

The Impact of Animal-Assisted Intervention on Staff in a Seniors Residential Care Facility

Julie Casey¹ · Rick Csiernik²  · David Knezevic² · Joanne Ebear³

Published online: 4 December 2017

© Springer Science+Business Media, LLC, part of Springer Nature 2017

Abstract As with any protocol involving both humans and animals, there were inherent risks with this research. These risks were minimized through the participant screening process which assessed for animal allergies and fears for particular animal species. Participants were selected for their interest in animals which reduced the risk for the participant to experience stress during the intervention. Interaction with animals poses a risk of zoonoses. Zoonoses are diseases that can be transmitted to humans from animals. To minimize this risk, all therapy animals were under veterinary care, were thoroughly groomed, and were regularly vaccinated and dewormed. Hand hygiene policies were followed. The therapy animals' hand-rearing and socialization minimized the risk of physical injury by the animal. The therapy animals used in this study were sheep, rabbits, chickens, and a goat. These animals are considered safe and have previously worked with other residents living in long-term care homes with no previous incidents. To ensure the safety of the therapy animals, the International Association of Human-Animal Interaction Organizations Animal Welfare Guidelines were followed for ethical human-animal practices and to protect the animals' well-being. When working with therapy animals, animal welfare is critical since the animal is vulnerable and dependent on the therapist

✉ Rick Csiernik
rcsierni@uwo.ca

Julie Casey
julie.ac.casey@gmail.com

David Knezevic
dknezev5@uwo.ca

Joanne Ebear
jebear62@gmail.com

¹ Nourishing Hearts Animal Assisted Therapy, Rodney, ON, Canada

² School of Social Work, King's University College, 266 Epworth Avenue, London, ON N6A 2M3, Canada

³ Faculty of Social Work, Wilfrid Laurier University, Waterloo, ON, Canada

for their protection and well-being. The use of the Boat Inventory on Animal-Related Experiences (BIARE) reduces the risk of potential harm to the therapy animal. Additionally, the Guidelines for Wellness of Animals Involved, created by the International Association of Human-Animal Interaction Organizations (IAHAIO), was utilized throughout the study to further ensure the wellbeing of the therapy animals.

Keywords Animal-assisted intervention · Farm animals · Stress · Mental health · Workplace wellness · Dementia · Canada

Animal-assisted intervention (AAI) is gaining a stronger presence within the therapeutic community. It is now utilized to ameliorate a diverse range of human needs across the lifespan in a variety of settings including developmental disabilities; visual, hearing, and mobility impairments; acquired brain injuries; chronic illnesses; and palliative care; trauma, post-traumatic stress disorder, mental health, and addiction (Chandler 2005; Engelman 2013; Hanrahan 2013; Kamioka et al. 2014; O’Haire 2013). There has been particular interest in working with seniors, especially those with dementia (Bernabei et al. 2013; Filan and Llewellyn-Jones 2006; Majić et al. 2013; Nordgren and Engström 2014; Richeson 2003; Sellers 2006). However, the presence of therapy animals may not only be beneficial for clients but also has the potential to impact the entire system and thus could also be a contributor employee workplace wellness.

A holistic conceptualization of wellness constitutes five interrelated and interdependent areas physical, psychological/emotional, spiritual, intellectual/vocational, and social health. The impact of stress on families with a member having dementia (Gitlin et al. 2015; Kim et al. 2012) as well as worker wellness has well been documented (Csiernik 2014). Neuropsychiatric symptoms are common in nursing home residents (Selbæk et al. 2013) as are behavioral and psychological symptoms of dementia (BPSD) that include aggression, wandering, restlessness, repeated actions, suspicion, apathy, sundowning, and sexualized behaviors (Alzheimer Society Canada 2016). In 2014, the Ontario (Canada) Long Term Care Association OLTCA reported that 62% of Ontario nursing home residents lived with Alzheimer’s or another dementias while nearly one third had severe cognitive impairment. Since 2008 the proportion of residents with dementia increased by 6% while mild or moderate cognitive impairment rose by 8% with dual diagnosis of dementia coupled with a psychiatric diagnosis increasing 11%. As well, one in three residents also had a psychiatric diagnosis such as anxiety, depression, bipolar disorder, or schizophrenia. This contributed to a 14% increase in moderately aggressive behavior with nearly half of residents exhibiting some level of aggressive behavior between 2010 and 2012. As the complexity of residents issues has increased so have incidents of aggressive behavior involving employees which has led to concerns regarding the safety of both staff and residents. This trend is only likely to continue in Canada as the proportion of seniors over 65 is predicted to grow from 15.9% in 2016 to 22.6% by 2041; 9.7 million people in total (University of Ottawa 2016).

