Dogs Can't Cure Cancer

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What a new study found about the effects of dog visitations on cancer patients.

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Dog are amazing! They are very good, for example, at detecting human cancers by smell. (See here for a review.)

But can dogs cure cancer?

This possibility was suggested by the title of a recent Psychology Today post by the eminent psychologist Stanley Coren (“Can Therapy Dogs Help Cure Cancer?”). The post described a study published in the Journal of Community and Supportive Oncology by researchers at the Beth Israel Cancer Center. The investigators examined the effects of therapy dog visitations on individuals receiving chemotherapy or radiation treatments. Most of them had Stage 4 cancers of the head and neck.

I have enormous respect for Dr. Coren. He is professor emeritus in the Psychology Department at the University of British Columbia, and he has made many contributions to our understanding of human behavior, including our relationships with other species. I am a fan of his Psychology Today blog and his books. He is a terrific researcher, a brilliant writer, an entertaining speaker, and a genuinely nice person. But I am careful about even implied claims that animal-assisted therapy helps cure cancer. My concerns about the study and the results are discussed below.

Did the Research Show Dogs Can Cure Cancer?

No. In fact, the study had nothing to do with curing cancer. The investigators were interested in whether interacting with therapy dogs would enhance the quality of life of cancer patients. They were not trying to prove that animal-assisted therapy can either cure cancer or increase cancer survival rates.

Was the Study Methodologically Sound?

The study involved considerable effort on the part of the researchers and the dog handlers. Unanticipated logistical problems meant that the research took many months to complete. But despite their efforts, several problems, in my view, compromised the validity of the findings.

One hundred cancer patients were asked to take part in the study. Forty-two of them (presumably dog lovers) agreed to the dog visitations, and 37 of these individuals actually interacted with therapy dogs prior to their chemotherapy or radiation sessions. After three weeks and seven weeks of treatments preceded by dog visitations, the subjects completed the Functional Assessment of Cancer Therapy scale (FACT-G). This is a standardized survey that measures four dimensions of well-being in individuals undergoing chemo or radiation therapy—
physical, emotional, social, and functional. The subjects also completed a scale devised by the researchers to measure how the participants felt about the dog visitation program.

There were a couple of problems with the research design. First, in stat-speak, it was “underpowered.” This means there were too few subjects in some of the groups. While 40 subjects took the initial survey, the third week assessment included 24 subjects, and by the seventh week, the sample size had dropped to 16.

But a bigger problem is that there was no control group. The lack of a comparison group of patients who did not interact with dogs means that we cannot tell if changes in well-being were due to animal-assisted therapy or a host of other factors. These might include any progressions or remissions of their disease states unrelated to the animal-assisted visitations.

Note that a similar study published in 2008 did include appropriate control groups. In it, Dr. Rebecca Johnson and her colleagues at the University of Missouri’s Research Center for Human-Animal Interaction found that interacting with dogs had no measureable impact on the psychological status of patients undergoing radiation therapy when compared to cancer patients who read a magazine or talked to another person.

**The Results of the Beth Israel Study**

The graph below shows changes in the four aspects of well-being measured by the FACT-G after three weeks and after seven weeks of dog visitations.
**Social Well-being (the blue line)** – This trend line is essentially flat. According to a table in the published research report, the patients technically showed “significantly” improved social well-being after three and seven weeks of dog visitations. However, as you can see from the graph, any impact of the dog visits was so small as to be inconsequential. For example, the seven week “effect size” was only .09 on a scale in which .20 is considered “small,” .50 is considered “medium” and .80 is considered “large.”

**Physical Well-being (“PWB” - the red line)** – The red line is clear: the patients felt worse over the course of the dog visits. Given that the patients were very sick to begin with, this is not surprising. But the decline in their health certainly does not support the idea that animal-assisted therapy cures cancer. (Note: In some places, the journal article refers to “PWB” as “physical well-being” but in other places it says that “PWB” means “personal well-being.” According to FACT-G terminology “physical well-being” is correct.)

**Emotional Well-being (the green line)** – Over the course of the study, the emotional well-being scores rose very slightly—only one and a half points on a 24 point scale. This increase was so small it was not “statistically significant.” However, the authors then conducted another analysis. This time, however, they changed the emotional well-being scores because of the drop in the patients’ physical well-being scores. After these adjustments, the improvement in the emotional well-being scores became “statistically significant.” I am uncomfortable with this type of statistical manipulation. But even if we accept the logic behind recalculating the scores, any interpretation is compromised by the lack of a control group. In short, we cannot conclude that dog visitations per se were responsible for any ostensible improvements in the emotional well-being of the patients.

**Functional Well-being (the purple line)** – Like physical well-being, the functional well-being scores worsened over the seven weeks of dog visits. The “effect size” of the decline in the functional well-being of the patients was in the “large” category (.74). But just as we cannot conclude that interacting with the dogs improved the patient’s emotional well-being, neither can we conclude that the dog visitations caused their functional well-being to decline.

**Now The Good News**

Fortunately, there is some good news. The researchers also gave the subjects a second set of scales to measure how satisfied they were with the dog visits. For the most part, the participants were highly satisfied with the program. They were glad they had participated in the research, and they enjoyed petting and playing with the dogs before their cancer treatments. The patients generally felt that the dogs had improved their psychological symptoms, though they were less convinced that the animal-assisted visitations improved their physical condition.

**Conclusions: Do Therapy Dogs Cure Cancer and Improve the Well-Being of Cancer Patients?**

There was not a shred of evidence in the study to suggest that therapy animals might cure cancer. Indeed, the physical health of the patients appeared to decline during the weeks of animal-assisted therapy. The assessment instrument indicated that the effects of dog therapy
on the patients' physical, social, emotional, and functional well-being were, for the most part, negligible. In my view, the importance of this research is that it essentially replicated the University of Missouri study which found that animal-assisted therapy had little if any measurable impact on the psychological condition of cancer patients undergoing radiation therapy.

I like dogs, and I would be ecstatic if scientific studies showed dogs can cure cancer.

But so far, they haven’t.