

Staff Members' Perceptions of an Animal-Assisted Activity

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Animal-assisted interventions are based on recognizing the potential health benefits of the human-animal bond. Animal-assisted interventions consist of animal-assisted activities (AAAs) and animal-assisted therapies. AAAs (e.g., canine visitation programs) provide motivational, educational, recreational, and therapeutic benefits when delivered in various environments (Pet Partners, 2009). Animal-assisted therapies are interventions with specific goals and objectives in either individualized or group therapy settings. The current study implemented a volunteer AAA in an adult outpatient oncology center.

Dogs are the species used most often in animal-assisted interventions (Wells, 2009). Dogs are a familiar species that are trainable and follow commands, and most people perceive dogs as friendly and nonjudgmental. In addition, they have been considered social catalysts capable of facilitating interactions between people (Wells, 2009). This may be because of dogs' ability to elicit friendly physical touch (Kaiser, Spence, McGavin, Struble, & Keilma, 2002), which can be relaxing but is often awkward among people (Beck & Katcher, 1996). Neurochemicals associated with affiliation behavior (β -endorphin, oxytocin, prolactin, β -phenylethylamine, and dopamine) increase in humans and canines after a positive interaction (Odendaal & Meintjes, 2003). Researchers also have suggested that the efficacy of animal-assisted interventions may come from the social support they provide (Fine & Beck, 2010).

AAA includes a dog and its handler, who introduces, interprets, and manages the dog. Handlers are usually a stranger to the visit recipient, but also may provide social support. Research emphasizes that handlers play a significant and often overlooked role in AAA (Nimer & Lundhal, 2007).

Animal-Assisted Activity in Oncology

Growing evidence suggests AAA may effectively complement cancer treatments. In a pilot study by

Purpose/Objectives: To examine the perceptions of staff members toward the implementation of an animal-assisted activity (AAA) in an outpatient regional cancer center.

Design: Quasi-experimental, post-test design.

Setting: An adult outpatient regional cancer center in northern California.

Sample: 34 facility staff members.

Methods: Self-report questionnaire following four weeks of AAA visitation. Visits took place three times a week for a total of 12 visits.

Main Research Variables: Perceptions of the AAA.

Findings: Previous perceptions toward AAA influenced the perceptions of the visitation's efficacy. Direct and indirect interaction with the visiting AAA teams was positively associated with perceptions of the AAA. A disagreement occurred that the AAA had caused extra stress or work for staff. Enjoyment of interacting with the dog handler was not significantly different from interacting with the dog; however, it was more positively correlated to acceptance of the AAA.

Conclusions: The study provided evidence that the AAA was generally accepted by staff members.

Implications for Nursing: Individual staff members' perceptions of dogs and AAAs can influence their receptivity to AAA interventions. Interaction with AAA teams should be voluntary and available for patients and staff members.

Knowledge Translation: AAA may be introduced into facilities without creating the perception of extra stress or work for staff members. Providing staff the opportunity to interact with visiting AAA teams may be beneficial for the success of such programs. The human handler in AAA teams may play a vital role in the staff acceptance of such programs.

Müschel (1984), AAAs provided comfort and alleviated fears in older adult patients with terminal cancer. Orlandi et al. (2007) showed that AAAs decreased depression and were associated with increased arterial oxygen levels in adult patients with cancer during chemotherapy compared with a control group. Johnson, Meadows, Haubner, and Sevedge (2003) found that animal-assisted interventions met the National

Cancer Institute's definition of a complementary and alternative medical intervention, and the team stressed the ability for complementary and alternative medicine techniques to "enable [patients] to be active participants in both managing their disease and expanding their quality of life" (p. 66). Patients determine their own level of participation in AAAs, gaining a sense of control and autonomy. Johnson et al. (2008) explored the effects of mood, self-perceived health, and the sense of coherence in patients with cancer during radiation therapy. Participants receiving AAAs reported improved emotional health over a four-week period; however, participants receiving human visits or quiet reading sessions reported that it declined. Group participants described AAA as a welcome distraction. Others have stressed the ability of AAA teams to divert focus from stressors inherent in the healthcare experience (Barba, 1995; Cole & Gawlinski, 2000; Moody, King, & O'Rourke, 2002; Sobo, Eng, & Kassity-Krich, 2006).

