

Acceptability and Impact of Pet Visitation on a Pediatric Cardiology Inpatient Unit

Adam S. Wu, MD
Ruta Niedra, MSW, RSW
Lisa Pendergast, BSc, RN
Brian W. McCrindle, MD, MPH, FRCPC

We evaluated the effectiveness of a pet visitation program in helping children and their families adjust to hospitalization on a pediatric cardiology ward. Thirty-one pet visits were observed and followed by interviews with patients and parents. Analysis of data suggested that pet visits relieved stress, normalized the hospital milieu, and improved patient and parent morale. The benefit received by the subjects correlated with the amount of physical contact and rapport developed with the visiting animal. *Copyright 2002, Elsevier Science (USA). All rights reserved.*

HOSPITALIZATION CAN BE a frightening experience for children and a stressful time for their families. Both child and parent must confront an unfamiliar environment sometimes associated with considerable pain, in addition to the feelings of fear, anxiety, helplessness, and powerlessness that accompany severe illness, and one in which boredom and lack of stimulation increase as the period of hospitalization lengthens. Pet visitation is one of the interventions that have been used to alleviate the stress of hospitalization.

In recent years, pet visitation programs have been started in hospitals across North America with specially trained animals. Thus far, anecdotal evidence and the critical response of patients and staff have been positive: patients have reported reduced stress and increased levels of happiness and contentment (Cole & Gawlinski, 1995).

Thus the evaluation problem was that the experience of hospitalization for children and their families can be dislocating and disorienting, and it was

identified that there was a lack of knowledge regarding the potential benefits and risks with regard to the use of pets in this setting. The purpose of this evaluation was to determine the impact of a pet visitation program on patient and parent satisfaction, physiologic measurements of stress, and perceived normalization of the hospital milieu. The setting was the pediatric cardiology inpatient unit of The Hospital for Sick Children, Toronto, Ontario, Canada.

BACKGROUND

Animal-assisted therapy is an interdisciplinary approach in which animals are used as adjuncts to other therapies. Pet visitation is its simplest and least structured form (Gammonley & Yates, 1991).

Theoretically, the establishment of a human-companion animal bond creates a relationship free of the stress and complexities of judgment and expectations. The exchange of affection between human and animal is not ambivalent, differing from human interpersonal relationships between family members and other loved ones, which are frequently charged with ambivalence and negative emotional states. Human love and comfort, if available at all, frequently must be earned through sacrifice and compromise, whereas pets offer a source of comfort that can be scheduled on demand of the owner in almost any quantity (Bardill & Hutchinson, 1997; Jorgenson, 1997). The animal accepts without condition, loving without care or

From the Division of Cardiology, Department of Paediatrics, The Hospital for Sick Children and the University of Toronto, Toronto, Ontario, Canada.

Address correspondence and reprint requests to Brian W. McCrindle, MD, MPH, FRCPC, Department of Paediatrics, The Hospital for Sick Children, 555 University Ave, Toronto, Ontario, Canada M5G 1X8. Email: brian.mccrindle@sickkids.on.ca.

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consideration, regardless of illness, deformity, or disability, offering security in that love and giving both child and parent a sense of empowerment in a sometimes overwhelming environment.

For children, pet visitation is also thought to reduce separation anxiety and offer a pleasant diversion from anxiety-provoking treatments. Interaction with the animal helps reinforce the child's sense of self-concept in the face of the adult therapist, who is perceived as an authority figure (Davis, 1985). The visiting animal has also been found to provide motivation for children in pain to comply with treatment and behavior modifications (Kale, 1992).

It is believed that the presence of the friendly animal helps to redefine the perception of the hospital environment by introducing something secure, familiar, and associated with the natural world. The friendly animal also provides relief, stimulation, and encouragement, offering a pleasurable experience to look forward to and a receptacle for the projection of feelings of fear, pain, and anxiety (Bardill & Hutchinson, 1997). The animal's presence may help facilitate social interaction, ambulation, activity, and compliance with treatment (Davis, 1985; Gammonley & Yates, 1991). The pet becomes a pillar of support and a source of strength, psychological sustenance, and optimism.