Caring for individuals who have dementia is both emotionally and physically taxing and prolonged family and workplace stress can impact the quality of care provided to residents (Pitfield et al. 2011). Long-term care nursing staff are subject to considerable occupational stress and report high levels of burnout (Woodhead et al. 2016). Both verbal and physical assaults on staff are common often occurring in patients’ rooms because of an individual’s cognitive impairment and/or not wanting personal care. Documented physical contact against staff includes slapping, squeezing, punching, hitting, and shoving (Lachs et al. 2013; Morgan et al. 2012; Tak

et al. 2010). Resident aggression in seniors care facilities is associated with increased levels of workplace stress as well as with compassion fatigue and burnout (Brodaty et al. 2003; Edberg et al. 2008). Not surprisingly one outcome is employee turnover, which is a substantive and expensive concern in seniors' residential care facilities (Kash et al. 2010; McGilton et al. 2014). There is a distinct relationship between working conditions, mental health, and intention to leave with intention to leave partially mediated by employee mental health. It is argued that workplace programs must begin to address work organization features to reduce employee intention to leave (Zhang, Punnett, Gore., and CPH-NEW Research Team 2014).

Human-animal interactions involve sensory, tactile and social engagement that stimulates the release of oxytocin. During this human-animal engagement production of the hormone oxytocin is increased (Beetz et al. 2012). Oxytocin has widespread neurological, biological, emotional, and social effects, including attachment, trust, and social processing, while also decreasing anxiety, stress, and aggression (Netherton and Schatte 2011; Olmert 2009). By stimulating the parasympathetic nervous system, oxytocin calms the fight-flight-freeze stress response, reducing the secretion of cortisol, aldosterone, and adrenaline, while also increasing pain tolerance, lowering blood pressure, increasing vagal tone, decreasing inflammation, improving wound healing, facilitating learning, and lowering anxiety (Chandler 2005). This is a major reason there has been an increase in the interest in examining AAI as a therapeutic mechanism particularly in seniors' care facilities where the interaction has been demonstrated to ameliorate the symptoms and impact of dementia. If this is the case, is there also a spillover effect such that AAI's effects on residents produces a more well workplace? This study's goal was to examine if changes brought on by AAI among residents with dementia living in a long-term care facility had any affect upon the work environment and the perceived mental health and wellness of the staff working with them.

Methodology

The study design consisted of implementing an eight-item open-ended questionnaire (Appendix A) to all staff, who were considered key informants who worked on a specialized dementia unit of a long-term care home in an urban Southwestern, Ontario, where an animal-assisted intervention study had just been completed. The residential facility is home to 160 individuals, many of whom have a formal diagnosis of dementia and who are in the middle to late stages of this condition. A formal AAI study had been undertaken on a specialized dementia unit within the facility. Baseline data on the residents was collected for 2 weeks on 15 residents followed by 8 weeks of animal-assisted intervention and then a 3-week post-intervention data collection period. Residents engaged in three 1-h sessions each week during the study period with a range of farm animals including a sheep, rabbits, chickens and a goat. These animals had all previously worked with residents living in long-term care homes with no previous incidents. To ensure the safety of the intervention animals, Animal-Assisted Interventions International's standards of practice were followed for ethical human-animal practices and to protect the animals' well-being. The use of the Boat Inventory on Animal-Related Experiences (1994) was applied to reduce the risk of potential harm to the intervention animals. Additionally, the Guidelines for Wellness of Animals Involved, created by the International Association of Human-Animal Interaction Organizations were followed throughout the study to further ensure the wellbeing of the intervnetion animals

(Lefebvre et al. 2008). Activities consisted of petting, grooming and walking the animals; singing animal songs, learning about the animal's history, species and breed; training the animal; reminiscing about past human-animal interactions and relationships; and reflecting on the animal's behaviors and story in relation to their own story.