Side effects of oncology treatments, such as chemotherapy-induced alopecia, have been associated with poorer body image and self-esteem. Qualitative findings showed that side effects served as a constant reminder of the disease, invoking a significant emotional response (Williams, Wood, & Cunningham-Warburton, 1999). Resulting physical changes were associated with significantly lower self-concept and self-esteem in both genders (Hilton, Hunt, Emslie, Salinas, & Ziebland, 2008; Münstedt, Manthey, Sachsse, & Vahrson, 1997). AAA dogs provide unconditional acceptance of the appearance of patients (Wells, 2009). Dogs' nonjudgmental nature and ability to elicit physical contact may additionally increase social support for patients with cancer.

Perceptions of Animal-Assisted Activity

Researchers have explored how AAAs have been received by professionals in various healthcare settings. Moody et al. (2002) found that the perceptions of administrative staff, doctors, and nurses of an AAA were more positive following its introduction compared to anticipatory perceptions. Qualitative findings have shown that healthcare professionals view AAAs as facilitating interaction with patients (Rossetti, DeFabiis, & Belpedio, 2008; Velde, Cipriani, & Fisher, 2005). Positive attitudes toward animals have been associated with staff members' perceived benefits of AAA (Crowley-Robinson & Blackshaw, 1998; Winkler, Fairnie, Gericevich, & Long, 1989).

For an AAA to be successful, it should be designed for the setting, and staff members at the facility should be involved in design and implementation (Moody et al., 2002; Müschel, 1984). Programs should be systematically evaluated to assess efficacy and optimal matches with patients and staff (Barba, 1995; Johnson et al., 2003).

Study Aims

One purpose of this research was to test the hypothesis that staff members with positive perceptions toward AAA would have more positive perceptions of an AAA in their facility. Conversely, staff members who believed AAAs were inappropriate and created an increased risk of disease would not feel positively toward the facility AAA. A second hypothesis predicted that staff members who directly and indirectly interacted with the AAA teams would have a more positive perception of AAAs and their impact. Staff members' perception of extra work or stress in the facility were assessed. The study also explored relationships among staff member interactions with the dog handler and perceptions of the AAA.

Methods

Participants

Five volunteer AAA teams were comprised of an adult woman and one or two medium-to-large sized dogs. All teams were registered with the Pet Partner Program. In addition, each handler completed the hospital's volunteer training. The AAA teams were the first group enrolled in the hospital's PAWS (Pets Assisting With Service) program. Dog handlers were required to complete a proctoring session at the outpatient regional center before visiting independently. The Cancer Support Program liaison led the proctoring. One AAA team had previously visited the facility (animal-assisted interventions had been discontinued during facility reorganization). AAA teams began the shadowing process by having each dog handler (without dog) observe the AAA team visiting per established procedures. Handlers could independently visit with her dog and lead the shadowing for another team once shadowing was completed.

Following the four-week AAA intervention, staff members were given one week to complete an anonymous investigator-developed questionnaire. All healthcare and administrative staff members at the facility were invited to participate, and questionnaires were placed in break rooms. Of the 55 staff members, 34 completed the questionnaires.

Procedure

One AAA team visited the facility at a time. Visits occurred late mornings on Monday, Wednesday, and Friday, for four weeks. No set length was established for visits with individual patients or time at the facility, and the total time at the facility ranged from 20–90 minutes. The AAA took place in two separate waiting areas and the infusion therapy room.

The dog handler contacted a designated department staff member via in-house phones prior to entering

clinical areas. The staff member then cleared the area, first verbally ascertaining that no patients or visitors had any fear, dislike, or allergies to dogs, and then asking who in the room would like to receive an AAA visit. Individuals who wanted a visit and who were not immunocompromised were given a sticker to place on their shirt or gown to indicate their interest in a visit. The AAA team then entered and visited individuals with stickers.

Instruments

Topics addressed were chosen based on previous instruments that assessed opinions of patients who were AAA recipients, specifically, the investigator-developed questionnaire and the Self-Perceived Health Questionnaire used by Johnson et al. (2008). No pilot testing was conducted because it may have influenced findings with such a small population and short study period. The instrument was submitted to and approved by the Cancer Support Program Liaison, and both the

instrument and study had institutional review board approval. The program’s Cronbach alpha coefficient of 0.856 suggested that it had very good reliability with the present sample.

