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Effects of harp music therapy on canine patients in the veterinary hospital setting

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Companion animals in the veterinary hospital setting face anxiety and discomfort, similar to that of their human counterparts. Research in human patients has indicated that people have benefited in various ways from music therapy. In human neurological research, neuropeptides have been shown to act as couriers between the brain and the immune system.[1] The authors concluded that no barriers exist between thoughts and feelings on one hand and the biological healing system on the other.

Music has been shown to reduce anxiety, heart and respiration rates and blood pressure in myocardial infarction patients and cardiac surgery patients. It has also been linked to a decrease in cardiac complications in coronary care units.[2,3,4] Numerous other studies exist which document the benefits of music on humans.[2-20] Still these references represent just a fraction of the information available on the subject.

This study was conducted to evaluate the scientific foundation for the implementation of harp therapy as an adjunct treatment for the canine patient in the typical veterinary clinic setting. The research questions posed were: 1) does live harp music have an effect on the observed anxiety and restlessness levels on subjects and 2) do heart rate and respiration rates vary in the presence of live harp music?

Materials and methods

Dogs — Canine patients receiving veterinary care at a veterinary hospital were identified in three groups: hospitalized patients that are (1) hospitalized less than (<) eight hours and (2) hospitalized longer than (>) eight hours and (3) post surgical patients. Members of each group described above were the subjects of harp therapy. Every third animal observed was treated as a control.

Harp Therapy — The harp therapy practitioner was positioned near the canine patients and played for 60 minute sessions. Visual analogue scales were used to measure anxiety and restlessness over time. These parameters were measured by the harp practitioner. Physiological measures, heart rate and respiration rate, were recorded by the veterinarian or technician. Thirty-two patients were used for this study and the data was collected at fifteen intervals.

The harp therapy practitioner modified her playing after identifying the tone that evoked the desired response from the patient. Visual cues, such as altered breathing patterns, overt relaxation response, decreased or increased vocalizing, movement toward the practitioner, grooming, eating or drinking, all contributed to the assessment of the patient's preferences. Music in the appropriate mode was then improvised with constant monitoring for receptivity in the patient. Evaluation of this method is not embraced within the context of this initial study.

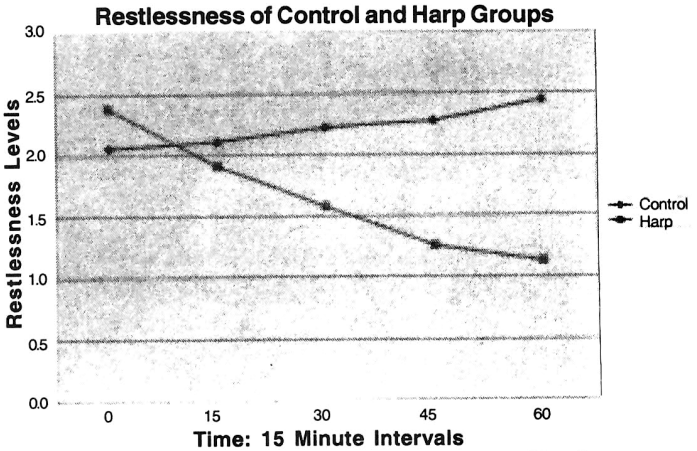
Statistical analysis

Results

Visual measures of discomfort: Restlessness, Anxiety, and Respiration

All three areas of measures declined during the one-hour measurement period in the group of animals receiving harp therapy. The harp therapy seemed to provide an accelerated return toward normal respiration, anxiety and vocalization. (See accompanying graphs of measures averaged over time.)

The **control group displayed no such decrease and, in fact, continued to**



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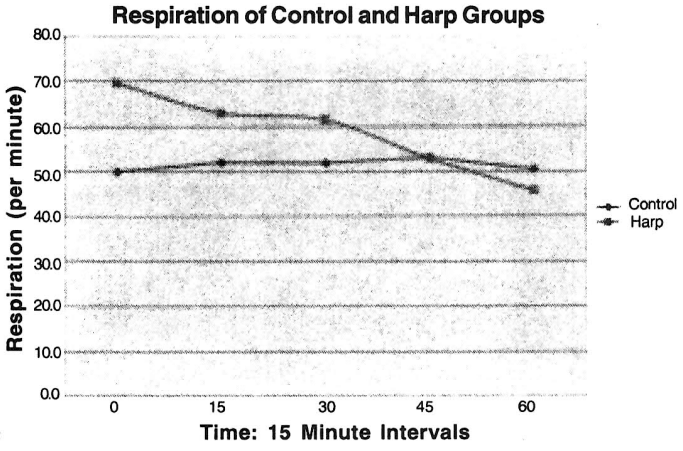
increase in all three measures of distress during the one-hour measurement period. (See accompanying graph of measures averaged over time.) We were surprised to see the continued elevation of stress levels in the control group. We would like to understand how much time these animals need to return to normal parameters. These increasing trends in the control group indicate that a longer study period could be beneficial to determine whether harp therapy might shorten effective recovery time.