Key informant interviews are qualitative in-depth interviews with people who have insider knowledge about a program and its implementation or unique insights into what is occurring within a specific organization or community. Best practice indicates the use of 15–35 in-depth interviews (Csiernik and Birnbaum 2017; US Agency for International Development, Information and Evaluation 1996). Twenty (90.9%) of 22 staff who work on the specialized dementia unit where the animal-assisted intervention program had been implemented agreed to be interviewed as key informants at the conclusion of the trial period to ascertain the impact they have perceived the program had. The sample consisted of personal service workers, registered nurses, dietary aids, housekeepers, and recreation therapists. The sample consisted of 18 women and 2 men ranging in age range from early 20s to mid 50s. All interviews were conducted at the worksite either during working hours or directly before or after depending upon each participant's availability. Interviews were tape recorded with the tapes transcribed verbatim with a thematic analysis of the responses conducted. Ethics approval was granted by the King's University College Research Ethics Review Committee.

Results

In examining the transcripts, distinct inconsistencies became evident. While the majority of respondents found that the animals had a positive impact on the affect and behavior of residents, indirectly also creating a more positive work environment, there were a minority of respondents who indicated that there were no noticeable changes. This led to a re-examination of the transcripts where a key factor was found leading to the differences: the time of day the respondent worked. This readily explained the two distinct sets of responses while also leading to programming, financial and ethical questions.

Day shift (7:00 am–3:00 pm) staff perceived the farm AAI program to have a variety of positive benefits and residual outcomes for residents and for themselves. This was often expressed via lengthy, detailed, and overtly positive comments that were overwhelmingly in favor of maintaining the program. Adjectives such as effective, interactive, engaging, and positive were regularly used as well as descriptions of specific outcomes, such as reduced agitation, greater communication and less wondering on program days.

I think this whole project was effective. (Residents) were quite engaged, even the ones who are quiet, the residents who are not verbal, you know, (were) interactive. I think this is something I would highly recommend, especially for the residents with dementia, it was a form of communicating and engaging, you know, being able to touch and pet the animal, I found that was quite effective. (Interview 1)

anybody that came in contact with the animals at the time were very happy. I didn't see or hear any negativity at all. (Interview 12)

I was shocked about some of the residents that wander and pace up and down the halls, sometimes like for an hour straight, could actually sit and enjoy and just be involved in

that. In this program I found that they would sit for the whole thing, which I thought was great. (Interview 11)

Seeing them happy is nice. (Interview 19)

However, afternoon (3:00 pm–11:00 pm) and night (11:00 pm–7:00 am) shift staff had a less positive view of the AAI programming with some not even knowing when the animals were present or why they were in the institution. This group typically indicated that the program had no lasting impact on the residents, and thus none of themselves either:

Interview 15: It had absolutely no effect

Interview 16: (no changes) to do with the animal therapy

Interview 17: I don't know, because I - I never work days

Interview 18: No I did not see any, any difference.

In contrast, staff who worked days provided several clear examples of how the AAI initiative not only benefitted residents but also enhanced the workplace environment and staff morale on days the animals were on site.

Oh yeah, definitely. Everybody that I noticed was so much more pleasant, you know, smiling when the animals arrived. They were just, they're so cute. [laughs]" (Interview 12)

(I was) Able to engage the residents easier. (Interview 14)

It did make our jobs easier on the floor. (Interview 11)

Respondents who worked the day shift also described curiosity about the animals among staff who were not directly involved. Memory Lane staff noticed workers from other units of the institution and programs stopping by to see the animals and to watch the residents enjoy their time interacting with them. Some respondents also described positive, spontaneous communication occurring within and/or between groups of staff in different settings regarding the farm AAI program.