No demographic or employment characteristics were collected to maintain confidentiality and promote honest participant responses. The questionnaire contained three sections and 26 items. Section 1 asked about perceptions of AAA in general and of the facility AAA. It included 15 Likert-type items ranging from 1 (disagree completely) to 9 (completely agree). Likert-type items were chosen to measure staff member attitudes; such measures have been widely and successfully used to quantify qualitative information (Streiner & Norman, 2008). Higher scores indicated stronger agreement to the statement with a score of five indicating a neutral response. One item addressed the degree of interaction staff members had with the visiting AAA teams over the past four weeks with three possible choices: “No,” “Yes, a little,” and “Yes, a lot.”

Section 2 addressed perceptions of the effects of the AAA on patients. Four experiential and two Likert-style items were included. The two sections concluded with an area of blank lines in which respondents could include comments, clearly marked as optional.

Section 3 asked about current and past companion animal (pet) ownership. Three items asked whether respondents currently or previously had pets and, if so, what species and number owned. Analyses of perceptions based on past and present pet owners are not presented because of the disproportionate number of owners (85% at the time of the study, 97% in the past).

Data analyses were conducted using PASW statistics, version 18. Statistical significance was set at 0.05, and two-tailed tests were employed. Pearson’s product-moment correlation coefficients determined relationships between perceptions. Analysis of variance (ANOVA) was used to determine differences between group responses based on the experiential items.

Findings

Perceptions of Animal-Assisted Activity

The mean score for liking AAAs was 8.24 and ranged from 5–9 (SD = 1.2) (see Table 1). Agreement with the statement, “I do not think animals should be allowed in healthcare facilities” had a mean score of 2.71 (SD = 2.28) and ranged from 1–9. Agreement that animals create an increased risk of disease in healthcare settings had a mean score of 3.41 (SD = 2.2) and ranged from 1–9. Agreement that AAAs were appropriate interventions for patients with cancer had a mean score of 7.71 (SD = 1.64) with a range of 2–9.

Agreement that the intervention was beneficial for patients had a mean score of 6.97 (SD = 1.68) and

Table 1. Staff Member Agreement With Positive and Negative Perceptions of Animal-Assisted Activity (AAA) (N = 34)

General Perception	n	\bar{X}	SD	Range ^a
Like the idea of AAA	34	8.24	1.2	5–9
Animals should not be allowed.	34	2.71	2.28	1–9
Increased risk of infection	34	3.41	2.2	1–9
Appropriate for patients with cancer	34	7.71	1.64	2–9
Perception at the Outpatient Oncology Center	n	\bar{X}	SD	Range ^a
Would be beneficial	32	7.94	1.34	4–9
Has been beneficial	31	6.97	1.68	4–9
AAA should continue at the facility.	33	7.82	1.74	3–9
Would cause extra stress	34	2.74	2.3	1–9
Has caused extra stress	34	2.24	2.15	1–9
Would create extra work	34	2.14	1.79	1–7
Has created extra work	34	1.88	1.97	1–9
Enjoy interacting with the handler	29	7.66	1.67	3–9
Enjoy interacting with the dog	30	7.4	2.19	2–9

^a Possible range of all items was from 1 (disagree completely) to 9 (completely agree).

ranged from 4–9. Agreement with the statement that AAA should continue at the facility had a mean score of 7.82 (SD = 1.74) and a range of 3–9. Table 2 provides the correlations among those six perceptions. Negative perceptions of AAAs in general were strongly correlated with negative perceptions of the facility AAA. Positive perceptions of AAA were correlated with positive perceptions of the facility AAA. Results supported the first hypothesis.

Eleven participants included comments for Section 1; eight were positive, two were ambivalent, and one was negative. An example of a positive comment was, “I have experienced the positive effect . . . positive experience for everybody, patient, family, and staff many times.” Ambivalent comments centered on implementation of AAA: “I am completely opposed to patients bringing their own pets into healthcare facilities. I am supportive of trained, cleaned, pet teams being in the facility.” The negative comment focused on added stress for nurses, “There have been times when [AAA] interrupted care of patient.”