The idea of "contact comfort," in which simple physical interaction such as holding, petting, or touching produces changes in heart rate and blood pressure, may also apply to pet visitations. Researchers have proposed that petting an animal may produce a direct physiologic effect (Jorgenson, 1997).

Anecdotal evidence suggests that human-animal bonding has a positive influence on human health in both outpatient and inpatient settings. For example, pet owners with chronic illnesses have less morbidity than those without pets (Gammonley & Yates, 1991). Pet ownership has been found to reduce risk factors of heart disease and to improve social and psychological functioning, and cardiac patients who own pets have been found to survive longer than those who do not (Cole & Gawlinski, 1995; Jorgenson, 1997). Companion animals have also been found to reduce nursing home residents' need for medication (Zisselman, Rovner, Shmuely, & Ferrie, 1996).

In addition to the psychological benefits, quantitative studies have shown that, in the presence of a good human-animal bond, animal visitation to adult and geriatric patients can lower blood pressure and reduce perceived pain (Baun, Bergstrom,

Langston, & Thomas, 1984; Harris, Rinehart, & Gerstman, 1993). For example, a randomized, parallel-group control treatment trial of 58 geriatric psychiatry inpatients with chronic age-related disabilities, in which pet therapy intervention was compared with an exercise program for 1 hour a day over 5 consecutive days, found equivalent changes in blood pressure, pain perception, and Multidimensional Observation Scale for Elderly Subjects scores in both groups, as well as a non-significant tendency for subjects in the pet intervention group to have less irritable behavior (Zisselman, Rovner, Shmuely, & Ferrie, 1996). A qualitative study involving 30 adolescents hospitalized in a psychiatric unit with a therapy dog living in the unit, in which ethnographic methods of analyzing data collected through patient journals, interviews, anecdotal notes, and staff reports were used, found that the subjects identified the dog as a friendly component of the hospital milieu and served as a catalyst for interactions between individual patients, as well as between patients and staff (Bardill & Hutchinson, 1997).

The benefits of a pet visitation program are not reserved to the patients; staff and family also benefit. The pet has been found to reduce the perceived stress levels of the nursing staff, allowing them to better function in their jobs and giving them more productive time with their patients (Carmack & Fila, 1989). Volunteers have indicated that the presence of companion animals made their own experience more satisfying (Harris, Rinehart, & Gerstman, 1993; Zisselman, Rovner, Shmuely, & Ferrie, 1996).

METHODS

The Pets at Work Program

Pets at Work (PAWS) is a pet visitation program designed to provide an opportunity for therapeutic interaction for patients, parents, and staff at the pediatric cardiology ward of The Hospital for Sick Children. The dogs in the program are trained to come and sit still on command, to fetch a small thrown toy, to climb onto beds and chairs only when commanded to do so, to remain calm and relaxed in the presence of several human beings, and not to bark or bite under any circumstance. These dogs are brought to visit patients and their families privately in their rooms on the ward once a week, with a typical visit lasting 10 to 20 minutes. During the visit, both the patient and parent are free to interact creatively with the dogs in any manner they wish under the supervision of trained PAWS volunteers.

Three dogs were used in the PAWS program during the evaluation period: Blue, a 9-year-old golden retriever; Bertie, a 7-year-old Shih Tzu; and Gioia, a 7-year-old mixed breed. The dogs visit in pairs, an arrangement that allows for flexibility and variety for the patients and their parents. Large, placid dogs like Blue make wonderful cuddlers for children (Kale, 1992), whereas smaller dogs like Bertie and Gioia are ideal for initiating contact with very young children and infants who might be intimidated at first by the presence of a large, unfamiliar animal. The presence of 2 dogs also allows for both child and parent to interact with a dog simultaneously.

Patient Population

The patient population included the patients and parents who participated in the PAWS program at the cardiology inpatient ward of The Hospital for Sick Children over a period of 6 months. Patients ranged in age from young infants to teenagers. Parents were required to sign a consent form earlier in the day before the dogs were allowed into the patients' rooms, and children in protective or infectious isolation or with allergies to dogs were precluded from participation in the program.