Staff throughout the whole building were like "oh my goodness the animals are here" and they come poke their head in and every single staff member that came in here had a smile on their face when they saw the animals, whether it was the diaper on the goat or the diaper on the chickens or just anything. They always just wanted to come in and pet the goat, just take time out of their own day to come in and see how things were going. (Interview 19)

...we had staff coming down all the time and when the word got out...people were asking us about it too and we were just explaining that it was you know the animal therapy and what there was and stuff. And the staff would come down and specifically go out to see the animals, not all the staff, but some of the staff, it was interesting to them too (Interview 20)

However, there remained tensions as other staff not directly involved and not working when the animals were present stated that it was not useful or a waste of time.

... to me the negativity is sometimes so overwhelming that it's disheartening. So, I just said to them when I would hear oh that's ridiculous, why are the bringing animals in, blah, blah, blah. There was negativity from a lot of the staff. (Interview 14)

The AAI initiative was reported to have a positive impact on workload for day staff as it provided more structure that seemed to help enable relief for staff to focus more on providing quality programming for all their residents.

I found having that group of nine or 10 people throughout the morning gave me opportunity to work with, you know, the other group more intimately and more therapeutic all for people that perhaps don't get, you know, aren't as demanding of engagement and of my time, they were able to benefit from, you know, sensory programs from me and they just got a lot more of my time. And I think overall the whole unit was a little more at ease because you need that kind of small dividing group, different areas, different environment. So, overall I found the unit calmer. (Interview 8)

One respondent discussed the AAI program almost as a strategic distraction for residents that inadvertently reduced the number of residents they had to watch at one time. Another described the program as a redirection tactic used variably depending on the resident they were supporting.

I know they're safe when they're outside with the animals or in here with the animals. You know, if there's four or six people of them at a time then there's four or six people that I'm not looking out for out there on the floor. (Interview 10)

There were multiple exemplars throughout the interviews highlighting positive impacts on worker mental health and the work environment in general. Likewise, there was appreciation for what AAI did for residents and how AAI impacted their connection to the residents and work, even if the change was mainly experienced in the moment.

I think the staff enjoyed it. It's something to talk about, like a conversation that we've had ourselves about a goat in a diaper, so, in that way, yes. I think people think it was a neat idea. I think we always love to see an opportunity for our residents to enjoy something very special. And having visiting animals is very special I would think for them. And so that would be the impact on staff that we love to see in enrichment in our resident's lives. (Interview 2)

The staff again was very engaged, they really enjoyed it and it was good for both the staff and the resident to have something totally different from a regular line of duty to do. And it really did have staff just smiling and just feeling good overall, knowing the resident, that it's making a difference in the resident at that time... and I will keep repeating it that it was a good thing for the home, for the residents for the staff. I seen the residents are more uplifting, smiling, it was very effective, especially with the residents who are more withdrawn. They were light, they were lit up. (Interview 1)

Others spoke directly about the impacts on how they viewed their normal day in comparison to their time in the farm AAI program. One staff made a direct link between staff mental health and how the program could inadvertently be utilized for staff.

So I think that something like that as beneficial as this is could be right through the whole building. And even for you know like even for like staff too. Somebody who is a

little edgy that day - why didn't you go see the animals or if there's ... I mean everybody's got lousy days, it's not just residents that have behaviours, I mean we leave our garbage at the door, but if somebody's got a stressful situation at home, why don't you ... You know send them down to see the chickens for five minutes or something or you know go pet the bunny rabbit. I really believe in pet therapy period for everybody, not just for residents and I just find it very beneficial. (Interview 20)

Day staff respondents unanimously valued the program and stated that it contributed to a positive feeling within the unit and throughout the institution. These staff reported that the program was beneficial and supported a continuation of the program. Repeatedly they noted that there was a decrease in agitation and aggressiveness among residents on AAI program days. They also reported that it was a relief to observe these residents more content even though they note that there was not a long term impact on behavior or affect. These staff felt that it would have more of a lasting impact if AAI became a regular program available to residents. However, despite these positive benefits enjoyed by day staff, employees working afternoon and night shifts indicated that there was little to no direct effect on their job, nor did it make their shift any more enjoyable, easier or more difficult; it simply had no impact.