Interaction With Visiting Animal-Assisted Activity Teams

Four participants (12%) reported having had no interaction with the AAA teams, 21 (62%) had a little, and 9 (27%) had a lot. A one-way ANOVA with the independent variable of amount of interaction (none, a little, a lot) indicated that staff agreement on whether AAAs were appropriate interventions for patients with cancer varied significantly according to the degree of interaction staff had with visiting AAA teams ($F[2, 31] = 5.6, p = 0.008$). Post-hoc Tukey comparisons indicated that staff who had a lot of direct interaction agreed significantly more with the appropriateness of AAAs ($\bar{X} = 8.67, SD = 0.71$) than those who reported no interaction ($\bar{X} = 5.75, SD = 0.96$). No significant differences existed in agreement toward appropriateness of the AAA among those with a little interaction and no interaction or those with a little interaction and a lot of interaction with the AAA teams. Three staff members (9%) had not observed patient interaction with visiting AAA teams, 12 (35%) had observed a little, and 19 (56%) had observed a lot.

Table 2. Correlations Between Positive and Negative Perceptions and Animal-Assisted Activity (AAA) (N = 34)

Statement	Like the Idea of AAA	Animals Should Not Be Allowed	Increased Risk of Infection	Appropriate for Patients With Cancer
	r	r	r	r
Like the idea of AAA	–	–0.492**	–0.322	0.662**
Animals should not be allowed.	–0.492**	–	0.816**	–0.518**
Increased risk of infection	–0.322	0.816**	–	–0.409*
Appropriate for patients with cancer	0.662**	–0.518**	–0.409*	–
Would be beneficial (N = 32)	0.848**	–0.625**	–0.37*	0.545**
Has been beneficial (N = 31)	0.358*	–0.401*	–0.217	0.445*
AAA should continue at the facility (N = 33).	0.697**	–0.601*	–0.5**	0.619**

* $p < 0.05$; ** $p < 0.001$

A one-way ANOVA with the independent variable of degree of observed interaction (none, a little, a lot) indicated that perceptions of the intervention having been beneficial for patients differed across the groups ($F[2, 28] = 20.55, p < 0.001$). Post-hoc Tukey comparisons indicated that staff members who had observed a lot of interaction ($\bar{X} = 8.12, SD = 1.27$) agreed that the AAA had been beneficial for patients significantly more than those who had seen only a little interaction ($\bar{X} = 5.67, SD = 0.89$) and those who reported not seeing any interaction ($\bar{X} = 5, SD = 0.00$). No significant differences existed among staff members who observed a little interaction and no interaction.

Thirteen (38%) staff members reported that patients had not spoken to them about the AAA, 13 (38%) reported patients had spoken to them a little, and 8 (24%) reported that they had done so a lot. A one-way ANOVA indicated that agreement on the benefits of the intervention for patients differed across the groups; however, homogeneity of variances across groups was violated. The assumption violation remained with Welch’s test, indicating that the groups could not be compared because of possible systematic similarities between them.

Direct interaction with the visiting AAA teams was associated with agreement that AAAs were appropriate for patients with cancer. Indirect interaction with the AAA teams was associated with agreement that the AAA had been beneficial for patients. Although the homogeneity between groups based on level of interaction could not be assumed for much of the analyses, several of the results indicated support for the second hypothesis.

Five participants provided comments for Section 2, four were ambivalent and one was negative. One example of an ambivalent comment was, “I have seen that some people are done after one visit—which I didn’t really expect. Others look forward to seeing the dogs again and again.” The negative comment underscored the relationships between negative perceptions of AAA and their appropriateness: “There have been patients that were afraid of the dog or too ill to interact. I personally don’t think animals belong in a healthcare facility.”

Animal-Assisted Activity, Extra Stress, and Work

Agreement that an AAA would cause extra stress had a mean score of 2.74 and a range of 1–9 (SD = 2.3); agreement that it had caused extra stress had a mean score of 2.24 and a range of 1–9, as well (SD = 2.15). A paired-samples t test indicated that the two perceptions were not significantly different. The mean score that an AAA would create extra work for individuals prior to implementation was 2.14 with a range of 1–7 (SD = 1.79); the mean score with agreement that it had created extra work was 1.88 and ranged from 1–9 (SD = 1.97). A paired-samples t test indicated that perceptions of extra work were not significantly different. Although the results went in the hypothesized direction, differences were not significant. The general disagreement that either outcome would result made significant differences less likely.

