Response to “Assessing the Impact of Acupuncture on Pain, Nausea, Anxiety, and Coping in Women Undergoing a Mastectomy”

We read with interest the pilot randomized, controlled trial by Quinlan-Woodward et al. (2016) published in Oncology Nursing Forum about the impact of acupuncture on pain, nausea, anxiety, and coping in women undergoing a mastectomy. We think that there are both theoretical and methodologic issues that do not allow the authors to conclude that their study demonstrated that acupuncture delivered postoperatively in the hospital after mastectomy can reduce the severity of symptoms experienced and increase the patient’s ability to cope with her symptoms.

Briefly, from the theoretical point of view, there are issues with the study design: no sham acupuncture group, extremely small sample size, high attrition rate (33.33% in the acupuncture group versus 6.66% in the control group), and data analysis (use of parametric methods, such as student t test, without confirming the necessary assumptions) (Strasak, Zaman, Pfeiffer, Göbel, & Ulmer, 2007). We do not want to extend our dissertation in this point, but it is relevant regarding the authors’ emphatic development of conclusions from this trial.

We want to discuss the analysis of the data presented by the authors in the manuscript. Although we do not share their election of statistical methods, we would accept them and would like to partially re-analyze some of the data presented with parametric methods just for pedagogic purposes. A complete re-analysis of the presented data with nonparametric methods would require access to the raw data, which was not provided, but some estimates could be done with the provided data.

First, although not affecting the overall information reported in Table 1 from the Quinlan-Woodward et al. (2016) article, the p value shown for marital status is inaccurate; recalculation shows a p value of 0.548 versus 0.059 reported by authors. However, the recalculation is still inaccurate because the use of chi-square test when the expected values are less than 5 has been widely questioned. If an expected value is less than 5 (Strasak et al., 2007), authors should use an alternative, such as an exact test.

Second, the authors’ conclusions are substantiated in the comparisons of pre- and postinterventions in both groups. Basically, the majority of pre- and postintervention comparisons in the acupuncture group yielded significant changes, and pre- and postintervention comparisons in the control group were all non-significant (p > 0.05). This result extends to all the areas studied by the authors (pain, nausea, anxiety, and coping) and to the two visits. These results lead the authors to conclude that their pilot study supports reductions in pain, nausea, and anxiety, as well as an increase in ability to cope, and that they found that it is feasible to deliver acupuncture postoperatively to women undergoing surgery for breast cancer who have a short length of hospital stay. We think that authors have not correctly addressed the analysis of their data because of the following reasons:

- There are no differences in the baseline characteristics of the two groups (preintervention measurements) with the sole exception of coping and nausea at visit 1. For coping at visit 1, the value was significantly higher in the control group; for nausea, it was higher in the acupuncture group. It is difficult to interpret evolution of the numeric rating scale between groups when both groups start from different points and with such a small sample, but, for the rest of the studied areas and the whole visit 2, the baseline was the same. This point was not discussed by the authors.
- There are no statistically significant differences in the numeric rating scales during postintervention between the studied groups (p > 0.05 in all cases) (see Table 1) in visit 1 or 2. This extends to all the studied areas. Using the interpretation of the p value that the authors have applied to their own article, this indicates that patients with acupuncture treatment and patients without acupuncture treatment reached a similar point in the numeric rating scales across all the studied areas after the acupuncture intervention and in the control group. It indicates that, with or without acupuncture, the result was the same, which

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