as living below poverty were sub-grouped into “individuals living below the poverty level or threshold”, “families who are living below the poverty level or threshold”; “children who are living below the poverty level or threshold”; and “individuals 65 and older who are living below the poverty level or threshold. The percentage living below the poverty level by zip code was obtained by using the ACI reporting function. Zip Code Tabulation Areas (ZCTA’s) are not perfect matches with all the Allegheny County USPS zip code areas but do represent a good approximation of USPS zip code regions and give a clear picture of regions of poverty in the county. For ease of comparison between maps, the map legends were held as constant as possible while allowing for the fact that the poverty percentage range varied between maps.

**Findings**

Figure 1 displays families below the poverty level. Consistent with historical context, poverty is observed in the city of Pittsburgh and in the Monongahela River Valley communities which formerly housed the steel industry. The areas of Braddock, Duquesne, and McKeesport represent the highest areas of poverty in that valley region and are without a Chow Wagon affiliated food bank. Similarly the northeast section of the county also has indications of underserved suburban poverty, although at a lower percentage. Figure 2 (children below poverty level) is similar to Figure 1 in terms of highlighting underserved poverty areas in the northeast and in the Monongahela River Valley regions of the county, although much higher percentages are observed in this population. Figure 3 (individuals 65 and older in poverty) is somewhat different. In this map, the same overall trends are observed but at a lower percentage than the other maps. Individuals living below the poverty threshold are displayed in Figure 4: once again the Monongahela River Valley and several zip codes in the City of Pittsburgh have the highest percentages of people living in poverty. The maps in total show that while although food banks with pet food are in many of the most impoverished communities, additional expansion efforts should consider outlying suburban and rural areas as well as the Southeastern portion of the county.

**Food Banks, Clients and Additional Pet-Related Needs**

 The food banks associated with Chow Wagon are predominately non-faith based, not-for- profits (63%) with a smaller percentage affiliated with a faith-based organization (37%). Fifty-three percent of the respondents report that customers can shop at the bank monthly, 21% report weekly or bi-weekly shopping, and only one food bank allows for daily food shopping. In comparison, Chow Wagon deliveries to the food banks are scheduled once a month with each food bank having a consistent delivery week in the month e.g. last week of the month or the first week. However, these dates do not correspond to food benefit cycles (SNAP, WIC for example) for the clients. The scope of the areas that they serve varied widely as measured by how many zip codes their services cover; some food banks served only one or two zip codes whereas others served all of Allegheny County.

Insert Table 1 here

When asked to describe the client households that they serve, the respondents felt that they served elderly adults, (90%), adult only households (90%), and those with children (95%). Single adult households were also thought to be common at 84%, with young adults being served to a lesser degree (54%). Because this was a “select all that apply” question, the percentages are greater than 100% (Table 1). Over half of the respondents (61%) estimate that a quarter to half of their customers own pets: slightly more than half of the respondents (58%) say that their client households are equally dog and cat owning, whereas slightly over a quarter (26%) identify more households as primarily dog-owning and 16% of the food pantries say that they serve more households with cats. In terms of additional services that clients of the food bank need for their animals, 88% of the respondents feel that their clients need low-cost vaccinations and 89% identify the need for low-cost spay/neuter services. At a lower level of need but still identified were grooming services and education about pets (28% and 22% respectively). Finally, a small percentage (6%) felt that food bank clients having access to therapy pets would be helpful. These findings suggest that the food bank staff and volunteers believe that the most important unmet needs are for preventative health care services for their client’s pets.

**Pet Food in Food Pantries**

Insert Table 2 here

 Table 2 displays the descriptive findings related to the value of having pet food available in pantries. All of the food bank volunteers and staff “agreed” or “strongly agreed” that having pet food available in the food banks was helpful, and that the clients appreciated its availability. More than three-fourths (78%) of the respondents said that they often ran out of food before the monthly delivery from Chow Wagon was delivered. The staff believed that having pet food available did not seem to be a motivation for individuals to use the food bank: 29% “disagreed” and almost half of all respondents were neutral about this option (47%). In other words, the respondents believed that clients were using the food bank to obtain food for their family and having pet food available was a bonus rather than a motivator to visit the food bank.