Table 3. Statement Correlations With Enjoyment of Interacting With the Handler Compared to the Dog (N = 34)

Statement	Interacting With Handler		Interacting With Dog	
	n	r	n	r
Like the idea of AAA	29	0.403*	30	0.375*
Animals should not be allowed.	29	−0.389*	30	−0.306
Increased risk of infection	29	−0.344	30	−0.245
Appropriate for patients with cancer	29	0.443*	30	0.467*
Would be beneficial	29	0.496**	29	0.467*
Has been beneficial	31	0.602**	28	0.355
AAA should continue at the facility.	29	0.857**	30	0.547**

* p < 0.05; ** p < 0.001
AAA—animal-assisted activity

Interactions With the Handler

Respondents who had interacted with an AAA team reported having enjoyed interacting with the dog handler (n = 29, \bar{X} = 7.66, SD = 1.67, range = 3–9) and with the dog (n = 30, \bar{X} = 7.4, SD = 2.19, range = 2–9). A paired-samples t test indicated that the mean score for enjoying interaction with the handler was not significantly different than that from the dog. Table 3 provides the correlation coefficients between the other perceptions and enjoying interacting with the handler compared with enjoying interacting with the dog.

Correlates with those perceptions illustrated a trend for stronger associations with anticipatory benefit than perceived actual benefit for patients. However, this trend reversed for agreement of enjoyment of interacting with the handler. This anomaly in the results indicated that enjoyment in interacting with the dog handler had a unique relationship with the perceptions of the AAA’s efficacy for patients. The most robust finding of the study was the positive correlation between the enjoyment of interacting with the handler and support for continuation of AAA at the facility.

Discussion

The overall agreement that AAA should continue at the facility provided evidence that healthcare staff members viewed the AAA positively. The most influential results concerned the role of the dog handler, indicating that the handler played a vital role in acceptance of the AAA.

The results do not discount the role that the dog plays in an AAA. The dog is an indispensable member of any AAA team; however, the underlying mechanisms at work may be what the handler is actively doing along with what the dog is facilitating. Results of the current study may support the claim by Wells (2009) that dogs act as social catalysts. The dog may ease communication between two strangers; while the human visitor is simultaneously interacting with patients in ways which may increase perceived social support (Kaiser et al., 2002). The issue of who in the AAA team is the bearer of the majority of social support may be a product of individual patient perception. The issue has been raised by previous researchers and has yet to be directly empirically addressed (Nimer & Lundhal, 2007).

Limitations

The Hawthorne Effect is an inherent limitation of self-report data. However, it was not in the respondents’ interests to report positive perceptions toward the intervention if they felt the intervention was either inappropriate or should not continue. The primary investigator was not part of an AAA team nor did she have direct contact with the staff members who completed questionnaires.

Participants self-selected, and no system was in place to ensure that a respondent had not completed more than one questionnaire. Staff who felt more strongly about the intervention (either positively or negatively) may have been more likely to complete the questionnaire, while those without strong opinions may have been less likely to participate. In addition, correlational data cannot demonstrate cause and effect. Correlations only can provide information regarding associations and directions of relationships.

The method employed to ensure anonymity made it impossible to determine whether respondents were administrative or healthcare staff. It would have been interesting to study differences between them in the degree of interaction with visiting AAA teams, along with direct and indirect interaction with patients concerning AAAs. Differences in each group (such as job title and responsibilities) may have led to differences in perceptions. Most pertinent to the current study is the difference among education levels and the ability to evaluate effects of interventions (Giger & Davidhizar, 1990). The level of position, training, and education of participants could not be determined in the current study.

Degree of direct and indirect interaction with the AAA teams may have been confounded by staff member positions or perceptions toward AAAs in general. Staff members with negative perceptions toward AAAs or dogs may have avoided any interaction with the AAA teams.

Retrospective first impressions are not equal to actual first impressions. The use of a pretest would have allowed for greater internal validity. Anticipatory perceptions should have been measured shortly after staff members had been notified that the AAA would take place. Instead, anticipatory perceptions were assessed after the visits had been taking place for more than four weeks. Moody et al. (2002) had a much lower response rate 12 weeks after the introduction of an animal-assisted therapy program compared with six weeks prior to its introduction (115 versus 45 respondents, respectively). Although Moody et al.'s (2002) study benefited from an identical pre- and post-test, the discrepancy in sample sizes meant the two groups could not be assumed as comparable because the variability among and in the pre- and post-test samples could not be assumed. The sampling method of the current study allowed for those assumptions of variability.