Discussion

Seeing a baby goat in a diaper brings a smile to just about anyone's face, including those with cognitive impairments. Animal-assisted intervention is gaining momentum in a variety of caregiving fields where workplace stress is a constant. There is extensive documentation of a range of worker mental health issues including secondary traumatic stress and compassion fatigue among helping professionals (Bride et al. 2004; Buchanan et al. 2006; Figley 1995, 1996, 2002a, b; Stewart 2012) as well as vicarious trauma (Dill 2007; Devilly et al. 2009; Najjar et al. 2009) and burnout (Acker 2011; Halbesleben and Buckley 2004; Harr and Moore 2011; Horowitz 2006; Maslach 2001; Newell and MacNeil 2011). These conditions lead to substantive human and financial costs and thus an initiative that can benefit clients as well as staff appears to be one whose implementation and funding should not be questioned. However, few counseling interventions are straightforward especially in the fields of aging and dementia.

What was observed was the dichotomy between staff working different shifts. Day staff were overwhelming in favor of the program, viewing substantive improvements in their clients' functioning and behavior and as an indirect result having positive effect on the workplace environment. However, afternoon and night shift staff did not report any substantive benefit of the animals in their work environment nor did they see any protracted change in the behavior of residents on the unit perhaps because of why they were living there; the inability to retain new memories. However, an alternative possibility is that the outcome was due not to the AAI but rather the effects of shift work syndrome (SWS). SWS is a condition shift workers experience that affects their sleep creating fatigue, cardiovascular disease, cancer, and increased workplace accidents. Also to be considered is if employees who work the day shift and whose routine is more congruent with Canadian societal work patterns simply have a more positive outlook and response than those who work shifts and have less congruent personal and social lives (Akerstedt and Wright 2009; Culpepper 2010). What also needs to be considered in

examining the outcomes of the study is the potential confounding effect of Sundown Syndrome which can occur during morning or evening transitions between daylight and darkness; dawn and dusk. Sundowning is unique to each individual and not all those with dementia exhibit the symptoms but they generally consist of increased confusion, agitation and acting out by those with dementia (Cipriani et al. 2015). Having to regularly respond to Sundown Syndrome may have also contributed to staff not working the day shift to minimize the effect that AAI might have produced on residents.

At the heart of this study is a fundamental question. Animal-assisted intervention certainly has additional costs and liabilities because of the presence of living creatures. There are also risks to the animals because of unintended mishandling by residents due to their diminished cognitive capacities. Also, the animals are not there for staff to engage with and their presence can actually be disruptive to routines which are essential in a care facility housing vulnerable individuals. However, what interested the researchers at the beginning of the initial research question was how do we treat each other especially as we age and become more fragile? One reason AAI is successful among this population is that every time the animals were introduced to the environment, which was three times a week for 8 weeks, it was if they were there for the first time for the residents. Residents retained no memory of previous animal engagement which made each encounter in essence a first encounter. It was this fact that contributed to the ongoing positive reactions but also the lack of any sustained gains even into the very next work shift just a few hours after the animals departed the facility. So given, there is no memory of the event and the impact while positive is fleeting, the question must be asked is it worth the financial cost and associated risks to the animals? This question has examined in part by this follow-up study though the conclusions are not definitive.

There was a positive impact of AAI on the residents but there was also a perceived positive impact on a majority of the employees who participated in the key informant interviews and the entire work environment. Though not sustained, day staff reported residents to be temporarily calmer. They stated that residents were temporarily more engaged. They also reported a more positive working atmosphere in this high stress environment. But what of the afternoon and night staff? Simply, in this pilot study, there was no thought given to bringing the animals in at different times of the day and evening. Instead a regular routine was deemed of greater importance. It would thus be a simple solution to alternate programming in the morning, afternoon and evening in order to assess if there is in fact benefit not only residents but also to staff. Also, by instituting programming in the evenings, it would provide some families the opportunity to also participate with their aging relatives in a more positive and active manner.

This exploratory qualitative study's major limit was that it was conducted in only one setting, using one form of AAI on one population using one group of workers. While the goal of qualitative research is a complete detailed description, only key informant interviews were used rather than focus groups or engaging in an ethnographic examination of the phenomenon. Thus, there remains great opportunity for future work in this area beginning with using different qualitative approaches as well as engaging in quantitative analysis using a formal pre-test/post-test control group to study changes in employee mental health and wellness. Also, AAI could be provided to individuals with less severe forms of dementia, as well as those who are community-based to assess if there is more or less impact on workers than noted in this study.