Quantitative measures of discomfort: Pulse and respiration

Pulse and respiration offer less clear differentiation between the two groups. The **harp therapy group demonstrated a gradual decline in respiration rates over the one-hour period.** The **respiration rate of the control group over the same period remained almost unchanged.** (See accompanying two graphs of measures averaged over time.) This particular group of measurements appears questionable since the data shows a marked difference between the two groups before and during therapy. The harp group had a higher average respiration rate at time = 0, and showed a more marked rate of decrease over the hour than did the control group. The last fifteen minutes of both groups show a decline in respiratory rates indicating that perhaps the time period of one hour is inadequate for demonstrable measure. While the harp group began with a higher respiration rate, both the harp and control groups ended the hour with a roughly equal respiration rate.



The harp group's average pulse rate at time = 0 was also slightly higher than the control group's pulse rate. Correspondingly, the harp group's pulse rate ended slightly higher than the control group's pulse. **Both groups demonstrated a similar shallow trend in reduction of pulse rate** as is indicated by the linear regression line on the two graphs. The control group pulse rate shows more variation, while the harp group pulse rate more closely follows a linear trend.

Note:

We cannot explain why the two groups began the time intervals with different average pulse and respiration rates. We expected both the control group and the harp group to demonstrate the same or almost same initial measurements, but examination of the data indicated an unexplained difference between the two. Perhaps the small number of patients in the control group produced a wider spread within the measurement. Increasing the size of the control group might result in the measurements moving closer to each other.

Conclusion

The researchers were encouraged by the results of this pilot study.

Much of the data was collected under challenging and unpredictable clinical circumstances. We had just one harpist, but the heart rate and respiration of each patient were often recorded by different technicians and doctors. Collection of the respiration rate was often problematic due to panting. This lack of consistency may have impacted the results. Extenuating situations, such as machinery noise, noise of other animals, inconsistent activity levels in the clinic, interruptions for patient care, and the effects of post-surgery drugs made it difficult to achieve an uninterrupted therapy experience for the patient. However, the data indicates a trend toward reduction of stress as measured by the

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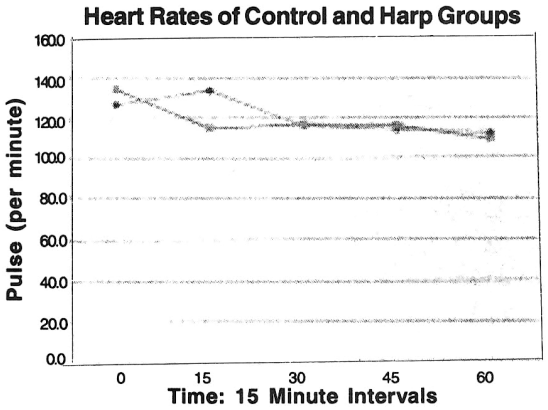

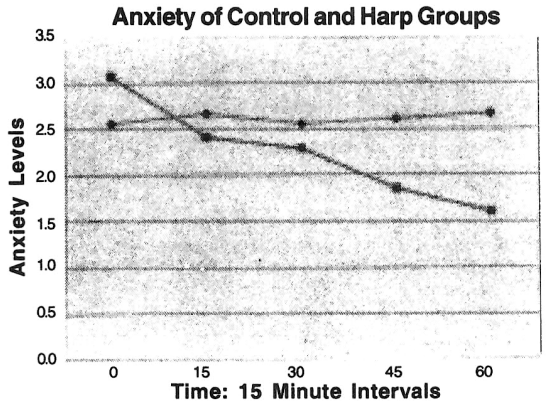

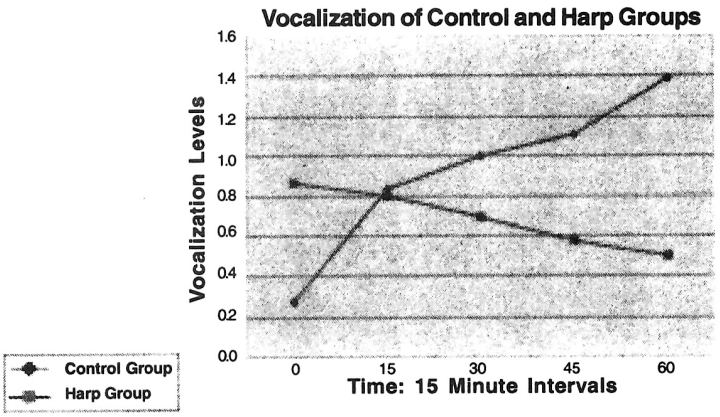

parameters studied.

Further studies of interest within the canine population would include a follow-up on the therapy session to assess the sustained effect of the experience. Also, it was noted that the larger breed dogs expressed greater interest than the smaller breeds. Could there be a difference in the application of harp therapy from breed to breed?

The practice of harp therapy itself is undergoing a period of evolution. Resonant tone theory, which involves locating the patient's resonant tone and improvising it into the music, is currently under investigation as a medical approach. The results of a deeper understanding of this method in human therapy will be interesting in its application to companion animals.

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