

The Effect of Doggie Visits on Comfort and Pain Scores  
In Hospitalized Children

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Very often, children are frightened when they are hospitalized, and they experience pain and/or multiple, interrelated discomforts. The lack of holistic interventions and an instrument to document change in these discomforts are major nursing problems. Currently most pediatric assessments are limited to measures of decreased pain and do not capture the many other complex sources of discomforts and their relief. Thus, the work of nursing is under-documented and much of it is not recognized as part of the essential therapy in the children's healing. Doggie visits are one such therapy that is insufficiently documented and thus not recognized for the contributions it can make to a child's healing. The purposes of this feasibility study are to determine what effect doggie visits have on a hospitalized child's comfort and to measure the concurrent validity of the holistic measure of comfort utilized in this study with the pain instrument commonly used in this population.

Animal assisted therapy (AAT), has been defined as "a formal structured method whereby animals are used to aid in improving the well-being of a person suffering from psychological or physical illness or injury" (Moody, King, & O'Rourke, 2002). AAT has been shown to have many positive health benefits, among which include positive social interaction, increased emotional comfort, and decreased loneliness and anxiety (Kaminski, Pellino, & Wish, 2002). Another perceived benefit of animal therapy is to enhance the natural human-animal bond and an animal's ability to provide a non-judgmental relationship, unconditional affection, companionship, and a sense of purpose and importance (Moody et al., 2002). The Delta Society

has recognized the special bond between human and animal and was a major force in instituting animal therapy and visitation programs in healthcare (Delta Society, on line).

In general, the goal of AAT is to help the recipient cope with a stressful situation, but most frequently in two populations: elderly residents in long term care and young hospitalized children. Although AAT is often used with young children, very little research has been conducted to evaluate the effects that AAT or animal visitation has on children (Kaminski et al., 2002). This feasibility study adds nursing knowledge about the value of animal visitation in pediatric populations. This study also provides information about a value added holistic outcome related to the effects of doggie visits on hospitalized children. In this regard, the study demonstrates the usability and concurrent validity of Kolcaba's Comfort Daisies for this age group compared to the Wong-Baker FACES pain rating scale.

## **Literature Review**

### **Pet Visits**

As mentioned earlier, there have been few empirical studies done regarding children's response to doggie visits. In a non-experimental, cohort study, Friedman, Katcher, Thomas, Lynch, and Messent, (1983) found that children who were exposed to dogs displayed decreased levels of anxiety, decreased blood pressure, and decreased heart rate. Nagengast, Baun, Megal, and Leibowitz (1997) found in their quasi-experimental study that when a dog was present, preschoolers undergoing a physical examination showed greater reductions in systolic and mean arterial pressure, heart rate, and stress. Sobo, Eng, and Kassity-Krich, (2006) found that animal therapy decreased post-operative patients' pain level in their non-experimental study. Sobo et al., (2006) also proposed that animal therapy can distract children from pain and may stimulate comforting thoughts of companionship or home. Anecdotal data revealed that nurses and other

hospital staff viewed animal therapy positively, thought it was beneficial for patients, and stated that it made their unit a happier place (Moody et al., 2002). Similar studies have been performed with adults and similar results were found (Cole, Gawlinski, Steers, & Kotlerman, 2007).

### **Conceptual Framework**

According to Comfort Theory, comfort is a desired outcome of care that entails physical, psychospiritual, sociocultural, and environmental contexts of experience for all persons, including patients and their families, providers of care, administrators, and communities (Kolcaba, 2003). As such, holistic comfort includes the relief of discomforts such as pain, anxiety, insufficient information, lack of access to care, lack of social support, and impersonal or displeasing environments of care. In health care agencies, where providers are intentionally dedicated to meeting comfort needs of patients and loved ones, and each other, a comfort place is created.

In the pediatric setting (Kolcaba & DiMarco, 2005), nurses provide comforting interventions for children and their families. The purpose of these interventions is to increase holistic comfort in this inter-related dyad. Once hospitalized children experience increased comfort, they are strengthened to perform health seeking behaviors (HSBs). Examples of relevant HSBs are: improved healing and immunity, motivation for exercise, decreased anxiety, and courage to endure treatments and procedures. When patients engage in HSBs, their outcomes improve.

Comfort is an outcome that is essential for holistic health care; it is an explicit component of standards of care and yet, the health care team generally does not document how their interventions impact the comfort of their patients in holistic and significant ways. The positive effects on one discomfort (such as fear) impact other discomforts (such as relief of pain) as well.

Because comfort is a holistic outcome, it is consistent with the mission of nursing compared to the narrower measure of pain. In addition, comfort is a positive, value-added outcome whereas pain focuses on the negative aspect of the patients' experience.