For the evaluation, pet visits were observed, followed by an interview with both the parents and the patient. Each patient was observed during the first pet visit.

Establishing the Bond

Establishment of a healthy and effective bond is an essential first step for patients to benefit from pet companionship (Zisselman, Rovner, Shmuely, & Ferrie, 1996). The complex process of bonding is affected by many factors, including the temperaments of the child, the parents, and the animal. Other factors include the facilitation provided by the volunteers and the setting and environment of the visit. With the right combination of these factors, the establishment of a healthy bond can be remarkably swift. Visible signs of bonding and rapport were often observed within minutes of the initiation of the visit, and sometimes this process seemed to occur virtually instantaneously.

The level of physical activity during the pet visit between the child and the dog and the parent(s) and the dog, as observed by a member of the evaluation team, was recorded and classified into 1 of 6 levels. Activity was considered level 0 if there was no interaction or outright avoidance between the dog and the subject. Interactions limited to eye contact with no attempt at communication were classified as level 1. Interactions that involved an attempt at

communication, either verbally or by gesture, but without any physical contact between the animal and the subject were considered level 2. Interactions where physical contact occurred between the dog and the subject, but without any attempt at communication, were classified as level 3. Interactions that involved both verbal or nonverbal communication and simple physical contact such as petting or stroking the dog were considered level 4. When a complex physical interaction involving both communication and active play occurred between the pet and the subject, the activity was considered level 5.

The observer also subjectively evaluated the level of rapport achieved between the subject and the visiting animal and classified it into 1 of 5 levels. If the subject appeared uncomfortable with the dog throughout the course of the visit, this was considered level -1 . If the subject appeared to be comfortable with presence of the animal and/or showed transient interest in the animal, this was recorded as level 0. If the subject displayed a sustained interest in the dog over a period of time greater than half the total visit and the emotional tone of the encounter was largely neutral, this was recorded as level 1. If the interaction between the dog and the subject was warm, friendly, and relaxed, this was classified as level 2. If the interaction appeared to be loving and intimate, this was classified as level 3.

In the subsequent interview, the subject was asked to describe his or her own feelings generated by the encounter and then to choose which of 6 terms represented those feelings most closely. The terms the subject could choose from were strongly negative (level -2), unease or dislike (level -1), indifference (level 0), calm and relaxed (level 1), pleased and content (level 2), and happy and joyful (level 3).

The levels of observed activity, the observer's subjective classification of rapport, and the subject's own description of feelings generated during the encounter are summarized in Table 1.

Milieu Impact

To assess milieu impact, the patients and parents were asked to describe what they thought and felt about the hospital environment and what kind of impact the pet visit had on these opinions and feelings, if any. They were then asked to choose which of 4 levels most accurately described how the pet visit affected their perception of the hospital milieu. If they felt that the pet visit changed their perception of the hospital milieu negatively overall, they were asked to

Table 1. Measurement Scales

Level/category	Description
Activity scale	
0	No activity/avoidance
1	Eye contact/watching
2	Communication without physical contact
3	Physical contact initiated or accepted
4	Physical contact with communication
5	Active play
Rapport scale	
-1	Subject uncomfortable with dogs
0	Comfortable with dogs, transient interest
1	Sustained interest
2	Interaction is warm, friendly, and open
3	Interaction is loving and intimate
Feelings scale	
-2	Strongly negative
-1	Unease or dislike
0	Indifferent
1	Calm and relaxed
2	Pleased and content
3	Happy and joyful
Milieu impact scale	
-1	Negative impact
0	No impact
1	Distraction—described as “something new,” “a diversion,” etc.
2	Normalization—described as “more homelike,” “something familiar,” etc.
Benefit categories	
0	No benefit
1	Relief—calming, reduction of fear, stress relief, diversion, etc.
2	Motivation/facilitation—gives motivation to get better, comply with treatment; facilitates social interaction, provides topic of conversation, etc.
3	Unconditional love—makes subject feel loved, accepted, needed, and valued
4	Object of comfort/projection of feelings—gives subject sense of control, offers opportunity to release fears and worries

select level -1. If they felt that the pet visit did not change their perception of the hospital milieu, they chose level 0. If they felt that the pet visit primarily distracted them from the everyday reality of the hospital milieu, they chose level 1. If they felt that the pet visit helped normalize their perception of the hospital milieu by making it feel more like home or the outside world, they chose level 2. The milieu impact levels are also summarized in Table 1.