In reference to whether individuals would surrender their pets if they did not have access to pet food at the food bank, approximately 40% “disagreed”, 47% were “neutral” and 13% “agreed”. Respondents were more certain about whether their clients were sharing human food with their pets. While 20% were neutral, 73% agreed with the statement that when pet food was unavailable, clients were giving their food to their pets. Some of the open-ended comments written by the staff and volunteers at the food banks help to illustrate how important the pets are to their owners, and why food might be shared from the family table when pet food is not available:

*“Our church cannot afford to buy pet food for our recipients and they cannot afford it either. So they are VERY appreciative when we can provide food for the pets they love so much.”*

*“People will often buy pet food over [food for] themselves.”;*

*“I have heard neighbors say that they give the government tuna and chicken to their pets”;*

*“I was at a home visit with one of my elders in the program. During my visit, I observe her giving her dog the food she had prepared for herself”;*

“*Their pets are loved members of their family.”*

**Discussion**

Based upon the observations of food bank workers and volunteers, pet food in the food bank was greatly appreciated and needed, and when they did not have pet food, clients were believed to be likely to share human food with their pets. This suggests that one way to address the relationship between human and animal food insecurity is to meet both sets of needs rather than prioritizing one over the other. The study findings were less clear about whether having pet food available prevents owners from surrendering their animals. Finally, GIS mapping of the region to identify areas of high poverty with limited access to pet food in pantries suggests further expansion of the pet food service into some suburban and rural areas. In addition, consistent with the findings from the Humane Society’s survey, these respondents reported a need for vaccinations and spay and neuter services for the pets of their food bank clients.

The perception that owners are likely to put the food needs of their pet before their own is consistent with the earlier study done by Fink with homeless veterans and their attachment and commitment to their dogs. Commitment is a resolve to keep a pet in spite of challenges that require expenditures of resources such as patience, time, effort and money (Staats, et al., 1996, p. 88). Attachment, an emotional or affective experience, has been found to correlate with the level of commitment to a companion animal and willingness to deploy resources (Staats et al., 1996). The research is inconsistent about the inter-relationships among income, commitment, and attachment. One study found that income was not an important predictor of commitment to a pet, with low and high income pet owners equally committed to their animals (Staats, et al., 1996). Another study by Poresky and Daniels (1998) found no statistical difference in attachment to pets between different household income groups whereas Johnson, Garrity and Stallones (1992) found that household income significantly affected pet attachment with low-income pet owners more attached to their pets than any other income group. On the other hand, Quinn’s (2005) study which included horses as well as cat and dogs found higher income owners were more attached. Additional research is needed to better understand these relationships. Moreover, as most of the national data on pet ownership comes from product and marketing research, pro-bono sharing of data for academic study would greatly aid continued research about prevalence of animal ownership in low-income households.

**Limitations**

While these findings contribute to the scarce knowledge about the relationship between food insecurity for people and their pets, the information was not collected from the clients so it is impossible to determine the impact on food security. This is a modest first step in the research about the intersection of human and animal food insecurity. Another important limitation of this study is that not all of the Chow Wagon food pantries and banks responded to the survey, specifically none of the programs serving senior high rises and meals on wheels. Feeding a pet while living on a fixed income may be difficult for older individuals and those with disabilities, and this survey did not include those Chow Wagon senior sites. The findings were inclusive about the relationship between commitment to a pet and whether having access to pet food in the food bank impacts commitment.

A limitation of the GIS analysis is that the maps also do not take into account the intersection of poverty, food bank location and location of animals and types of animals. For example, high poverty communities may not correspond with a high level of pet ownership. Alternately, high poverty communities may have low-income households feeding feral colonies or have more dog households. The addition of indicators such as licenses for dogs could help with the precision of the mapping process in identifying areas of unmet pet food needs for dogs. In reference to feeding feral colonies, collaboration with Trap, Neuter and Release programs could allow for identification and mapping of these areas.

 Despite these limitations, given the shortage of research about the intersection of animal and food insecurity this collaborative study is a first attempt to investigate the question about the intersection of animal and human food security from the perspectives of both animal and human welfare. We hope that additional research will be undertaken to better understand the relationship between animal and human food insecurity as well as the well-being and mental and physical health benefits afforded by pet ownership.

However, until additional research is conducted, we propose that the solution to the problem of human and animal hunger is to try to address both simultaneously. Since it is unlikely that food policies will begin to include benefits for pets, nonprofit animal and human welfare providers and religious institutions with assistance from communities will need to continue to provide this food service. The pet industry which profits from the large numbers of middle and upper income owners purchasing food and services can also play a critical role by donating food to food banks and underwriting preventative health care services. Pets contribute to the quality of life of their owners (McNicholas, Gilbey, Rennie, Ahmedzai, Dono, & Ormerod, 2005) and research studies have reported modest positive physical health benefits such as less pain after surgery, and reduced cardiac risk with animal ownership (Takashima & Day, 2014). The benefits from animal ownership should not be limited to the economically privileged and owners should not need to choose between feeding themselves or their pets. People who love their pets will find ways to take care of them but having pet food as part of a food bank service may help to ensure food security for all members of the household.