Finally, a specific issue to examine in greater depth arising from this research is if implementing AAI at different times produces positive impacts on both workers and family member's mental health.

Compliance with Ethical Standards

Conflict of Interest Julie Casey had NO relationship, financial or otherwise, with individuals or organizations that could influence the author's work inappropriately, a conflict of interest may exist.

Rick Csiernik had NO relationship, financial or otherwise, with individuals or organizations that could influence the author's work inappropriately, a conflict of interest may exist.

David Knezevic had NO relationship, financial or otherwise, with individuals or organizations that could influence the author's work inappropriately, a conflict of interest may exist.

Joanne Ebear had NO relationship, financial or otherwise, with individuals or organizations that could influence the author's work inappropriately, a conflict of interest may exist.

Interview Guide

1. Can you tell me your role? How long worked here?
What type of interaction did you have with the Farm Animal assisted intervention program?
2. What is your overall impression of the program?
Probe:
What were your thoughts of having animals on the unit?
Did it make your job easier in any way?
Did it make your job more difficult in any way?
Did it make your job more enjoyable?
3. What was the impact on residents?
Probe:
Did it led to different behaviours?
Did it affect their interpersonal relationships other residents did it decrease, agitation, aggressive or acting out behaviour?
What type of impact did it have in the home area?
4. What impact did it have on families?
Probe:
Did it make communication or interpersonal relationships better?
5. What impact did you have on the workplace?
Probe:
Did you see any differences between program days (Mon/Wed/Friday) and non-program days?
Did you witness any changes in behavior of your co-workers arising from the AAI program?
What impact did it have on the overall mood and morale in Memory Lane?
6. Any suggestions for improvement?
7. Do you think the program should be continued?
Probe:
Why / Why not?
8. Anything else you would like to add that we haven't talked about?
Thank you for your time.