Measures of Satisfaction

Patient and parent satisfaction with the PAWS program was also assessed. Both parents and patients were asked whether they felt they benefited from the visitations and, if so, to identify in which way they felt they gained the most benefit. They were also asked whether their experience with the PAWS dogs changed their own feelings about pets and animals. Finally, they were asked whether they would want another

visit and whether they would recommend pet visitation to others.

Physiologic Parameters

A subset of the patients receiving pet visits had vital sign monitors attached for medical reasons. In these patients, physiologic parameters of heart rate, respiratory rate, and oxygen saturation were recorded, with beginning, end, high, and low values noted.

Data Analysis

The data were statistically analyzed with the use of the SAS statistical program (SAS Institute, Cary, NC). Kendall τ correlation coefficients were calculated between physiologic parameters and measures of activity, feelings, and rapport for both patients and parents. Correlations among the measures of activity, feelings, and rapport themselves were also calculated and frequency tables generated.

RESULTS

Patient Population

A total of 30 children, 10 girls and 20 boys, were observed during pet visitation encounters in the course of the evaluation, along with 28 mothers and 17 fathers, with 15 encounters with both parents present. The median patient age was 7 years, ranging from 3 months to 16 years. Eight of the patients were under the age of 5 years and were not interviewed. None of the children had been visited by a dog before during any previous hospital admissions. Fifteen patients were in the hospital for heart surgery, 4 for cardiac catheterization, 2 for arrhythmias and pacemaker placement, and 2 for adjustment of medications. Four patients were being treated for noncardiac conditions but were on the ward because they had significant underlying cardiac disease that required monitoring, and 3 had noncardiac conditions. Half of the participating families currently owned a pet, 20% had previous experience with a pet, and the final 30% had no experience with pets. As the PAWS program is voluntary, all of the participants were favorably disposed toward animals from the outset: 37% of patients and 46% of parents indicated that they were highly favorable.

Thirteen patients had cardiac and vital sign monitors attached for medical reasons and had their physiologic parameters recorded. Patient and family demographics are summarized in Table 2.

Physiologic Parameters

No statistically significant changes were observed in oxygen saturation levels or in heart and respiratory rates between the beginning and end of pet visits. Significant transient changes, however, were observed during the course of the pet visitation. There was a significant difference between the highest observed respiratory rate and the beginning rate: the mean increase was 17.3 breaths/min, with an SD of 13.6 breaths/min ($p = .001$). The degree of this rise in respiratory rate correlated negatively with the degree of rapport established between patients and visiting dogs ($r = -0.54$, $p = .04$). Thus the stronger the rapport that developed between the patient and the visiting dogs was, the less intense the increase in respiratory rates during periods of stimulation was.

A significant difference between the beginning and low values for both respiratory and heart rates was also observed. The difference between the beginning and low respiratory rates averaged 15.3 breaths/min, with an SD of 10.6 breaths/min ($p = .0004$), whereas the mean difference between the beginning and low heart rates was 10.3 beats/min, with an SD of 12.1 beats/min ($p = .02$). Decreases in respiratory rate were noted most frequently during periods of physical contact between patients and dogs, but there was no significant correlation between the magnitude of the falls in respiratory rate and the activities undertaken by the child with