The scale and the results from the use of the scale would have benefited from pilot testing to identify any unclear terms. It also would have been useful to ask staff members about specific benefits of AAA that they perceived in the patients (e.g., relief from anxiety, reduced pain experienced, increased social support, distraction).

The presented results do not speak to the actual patient benefit of AAA; they only provide evidence for staff member perceptions. Winkler et al. (1989)

showed that staff members perceived the addition of animal-assisted interventions to be more beneficial than the patients perceived it to be. The true measure of such an intervention's efficacy is how it benefits the recipients of the AAA. Johnson et al. (2003) emphasized that patients are the ultimate judges of whether complementary therapies are successful. Future studies should explore the degree to which the handler influences patient-perceived benefits.

Implications for Nursing

The importance of patient perception does not negate the significance of staff member approval of a complementary therapy. Stress plays a significant deleterious role in job satisfaction among oncology staff members, and perceived work load is positively correlated with work stress (Dougherty et al., 2009). Nurses are more satisfied with their work environment when they support the interventions being used (Adams & Bond, 2000). Inclusion of staff in management issues has been associated with improved job satisfaction (Arnetz, 1999). The intention of focusing on staff member perceptions was to assess the overall approval and acceptance of an AAA, as well as to discern to what degree an AAA was considered intrusive.

Conclusion

The staff in the current facility held generally positive perceptions of the AAA and strong agreement occurred for the AAA to continue. However, universal acceptance of any intervention cannot be expected, and no intervention should obstruct patient care. Staff members largely disagreed that the AAA had created extra stress or work. Findings implied that AAAs may be implemented without detrimental effects to the clinical unit. Results also indicated staff members' perceptions of AAAs played a central role in their acceptance of and receptivity to the AAA.

Staff may benefit from having their own time for interaction with the visiting AAA teams. Teams may help to alleviate work place stress and improve staff member mood. Previous research by Moody et al. (2002) showed that staff in a healthcare facility perceived a happier and more interesting workplace because of an AAA. Staff should be able to interact with the visiting AAA teams, but not be forced to. Individuals must never be forced into interacting with a visiting AAA team (Johnson et al., 2003). Findings from the current study support previous author suggestions that animal-assisted interventions may create a more comfortable environment for patients and staff (Barba, 1995; O'Conner-Von, 2010).

Allocated time for staff members to interact with the AAA team also may enhance staff member approval

of an AAA program. The current study illustrated that individuals who had more direct contact with the AAA team held more favorable opinions regarding the AAA. Staff may benefit from the unique relationship formed with handlers and their dogs. In addition, the findings of this study may enhance staff support of AAA in oncology settings.