### **Doggie Visit**

The Doggie Brigade at the research site used the following protocol for visiting children on the units. Upon arriving on the unit, the dog handler consulted with the nursing staff for information about which children specifically requested a visit, and which ones could not have a visit because they were allergic, afraid of dogs, or specified no doggie visits. All dogs were on leash, except for small dogs, which were carried. Doggie visits began when the handler knocked on the child's door and asked if he/she wanted a doggie visit. If the child accepted, the dog and the handler entered the child's room. The handler introduced the dog to the child as he brought the dog close to the child. Depending on the child's reaction, he suggested that the dog either rest with the child in bed or he performed tricks with the dog while the child watched. At minimum during the visit, the child observed the dog; at maximum, the child interacted with the dog. Some children interacted by petting the dog, one child helped the handler hold the dog's leash while the trio walked the hall, and others gave the dog treats after she performed a trick.

When a child was confined to bed, and with the child's permission, the handler lifted the dog onto the child's bed. Because of its specialized training, the dog instinctively rested peacefully near the child allowing the child to interact with the dog however he/she chose; most children decided to stroke the dog.

The doggie visit ended when the child expressed that he/she was satisfied with the visit and agreed that the dog could leave and visit the next child. If the dog was on the bed, the dog handler gave the command for the dog to get down on the floor and both would exit the room.

Doggie visits occurred twice a week on a predictable schedule, allowing the child to request a return visit. A child usually was not awakened for a doggie visit, but the handler often returned to the sleeping child's room prior to leaving the unit to see if the child was awake.

### **Specific Aims of the Study**

The aims of this feasibility study were to (a) determine the effect of dog visitation on comfort and pain scores in hospitalized children, and (b) conduct preliminary testing of the usability and validity of Kolcaba's Comfort Daisies with children ages 7 - 12.

### **Research Design and Methods**

#### **Design and Sample**

This non-experimental study was conducted on a medical unit with school age children in a large Midwestern pediatric hospital. Approval for the study was given by the Institutional Review Boards from both the hospital and the collaborating university.

Inclusion criteria were: English speaking, alert, ages 7 – 12, able to use the comfort and pain instruments. Exclusion criteria were unable or unwilling to accept a doggie visit. Forty children were recruited into the study.

#### **Instruments**

Kolcaba's Comfort Daisies and the Wong-Baker FACES pain rating scale were the two instruments used to assess the subjects' comfort and pain levels, respectively (see Figure 1). The FACES scale has six possible responses ranging from "no hurt" to "hurts worst." Higher scores indicate higher pain. The FACES pain rating scale is one of the most commonly used self-report tools for children (Chambers, Giesbrecht, Craig, Bennett, & Huntsmann, 1999); its validity and reliability have been established for children in the age ranges of our study (Fogel-Keck, Gerkenmeyer, Joyce, & Schade, 1996).

The Wong-Baker scale is used routinely at this site to assess pain in this age group. The Comfort Daisies tool was developed by Kolcaba to assess comfort in young children. It was first described in 2005 (Kolcaba & Dimarco) and posted on Kolcaba's web site at that time (on line). There are four possible responses that range from "Right now I feel very bad" to "Right now I feel very good". Higher scores indicate higher comfort. Reliability and validity of Kolcaba's Comfort Daisies have not been reported before this study. For more information about comfort, please visit [www.thecomfortline.com](http://www.thecomfortline.com).

### **Procedure**

After receiving the list of appropriate patients from the nurses, the researcher and handler agreed on the order in which the patients were to be seen. The researcher visited the child prior to the child knowing that the dog was coming to visit. Upon obtaining permission from the parent and/or child, the researcher asked each child to point to the icon on the Wong-Baker FACES pain scale that represented the amount of pain he/she was experiencing at that moment. The researcher then explained how to respond to the new comfort instrument, the Comfort Daisies. The researcher told the child to choose which icon best described his/her comfort now at that moment. Because the children were familiar with reporting pain by pointing to pictures, they could easily utilize the comfort scale. This procedure was followed before and after the doggie visit. The pain and comfort assessments occurred no longer than five minutes before or five minutes after the dog visited the child.

### **Results**

The mean age of the children was 9.3 years. Nineteen girls and twenty-one boys participated in this study. All of the participants were on the same medical unit. Information about diagnosis, medications, and ethnicity was not collected. In more than half of the visits, the

parents were present. Unusable responses were given by one child on the pain scale and by another child on the comfort scale.

Paired data t-tests showed that there were statistically significant changes (p-value less than 0.05) from pre-visit to post-visit for both pain and comfort. Table 1 shows that, following a therapeutic dog visit, pain decreased on average by about 1.3 on the 6-point FACES scale, and comfort increased by about 0.9 on the 4-point Comfort Daisies scale. When the changes on each scale were standardized according to the pre-visit standard deviations, the proportionate amount of change for the two scales was found to be virtually the same. Departures from normality in the change scores for both pain and comfort were minimal, and the sample size was large enough for the t-distribution to yield accurate results.

Table 2 summarizes the specific changes for each of the 38 children for whom there was complete pre-post data on each of the scales. Only two children showed an increase in pain and only one showed a decrease in comfort, whereas 23 of the 38 (60.5%) improved on both the pain and comfort scales following the doggie visit.

[Insert Tables 1 and 2 here.]