References

Allegheny County Health Department (2016). Accessed on September 6, 2016 from

 <http://www.achd.net/aci/index.html>

American Fact Finder (2016) Accessed on September 6, 2016 from

 <http://Factfinder.census.gov/#glossary.htm>

American Pet Products Association (2015-2016). *APPA National Pet Owners Survey*.  Retrieved

December 21, 2016 from <http://www.humanesociety.org/issues/pet_overpopulation/facts/pet_ownership_statistics.html?referrer=https://www.google.com>

American Society for the Prevention of Cruelty to Animals. (n.d.) *ASPCA Pet Care Costs.*

Retrieved September 6, 2016 from <https://www.aspca.org/sites/default/files/pet_care_costs.pdf>

American Veterinary Medical Association (2012). *U.S. Pet Ownership & Demographics*

*Sourcebook.* Retrieved September 8, 2016 from https://www.avma.org/KB/Resources/Statistics/Pages/Market-research-statistics-US-Pet-Ownership-Demographics-Sourcebook.aspx

*Animal Friends Mission Statement* (n.d;) Retrieved December 1, 2016

<http://www.thinkingoutsidethecage.org/site/c.elKWIeOUIhJ6H/b.8629491/k.BC40/Mission_and_Vision.htm>

Bazerghi, C., McKay, F. H., & Dunn, M. (2016). The role of food banks in addressing food

 insecurity: A systematic review. *Journal of Community Health, 41,* 732-740.

Coe, J. B., Young, I., Lambert, K., Dysart, L., Borden, L. N., & Rajic, A. (2014).

 A scoping review of the published research on the relinquishment of companion animals.

 *Journal of Applied Animal Welfare Science, 17,* 3, 253-273.

 DOI: 10.1080/10888705.2014.899910

Coleman-Jensen, A., Rabbitt, M. P., Gregory, C., & Singh, A. (2015). *Household food*

*Security in the United States in 2014.* ERR-194, U. S. Department of Agriculture Economic Research Service, September.

Daponte, B. O., Lewis, G. H., Sanders, S., & Taylor, L. (1998). Food pantry use among

low-income Households in Allegheny County, Pennsylvania. *Journal of Nutrition Education, 30,* 50-57.

Dietrick, S., Briem, C., & Foster, A. W. (2005). *AlleghenyPlaces:* *The Allegheny County*

*Comprehensive Plan: Housing & Socio-Demographic Trends.* University Center for Social and Urban Research, University of Pittsburgh. Retrieved December 12, 2016 from <http://ucsur.pitt.edu/wp-content/uploads/2014/11/HousingSociodemTrends2005.pdf>

ESRI (2016) ArcGIS Desktop: Release 10.4 Redlands, CA: Environmental Systems Research

 Institute.

Fink, T. (2015). *Combating the food crisis: Issues of trans-species food security*

(Unpublished master’s thesis). Humboldt State University School of Social Work, Arcata, CA.

Horn, A., Smith, A., & Whitehill, E. (2013*). Immigrants and Refugees in Allegheny County:*

Scan and Needs Assessment. The Allegheny County Department of Human Services. Retrieved September 12, 2016 from

 <http://www.alleghenycountyanalytics.us/wp-content/uploads/2016/05/Immigrants-and-Refugees-in-Allegheny-County-Scan-and-Needs-Assessment-1.pdf>

Hu, W. (2016, February 7). Pet food pantries offer relief to animal owners struggling with ills.

*The New York Times*. Retrieved September 6, 2016 from <http://www.nytimes.com/2016/02/08/nyregion/pet-food-pantries-offer-relief-to-animal-owners-struggling-with-bills.html?_r=0>

Humane Society of the United States (2013).  *Pets for Life Data Report.* Retrieved

September 6, 2016 from <http://www.humanesociety.org/issues/pet_overpopulation/facts/pet_ownership_statistics.html?referrer=https://www.google.com/>

IBM Corporation (Released 2016). *IBM SPSS Statistics for Windows, Version 24.0*. Armonk,

NY:IBM Corp.

Johnson, T. P., Garrity, T. F., & Stallones, L. (1992). Psychometric evaluation of the Lexington

# Attachment to Pets Scale. *Anthrozoös, 5,* (3), 160-175.

KC Dog Blog. (2012, November 12). *U.S. Pet Ownership Statistical Breakdown*. Retrieved

September 12, 2016 from http://btoellner.typepad.com/kcdogblog/2012/11/us-pet-ownership-statistical breakdown.html.

Kicinski, L. R. (2012). Characteristics of short and long-term food pantry users.

*Michigan Sociological Review, 26,* 58-74.

Lindsey, E. (2013). *Behind the data: Pet ownership by income bracket.* September 12, 2013.