Table 2. Demographic Data

Patient demographics	
Total patient population (n)	30
Males	20 (67%)
Females	10 (33%)
Median age (range)	7 y (3 mo to 16 y)
Patients aged < 5 y	8 (27%)
Patients on cardiac monitoring	13 (43%)
Reason for hospitalization	
Heart surgery	15 (50%)
Cardiac catheterization	4 (13%)
Arrhythmia/pacemaker	2 (7%)
Medication adjustment	2 (7%)
Noncardiac	
Underlying cardiac disease	4 (13%)
No underlying cardiac disease	3 (10%)
Family demographics	
Total parent population (sets)	30
Mothers present	28 (93%)
Fathers present	17 (57%)
Both parents present	15 (50%)
Families currently owning a pet	15 (50%)
Families with previous experience with a pet	6 (20%)
Previous disposition toward animals	
Parents (highly favorable/favorable/unfavorable)	46%/54%/0%
Patients (highly favorable/favorable/unfavorable)	37%/63%/0%

the dog. This finding may reflect the fact that no distinction was made in the nature and duration of physical contact (e.g., whether it was calm petting or stroking or boisterous play).

In conclusion, a pet visitation can have both stimulating and relaxing effects on pediatric patients, and these effects are accompanied by appropriate changes in respiratory rate and heart rate. The establishment of a strong rapport with the dogs appeared to lessen the intensity of the impact that stimulation had on heart rate. Relaxation effects seemed to dominate over stimulation effects as rapport developed between the children and the PAWS dogs.

Activity, Rapport, and Feelings

Table 3 shows the frequency distributions of activity, rapport, and feelings rankings for both patients and parents in the PAWS program in correlation with each other. Among the patients, all of the children had interactions with the dogs that included physical contact (activity levels 3, 4, and 5). Of these 30 children, 24 established rapport that was observed to be in the positive categories (levels 3 and 4) and 26 reported positive feelings generated by and during the pet visitations (levels 4 and 5). A significant correlation was observed between the presence of physical contact and both the establishment of rapport ($r = 0.35, p = .04$) and the patient's self-reported positive feelings ($r = 0.36, p = .04$). Similarly, a correlation was observed between the observed level of rapport and the degree of positive feelings reported by the patients themselves ($r = 0.71, p = .0001$). Once again, most of the children (23/30) scored in the double positive area, with both positive rapport and positive feelings. Many of the subjects commented on the enjoyment they received from touching and interacting with the dogs. One child reported, "I liked the warmth [of the dog]," and a mother, commenting about her son, remarked that "he loves it when the dogs get on the bed with him."

When the effects of activity on the establishment of rapport and the generation of positive feelings for the parents were analyzed, the correlations were even stronger than for the children ($r = 0.72$ and $p = .0001$ for correlations between activity and rapport; $r = 0.61$ and $p = .0002$ for correlations between activity and feelings). This trend could be a result of the parents having more previously established positive ideas about their feelings about animals and the activities they enjoy doing with them. Unlike the children, who were entirely distributed within or near the triple positive ranges (activity including physical contact,

Table 3. Correlations Between Activity, Rapport, and Feelings Generated by Pet Visitation for Patients and Parents

	Activity levels					
	0	1	2	3	4	5
Patient rapport levels (n = 30)*						
3				4	3	4
2				4	8	1
1				4	1	
0				1		
-1						
Parent rapport levels (n = 31)†						
3					10	5
2			1		8	
1		1	2			
0		1	3			
-1						
Patient feelings level (n = 30)‡						
3				4	4	4
2				5	8	1
1				4		
0						
-1						
-2						
Parent feelings level (n = 30)§						
3					7	3
2			1		9	2
1		2	4		1	
0			1			
-1						
-2						

	Rapport levels				
	-1	0	1	2	3
Patient feelings level (n = 30) 					
3			1	1	10
2			2	11	1
1		1	2	1	
0					
-1					
-2					
Parent feelings level (n = 30)¶					
3				2	8
2				6	6
1		3	3		1
0		1			
-1					
-2					

r, Kendall τ correlation coefficient.

*Correlation of patient activity level with rapport level: $r = 0.35, p = .04$.

†Correlation of parent activity level with rapport level: $r = 0.72, p = .0001$.

‡Correlation of patient feelings level with activity level: $r = 0.36, p = .04$.