Figure 2 shows the data for each child's change in pain matched to his or her change in comfort, along with the linear regression line. On the scatter plot, most of the points are below zero for change in pain, indicating a reduction and most are above zero in comfort, indicating an increase. Since most children (60.5%) improved on both scales following the doggie visit, the majority of the data points are located below and to the right of the (0,0) location on the plot. There are no points in the extreme upper right or lower left of the plot, indicating that none of the children improved dramatically on one scale while getting much worse on the other. In fact, only one child went in opposite directions on the two scales, with pain getting worse by 1 unit and

comfort getting better by 1 unit. Moreover, Pearson's linear correlation coefficient for this relationship between change in pain versus change in comfort was  $r = -0.73$  ( $p = 0.000$ ), indicating a statistically significant relationship in the expected direction.

[Insert Figure 2 here.]

### **Relationship between the FACES and Comfort Daisies Scales**

Kolcaba's Comfort Daisies and Wong-Baker FACES pain rating scales are related but not the same. As pain relief is one aspect of comfort, it is anticipated that there should be a moderate negative correlation between the two measures. In fact, this was the case for the children in this study. Pearson's correlation for pre-visit comfort and pre-visit pain was found to be statistically significant ( $r = -0.84$ ,  $p = 0.000$ ). Likewise, post-visit comfort and post-visit pain were significantly correlated ( $r = -0.69$ ,  $p = 0.000$ ). As mentioned previously, the pre-visit to post-visit changes for these two scales were significantly correlated. These results support the concurrent validity of the Comfort Daisies scale.

### **Discussion**

This study was well accepted by the dog handlers, coordinators of the Doggie Brigade, the children, and the nursing staff. The study demonstrated that dog visits are beneficial for increasing comfort and decreasing pain in hospitalized children. This therapy should be used often with this population. Future studies should be conducted to further validate the use of dog visitation as a holistic intervention to reduce multiple discomforts. Some questions for future studies could include: are there differences between dog breeds? How long does comfort last after the visit?, are the effects different if the same dog visits every day for a designated length of time?.

This feasibility study provided concurrent validity for the Comfort Daisies. The children stated that they liked the comfort scale and readily responded to the daisies. Children reported higher comfort levels and lower pain levels after the therapeutic dog visit than before the visit, thus demonstrating that changes in comfort from baseline can be measured after a therapeutic intervention.

In most cases, the child's body language indicated that the child was soothed and relaxed by this interaction with the dog. These holistic positive changes were captured by the Comfort Daisies scale, whereas, they may be missed when a more narrow and negative indicator such as a measure of pain was used. According to Comfort Theory, decreased pain is only one aspect of comfort, because comfort is an umbrella term indicating the extent of a child's holistic and desirable state.

When Kolcaba's Comfort Daisies and Wong-Baker FACES pain scale were compared, it was found that they were related but not the same. As demonstrated in this study, comfort is an umbrella term which reveals more positive effects than pain relief alone. The Comfort Daisies also take into account homeostasis, social support, environmental ease, etc. The doggie visit is an example of a comfort intervention that has inter-related physical, psychospiritual, social, and environmental components.

We propose that the use of the Comfort Daisies is a holistic approach which facilitates assessment of the many discomforts of hospitalized children. This same instrument should then be used to document the response to comforting nursing interventions. We recommend that pediatric hospitals incorporate Comfort Daisies as a routine measure of the children's status. This would provide evidence for the effectiveness of nurses' comforting interventions when compared to baseline data. Moreover the use of the daisies is supported by Stephens, Barkey, and Hall

(1999) who suggested that caregivers avoid using the word “pain” with children. This is congruent with Magvary’s (2002) “turn-of-the-century” perspective for encouraging the assessment and facilitation of positive outcomes. It behooves nurses to intentionally address the comfort needs of patients and families because, theoretically, comfort facilitates healing (Kolcaba, 2003).

### **Study Limitations**

This was a feasibility study only. A key limitation was that there was no control group which did not receive visits from the Doggie Brigade. Another limitation was the lack of information collected about the subjects. More demographic information regarding diagnosis, medications administered, socioeconomic status, religion, social support, etc. should be collected in future studies to better assess the differences in discomforts of hospitalization for this population. While these differences are important to know when looking for covariates in data analysis, randomized assignments to treatment and control group would account for most of them. A third limitation is that the patients on the unit were mostly Caucasian. A more diverse sample should be collected in future studies to address cultural differences.

While the study demonstrated that the Comfort Daisies can be used by children ages 7-12, this study was not a test of Comfort Theory. To test the theory, several periods of measurements collected pre-intervention and post-intervention would demonstrate whether or not doggie visits have a cumulative effect of increasing comfort. Kolcaba, et al [on line] have demonstrated previously in their experiments that when comforting interventions are repeated over time, a linear trend for increased and sustained comfort results, compared to the same population who did not receive the comforting intervention.

To further test Comfort Theory, more associated outcomes could be collected both for Health Seeking Behaviors (healing, response to treatments or medications, increased function, etc.) and for Institutional Outcomes (length of stay, patient and family satisfaction, cost, etc.) For example, Kolcaba (2003) proposes that as patients' and families' comfort increases, satisfaction scores increase. Hospitals are routinely rated on the basis of these satisfaction scores.