Retrieved September 6, 2016 from

 <http://www.marketplace.org/2013/09/12/wealth-poverty/income-upshot/behind-data-pet-ownership-income-bracket>.

McKay, F. H., & Dunn, M. (2015). Food security among asylum seekers in Melbourne.

*Australian and New Zealand Journal of Public Health,* 39, 344-349.

McNicholas, J., Gilbey, A., Rennie, A., Ahmedzai, S., Dono, J., & Ormerod, E. (2005). Pet

ownership and human health: A brief review of evidence and issues. *British Medical Journal, 331*, 1252-1254.

Poresky, R. H., & Daniels, A. M. (1998). Demographics of pet presence and attachment.

*Anthrozoös 11*(4). 236-241.

Quinn, A. C. (2005). *An examination of the relations between human attachment, pet*

*attachment, depression, and anxiety.* Retrospective Theses and Dissertations. Paper 1851. Retrieved December 21, 2016 from

 <http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=2850&context=rtd>

RaisingSpot.com (n.d.). *The Cost of owning a dog.* Retrieved July 1, 2016 from

<http://www.raisingspot.com/adopting/cost-of-owning-dog>

Rush, T. J., Ng, V., Irwin, J. D., Stitt, L. W. & He, M. (2007). Food insecurity and dietary intake

of immigrant food bank users. *Canadian Journal of Dietetic Practice and Research, 68,* 73-78.

Skarbnik, J. H. (2015). *Protecting Pets. In Committee Report: Estate Planning & Taxation.*

 Retrieved December 21, 2016 from <https://pashmanstein.com/wp-content/uploads/2016/05/Protecting-Pets-published-December-2015.pdf>

Staats, S., Miller, D., Carnot, M. J., Rada K., & Turnes, J. (1996). The Miller-Rada

 commitment to Pets Scale. *Anthrozoös 9*, 88-95.

Starkey, L. J., Kuhnlein, H. V., & Donald, K. G. (1998). Food bank users: Sociodemographic

 and nutritional characteristics. *Canadian Medical Association Journal, 158*, 1143-1149.

Strom, S. (2010, March 19). More food banks helping to feed pets. *The New York Times.*

Retrieved September 12, 2016 from <http://www.nytimes.com/2010/03/20/us/20pet.html>

Takashima, G. K., & Day, M. J. (2014). Setting the one health agenda and the

human-companion animal bond. *International Journal of Environmental Research and Public Health. 11,* 1110-11120.doi:100.3390.ijerph111111110

Volk, J. O., Felsted, K. E., Thomas, J. G., & Siren, C. W. (2011). Executive summary of the

Bayer veterinary care usage study. *Journal of the American Veterinary Medical Association*, *238*(10), 1275-1282.

Wood, D. K., Shultz, J. A., Edlefsen, M., & Butkus, S. N. (2006). Food coping strategies used

by food Pantry clients at different levels of household food security status*. Journal of Hunger & Environmental Nutrition, 1,* 45-68.

Table 1

*Type of Households Being Served By the Food Bank (N=19)*

|  |  |
| --- | --- |
| Household Type | % of Household Type (n) |
| Single Adults without children | 84% (16) |
| Adult Only Households | 90% (17) |
| Elderly | 90% (17) |
| Young Adult | 58% (11) |
| Families With Children | 95% (18) |
| Other  | 11% (2) |

Table 2

*Impact of Pet Food in Food Banks: Value of Food and Outcome*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree% (n) | Disagree% (n) | Neutral% (n) | Agree% (n) | StronglyAgree%(n) |
| Clients appreciate food | 0 | 0 | 0 | 5 (1) | 95 (18) |
| Pet food helps out clients | 0 | 0 | 0 | 0 | 100 (19) |
| Bank runs out of pet food  | 0 | 0 | 22 (4) | 56 (10) | 22 (4) |
| Pet food brings in clients to food bank\*  | 18 (3) | 12 (2) | 47 (8) | 18 (3) | 6 (1) |
| Clients would surrender pets without food\*\* | 13 (2) | 27 (4) | 47 (7) | 7 (1) | 7(1)  |
| Clients give their food to their pets\*\*\* | 0 | 7 (1) | 20 (3) | 47 (7) | 27 (4) |

\* Two respondents “did not know”

\*\* Three respondents “did not know”

\*\*\* Four respondents “did not know”

Figure captions

 *Figure 1*. The percentage of families living below the poverty threshold

*Figure 2.* The percentage of children living below the poverty threshold

*Figure 3.* The percentage of individuals 65 and older living below the poverty threshold

*Figure 4.* The percentage of individuals living below the poverty threshold.