§Correlation of parent feelings level with activity level: $r = 0.61, p = .0002$.

||Correlation of patient feelings level with rapport level: $r = 0.71, p = .0001$.

¶Correlation of parent feelings level with rapport level: $r = 0.62, p = .001$.

positive rapport, and positive self-reported feelings), the parents comprised two groups. The first and larger group, like the patients, had triple pos-

itive ranges, but a smaller second group was observed to have triple neutral ranges. These were the parents who largely chose not to interact with the pets themselves and instead essentially stood back and watched their child play with the dogs. They tended not to have physical contact with the animals, and their observed rapport and self-reported feelings were at neutral levels. As with the patients, there was a correlation between the degree of rapport and the level of positive feelings for the parents ($r = 0.62$, $p = .001$). Interestingly, many parents stated during interviews that one of the most important reasons that the pet visitations made them happy was that they were able see their children be happy with the dogs, but there was no correlation between the child's reported feelings and those of the parents.

No patient or parent scored in the negative ranges for activity, rapport, or feelings. No one who participated in the PAWS program completed a visit feeling that it had been a negative experience.

Milieu Impact

In total, 35% of the children and 48% of the parents reported that the presence of the dogs helped normalize their hospitalization experience, and 61% of the children and 40% of the parents thought that the pet visitations were a pleasant distraction from the reality of hospitalization. One child commented that the dog visit "makes you feel like you're at home"; in a similar vein, another child said, "[the dog] makes the hospital feel really homish." A third patient reported that having the dogs visit "makes you feel kind of normal." This effect was also noted by the parents: one father commented on how the visits "make the atmosphere less clinical," and one mother added that the dogs were "like something from home." Other subjects found the pets to be a pleasant diversion, with one mother telling the interviewer that the pet visit "took my mind off my worries and helped me get back into the norm." Another parent commented that the visits were "a nice change from the everyday routine." A small percentage (4% of patients and 12% of parents) indicated that the pet visitation did not change their impression of the hospital milieu. Again, no negative impact was reported by any of the patients or parents. Distraction was the primary milieu impact, particularly for the younger children.

Benefits and Satisfaction

Commenting on the dogs, one mother said "they can feel when a child is in pain, or happy, almost

as if they can read their minds." Another subject, referring to one of the dogs in the program, observed that "he has a 'love me' look that makes you feel needed." Most patients (73%) considered relief the most important benefit of the pet visits, 19% chose the giving of unconditional love, and the remaining 8% said it was the motivation to get better or to stay optimistic. None of the patients believed that they received no benefit from the pet visit. (See Table 1 for the benefit categories.)

Among the parents, 52% identified relief as the most important benefit, 16% said the most important benefit was the giving and receiving of unconditional love, 16% felt that they personally received no benefit, 12% felt that the most important benefit was the facilitation of social interaction, and 4% identified having the pet as an object for the projection of feelings as the most important benefit.

These self-reported benefits were correlated by observation. Both children and parents were seen to take pleasure in receiving unconditional love from the dogs, children were observed being motivated to look forward to another visit, and both children and parents were observed anthropomorphizing the dogs and projecting feelings, though they did not necessarily identify this process explicitly.

In large part the participants in PAWS were highly satisfied with and supportive of the program. All of them wished to be visited again in the event of a future hospitalization, 24% of patients and 12% of parents reported that the visitation had made their attitudes toward animals (generally already positive) even more positive, and none reported that the visits made their attitudes toward animals worse. Eight percent said they would recommend pet visitation for other hospitalized children, 32% would recommend it for both hospitalized adults and children who liked animals, and 60% said they would recommend a pet visit to anyone, even those who did not normally like animals. Of those interviewed, 74% believed that the PAWS program as currently run poses no significant risk to the children and 100% considered the program to be beneficial.