References

- Acker, G. M. (2011). Burnout among mental health care providers. *Journal of Social Work, 12*(5), 475–490.
- Akerstedt, T., & Wright, K. (2009). Sleep loss and fatigue in shift work and shift work disorder. *Sleep Medicine Clinics, 4*(2), 257–271.
- Alzheimer Society Canada (2016). *Understanding behaviours*. Retrieved from; <http://www.alzheimer.ca/en/Living-with-dementia/Understanding-behaviour>.
- Beetz, A., Uvnäs-Moberg, K., Julius, H., & Kotrschal, K. (2012). Psychosocial and psychophysiological effects of human-animal interactions: the possible role of oxytocin. *Frontiers in Psychology, 3*, 234.
- Bernabei, V., De Ronchi, D., La Ferla, T., Moretti, F., Tonelli, L., Ferrari, B., Forlani, M., & Atti, A. (2013). Animal-assisted interventions for elderly patients affected by dementia or psychiatric disorders: a review. *Journal of Psychiatric Research, 47*(6), 762–773.
- Boat, B. (1994). *Boat inventory on animal-related experiences*. Cincinnati: University of Cincinnati, Department of Psychiatry.
- Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and validation of the secondary traumatic stress scale. *Research on Social Work Practice, 1*(1), 27–35.
- Brodady, H., Draper, B., & Low, L. F. (2003). Nursing home staff attitudes towards residents with dementia: strain and satisfaction with work. *Journal of Advanced Nursing, 44*(6), 583–590.
- Buchanan, M., Anderson, J. O., Uhlemann, M. R., & Horwitz, E. (2006). Secondary traumatic stress: an investigation of Canadian mental health workers. *Traumatology, 12*(4), 272–281.
- Chandler, C. K. (2005). *Animal assisted intervention in counseling*. New York: Routledge.
- Cipriani, G., Lucetti, C., Carlesi, C., Danti, S., & Nuti, A. (2015). Sundown syndrome and dementia. *European Geriatric Medicine, 6*(4), 375–380.
- Csiernik, R. (2014). *Workplace wellness: issues and responses*. Toronto: Canadian Scholars Press.
- Csiernik, R., & Birnbaum, R. (2017). *Practicing social work research: case studies for learning* (2nd ed.). Toronto: University of Toronto Press.
- Culpepper, L. (2010). The social and economic burden of shift-work disorder. *The Journal of Family Practice, 59*(1), S3–S11.
- Devilly, G. J., Wright, R., & Varker, T. (2009). Vicarious trauma, secondary traumatic stress or simply burnout? Effect of trauma therapy on mental health professionals. *Australian and New Zealand Journal of Psychiatry, 43*(4), 373–385.
- Dill, K. (2007). Impact of stressors on front-line child welfare supervisors. *The Clinical Supervisor, 26*(1/2), 177–193.
- Edberg, A., Bird, M., Richards, D., Woods, R., Keeley, P., & Davis-Quarrell, V. (2008). Strain in nursing care of people with dementia: nurses' experience in Australia, Sweden and United Kingdom. *Aging and Mental Health, 12*(2), 236–243.
- Engelman, S. (2013). Palliative care and use of animal-assisted therapy. *OMEGA-Journal of Death and Dying, 67*(1–2), 63–67.
- Figley, C. R. (1995). *Compassion fatigue: coping with secondary traumatic stress disorder in those who treat the traumatized*. New York: Brunner/Mazel.
- Figley, C. R. (1996). Review of the compassion fatigue self-test. In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation*. Baltimore: Sidran Press.
- Figley, C. R. (2002a). Compassion fatigue: psychotherapists' chronic lack of self-care. *Psychotherapy in Practice, 58*(11), 1433–1441.
- Figley, C. R. (2002b). *Treating compassion fatigue*. New York: Brunner/Routledge.
- Filan, S. L., & Llewellyn-Jones, R. H. (2006). Animal-assisted therapy for dementia: a review of the literature. *International Psychogeriatrics, 18*(4), 597–611.
- Gitlin, L. N., Marx, K., Stanley, I. H., & Hodgson, N. (2015). Translating evidence-based dementia caregiving interventions into practice: state-of-the-science and next steps. *The Gerontologist, 55*, 210–226.
- Halbesleben, J. R., & Buckley, M. R. (2004). Burnout in organizational life. *Journal of Management, 30*(6), 859–879.
- Hanrahan, C., (2013). Social work and human animal bonds and benefits in health research: a provincial study. *Critical Social Work, 14*(1). Retrieved from <http://www1.uwindsor.ca/criticalsocialwork/SWhumananimalbonds>
- Harr, C., & Moore, B. (2011). Compassion fatigue among social work students in field placement. *Journal of Teaching in Social Work, 31*(4), 350–363.
- Horowitz, M. J. (2006). Work-related trauma effects in child protection social workers. *Journal of Social Service Research, 32*(3), 1–18.
- Kamioka, H., Okada, S., Tsutani, K., Park, H., Okuizumi, H., Handa, S., Oshio, T., Park, S., Kitayuguchi, J., Takafumi, A., Honda, T., & Mutoh, Y. (2014). Effectiveness of animal-assisted therapy: a systematic review of randomized controlled trials. *Complementary Therapies in Medicine, 22*(2), 371–390.
- Kash, B. A., Naufal, G. S., Cortés, L., & Johnson, C. E. (2010). Exploring factors associated with turnover among registered nurse (RN) supervisors in nursing homes. *Journal of Applied Gerontology, 29*(1), 107–127.