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References

- Adams, A., & Bond, S. (2000). Hospital nurses' job satisfaction, individual and organizational characteristics. *Journal of Advanced Nursing*, 32, 536-543.
- Arnetz, B.B. (1999). Staff perception of the impact of health care transformation on quality of care. *International Journal for Quality Care in Health Care*, 11, 345-351.
- Barba, B.E. (1995). The positive influence of animals: Animal-assisted therapy in acute care. *Clinical Nurse Specialist*, 9, 199-202.
- Beck, A.M., & Katcher, A.H. (1996). *Between pets and people. The importance of animal companionship*. West Lafayette, IN: Purdue University.
- Cole, K.M., & Gawlinski, A. (2000). Animal-assisted therapy: The human-animal bond. *AACN Clinical Issues*, 11, 139-149.
- Crowley-Robinson, P., & Blackshaw, J.K. (1998). Nursing home staffs' empathy for a missing therapy dog, their attitudes to animal-assisted therapy programs, and suitable dog breeds. *Anthrozoös*, 11, 101-104.
- Dougherty, E., Pierce, B., Ma, C., Panzarella, T., Rodin, G., & Zimmermann, C. (2009). Factors associated with work stress and professional satisfaction in oncology staff. *American Journal of Hospice and Palliative Medicine*, 26, 105-111. doi:10.1177/1049909108330027
- Fine, A.H., & Beck, A. (2010). Understanding our kinship with animals: Input for healthcare professionals interested in the human/animal bond. In A. Fine (Ed.), *Handbook on animal-assisted therapy* (3rd ed., pp. 3-15). San Diego, CA: Academic Press.
- Giger, J.N., & Davidhizar, R.E. (1990). Conceptual and theoretical approaches to patient care: Associate versus baccalaureate degree prepared nurses. *Journal of Advanced Nursing*, 15, 1009-1015.
- Hilton, S., Hunt, K., Emslie, C., Salinas, M., & Ziebland, S. (2008). Have men been overlooked? A comparison of young men and women's experiences of chemotherapy-induced alopecia. *Psycho-Oncology*, 17, 577-583. doi:10.1002/pon.1272
- Johnson, R.A., Meadows, R.L., Haubner, J.S., & Sevedge, K. (2003). Human-animal interaction: A complementary/alternative medical (CAM) intervention for cancer patients. *American Behavioral Scientist*, 47, 55-69. doi:10.1177/0002764203255213
- Johnson, R.A., Meadows, R.L., Haubner, J.S., & Sevedge, K. (2008). Animal-assisted activity among patients with cancer: Effects on mood, fatigue, self-perceived health, and sense of coherence. *Oncology Nursing Forum*, 35, 225-232. doi:10.1188/08.ONF.225-232
- Kaiser, L., Spence, L.J., McGavin, L., Struble, L., & Keilma, L. (2002). A dog and a "happy person" visit nursing home residents. *Western Journal of Nursing Research*, 24, 671-683. doi:10.1177/01939450232055412
- Moody, W.J., King, R., & O'Rourke, S. (2002). Attitudes of pediatric medical ward staff to a dog visitation programme. *Journal of Clinical Nursing*, 11, 537-544.
- Münstedt, K., Manthey, N., Sachsse, S., & Vahrson, H. (1997). Changes in self-concept and body image during alopecia-induced cancer chemotherapy. *Supportive Care in Cancer*, 5, 139-143.
- Müschel, I.J. (1984). Pet therapy with terminal cancer patients. *Social Casework: Journal of Contemporary Social Work*, 65, 451-458.
- Nimer, J., & Lundahl, B. (2007). Animal-assisted therapy: A meta-analysis. *Anthrozoös*, 20, 225-238. doi:10.2752/08927930X224773
- O'Conner-Von, S. (2010). Animal-assisted therapy. In K.L. Fontaine (Ed.), *Contemporary and alternative therapies in nursing* (3rd ed., pp. 207-223). Upper Saddle River, NJ: Prentice Hall.
- Odendaal, J.S.J., & Meintjes, R.A. (2003). Neurophysiological correlates of affiliative behavior between humans and dogs. *Veterinary Journal*, 165, 296-301. doi:10.1016/S1090-0233(02)00237X
- Orlandi, M., Trangeled, K., Mambrini, A., Tagliani, M., Ferrarini, A., Zanetti, L., . . . Cantore, M. (2007). Pet therapy effects on oncological day hospital patients undergoing chemotherapy treatment. *Anticancer Research*, 27, 4301-4303.
- Pet Partners. (2009). Animal-assisted activities/therapy 101. Retrieved from <http://www.petpartners.org/Page.aspx?pid=317>
- Rossetti, J., DeFabiis, S., & Belpedio, C. (2008). Behavioral health staff's perceptions of pet-assisted therapy. An exploratory study. *Journal of Psychological Nursing*, 46(9), 28-33.
- Sobo, E.J., Eng, B., & Kassity-Krich, N. (2006). Canine visitation (pet) therapy: Pilot data on decreases in child pain perception. *Journal of Holistic Nursing*, 24, 51-57. doi:10.1177/0898010105280112
- Streiner, D.L., & Norman, G.R. (2008). *Health measurement scales: A practical guide to their development and use*. New York, NY: Oxford University Press.
- Velde, B.P., Cipriani, J., & Fisher, G. (2005). Resident and therapist views of animal-assisted therapy: Implications for occupational therapy practice. *Australian Occupational Therapy Journal*, 52, 43-50. doi:10.1111/j.1440-1630.2004.00442.x
- Wells, D.L. (2009). The effects of animals on human health and well-being. *Journal of Social Issues*, 65, 523-543.
- Williams, J., Wood, C., & Cunningham-Warburton, P. (1999). A narrative study of chemotherapy-induced alopecia. *Oncology Nursing Forum*, 26, 1463-1468.
- Winkler, A., Fairnie, H., Gericevich, F., & Long, M. (1989). The impact of a resident dog on an institution for the elderly: Effects on perceptions and social interactions. *Gerontologist*, 29, 216-223.