Limitations of the Evaluation

The sample was self-selected because of the voluntary nature of the program, so most subjects were predisposed to react favorably to a pet visitation. The children involved comprised a wide range of ages and maturity levels, and patients and parents were interviewed together: the opinions of one, therefore, may have had an

impact on those of the other. Because all of the encounters in this evaluation were first-time visits, only the initiation of human-animal bonding could be observed. There were insufficient numbers of patients who received multiple visits over long hospital stays to analyze the impact of bond strengthening over time. Although the changes in physiologic measurements were suggestive of a beneficial effect, we lacked a control group for comparison. Further investigation will be necessary to determine whether pet visitation has any important impact on physiology. We did not use any previously available instruments for assessment in this evaluation. An important limitation is that we did not assess validity or reliability of our evaluation interview, nor did we perform any formal qualitative analysis.

DISCUSSION

The benefits of animal-assisted therapy span the spectrum of age, culture, and creed. Studies have shown tangible benefits in patient populations ranging from geriatric (Gammonley & Yates, 1991; Harris, Rinehart, & Gerstman, 1993; Zisselman, Rovner, Shmuely, & Ferrie, 1996) to pediatric (Bardill & Hutchinson, 1997; Davis, 1985; Kale, 1992) in many different areas of clinical medicine, from home care (Harris, Rinehart, & Gerstman, 1993) to intensive care (Cole & Gawlinski, 1995) to psychiatry (Bardill & Hutchinson, 1997; Zisselman, Rovner, Shmuely, & Ferrie, 1996). Cultural attitudes toward certain types of animals in specific settings likely affect the process of bonding, but these factors were not observed in this project because participation in PAWS was voluntary.

The PAWS program has been enthusiastically received by both patients and parents on the cardiology ward, and tangible benefits of this program in both physiologic and psychological factors have been observed and measured. Both stimulating benefits, such as waking a child who is groggy from recently completed surgery, and relaxing benefits, such as calming a tense child waiting for a procedure, with concurrent physiologic changes, were evident. The physiologic impact of stimulation is reduced as rapport is developed. Relaxation and calming appear to become more common and important as the patient and dog grow more familiar with each other. Relaxation effects on heart and respiratory rates were consistent with the results of a study in which petting one's own dog, with whom a bond had been established, produced a

relaxation effect similar to quiet reading in adults (Baun, Bergstrom, Langston, & Thomas, 1984).

The fall in heart rate was also consistent with the fall in heart rate observed during pet visitations in geriatric populations (Harris, Rinehart, & Gerstman, 1993). However, changes in respiratory rate were not statistically significant in the geriatric study, whereas in this evaluation changes in respiratory rate were the most notable physiologic effect. This may reflect the physiologic differences between children and elderly adults or the fact that the patient population in this evaluation had a greater incidence of cardiac disease.

Establishment of rapport and generation of positive feelings were enhanced by physical contact and close proximity. Maneuvers such as bringing the child down to the pet on the floor, bringing the pet up onto the bed with the child, or letting the child walk the pet around the unit under supervision help establish the warmest relationships in the shortest time and generate the most patient and parent satisfaction. Finally, the benefits of bonding are not exclusive to the patients and parents who sign up for a visit. Anyone on the ward during the time the dogs are making their rounds, including staff, volunteers, and other parents and patients not confined to their rooms, can benefit as well.

As in the study by Bardill & Hutchinson (1997), the presence of the visiting animal in the hospital helped make the hospital milieu more homelike, friendly, safe, and protective. Distraction and stress relief were the primary benefits of this intervention, with normalization secondary, perhaps because of the brief nature of the visits, as stress relief requires the least amount of bonding. For children with long hospital stays who receive many visits, the importance of normalization may increase and the impact of diversionary aspects may gradually become less important.

The process of hospitalization can be a stressful, frightening, and confusing time for pediatric patients and their families and may negatively affect the clinical outcome. The effort to make the experience of hospitalization less daunting for children is a continuing one, and the friendly pet can be a valuable ally in this endeavor. Nurses should be aware of the dislocating and disorienting effects of hospitalization on their young patients and their families. Nurses can be strong advocates in the development of similar programs within their institutions. It is hoped that the data provided from our evaluation will assist in this endeavor. Other opportunities for normalization of the hospital milieu might be the subject of further nursing research.

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