- Kim, H., Chang, M., Rose, K., & Kim, S. (2012). Predictors of caregiver burden in caregivers of individuals with dementia. *Journal of Advanced Nursing*, *68*(4), 846–855.
- Lachs, M. S., Rosen, T., Teresi, J. A., Eimicke, J. P., Ramirez, M., Silver, S., & Pillemer, K. (2013). Verbal and physical aggression directed at nursing home staff by residents. *Journal of General Internal Medicine*, *28*(5), 660–667.
- Lefebvre, S. L., Golab, G. C., Christensen, E., Castrodale, L., Aureden, K., Bialachowski, A., & Writing Panel of Working Group. (2008). Guidelines for animal-assisted interventions in health care facilities. *AJIC: American Journal of Infection Control*, *36*(2), 78–85.
- Majić, T., Gutzmann, H., Heinz, A., Lang, U. E., & Rapp, M. A. (2013). Animal-assisted therapy and agitation and depression in nursing home residents with dementia: a matched case-control trial. *The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry*, *21*(11), 1052–1059.
- Maslach, C. (2001). Job burnout. *Annual Review of Psychology*, *52*(1), 397–423.
- McGilton, K., Boscart, V., Brown, M., & Bowers, B. (2014). Making tradeoffs between the reasons to leave and reasons to stay employed in long-term care homes: perspectives of licensed nursing staff. *International Journal of Nursing Studies*, *51*(6), 917–926.
- Morgan, D., Cammer, A., Stewart, N., Crossley, M., D'Arcy, C., Forbes, D., & Karunanayake, C. (2012). Nursing aide reports of combative behavior by residents with dementia: results from a detailed prospective incident diary. *Journal of the American Medical Directors Association*, *13*(3), 220–227.
- Najjar, N., Davis, L. W., Beck-Coon, K., & Carney Doebbeling, C. (2009). Compassion fatigue a review of the research to date and relevance to cancer-care providers. *Journal of Health Psychology*, *14*(2), 267–277.
- Netherton, E., & Schatte, D. (2011). Potential for oxytocin use in children and adolescents with mental illness. *Human Psychopharmacology: Clinical and Experimental*, *26*(4–5), 271–281.
- Newell, J. M., & MacNeil, G. A. (2011). A comparative analysis of burnout and professional quality of life in clinical mental health providers and mental health care administrators. *Journal of Workplace Behavioral Health*, *26*(1), 25–43.
- Nordgren, L., & Engström, G. (2014). Animal-assisted intervention in dementia: effects on quality of life. *Clinical Nursing Research*, *23*(1), 7.
- O'Haire, M. (2013). Animal-assisted intervention for autism spectrum disorder: a systematic literature review. *Journal of Autism and Developmental Disorders*, *43*(7), 1606–1622.
- Olmert, M. (2009). *Made for each other: the biology of the human-animal bond*. Cambridge: Lifelong Books/Da Capo Press.
- Pitfield, C., Shahriyarmolki, K., & Livingston, G. (2011). A systematic review of stress in staff caring for people with dementia living in 24-hour care settings. *International Psychogeriatrics*, *23*(1), 4–9.
- Richeson, N. (2003). Effects of animal-assisted therapy on agitated behaviors and social interactions of older adults with dementia. *American Journal of Alzheimer's Disease and Other Dementias*, *18*(6), 353–358.
- Selbæk, G., Engedal, K., & Bergh, S. (2013). The prevalence and course of neuropsychiatric symptoms in nursing home patients with dementia: a systematic review. *Journal of the American Medical Directors Association*, *14*(3), 161–169.
- Sellers, D. (2006). The evaluation of an animal assisted intervention intervention for elders with dementia in long-term care. *Activities, Adaptation & Aging*, *30*(1), 61–77.
- Stewart, D. W. (2012). Compassion fatigue: what is the level among army chaplains? *Journal of Workplace Behavioral Health*, *27*(1), 1–11.
- Tak, S., Sweeney, M. H., Alterman, T., Baron, S., & Calvert, G. M. (2010). Workplace assaults on nursing assistants in US nursing homes: a multilevel analysis. *American Journal of Public Health*, *100*(10), 1938–1945.
- U.S. Agency for International Development Information and Evaluation. (1996). Conducting key information interviews. *Performance monitoring and evaluation*, *1996*(2), Retrieved from: http://pdf.usaid.gov/pdf_docs/pnabs541.pdf.
- University of Ottawa. (2016). *Facts & figures: aging in Canada and the world*. Retrieved from: https://www.med.uottawa.ca/sim/data/Aging_e.htm.
- Woodhead, E., Northrop, L., & Edelstein, B. (2016). Stress, social support, and burnout among long-term care nursing staff. *Journal of Applied Gerontology*, *35*(1), 84–105.
- Zhang, Y., Punnett, L., Gore, R., & CPH-NEW Research Team. (2014). Relationships among employees' working conditions, mental health, and intention to leave in nursing homes. *Journal of Applied Gerontology*, *33*(1), 6–23.