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Susan H. Franzblau, Sonia Echevarria, Michelle Smith and Thomas E. Van Cantfort

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# A Preliminary Investigation of the Effects of Giving Testimony and Learning Yogic Breathing Techniques on Battered Women's Feelings of Depression

Susan H. Franzblau

Sonia Echevarria

Michelle Smith

Thomas E. Van Cantfort

*Fayetteville State University*

Researchers have shown that mood and sense of control over one's life are significantly affected by testimony and other forms of disclosure and that learning to control breathing has positive effects on mood and anxiety. This preliminary experiment tests whether African American and European American abused women who give testimony about their experiences of intimate partner violence and learn how to use yogic breathing techniques have reduced feelings of depression. Results indicate that learning yogic breathing techniques alone and combined with giving testimony significantly reduces feelings of depression. Recasting women as authorities on domestic violence and teaching them how to calm their minds by focusing on yogic breathing may be simple and effective ways to help women take control over their bodies and lives.

**Keywords:** *IPV; abused women; domestic violence; depression; disclosure; testimony; yoga; yogic breathing; pranayama*

Five million acts of intimate partner violence (IPV) are committed against women every year (National Center for Injury Prevention and Control [NCIPC], 2003). Women see mental health workers more than 18 million times a year, much of which represents multiple visits for each woman at a cost of more than \$6 billion (NCIPC, 2003). Costs to each abused woman, however, go beyond money. In this article, we propose alternative modalities of healing for abused women, which we hypothesize will help to decrease

these feelings of depression. The interventions we explore are (a) having women give testimony about their abuse and (b) having women learn to control their breathing by using yogic breathing techniques.

One way to lend support to abused women would be to give them the opportunity to tell their stories. For those whose lives are filled with trauma, talking about negative traumatic events can positively affect linguistic, emotional, and cognitive processes (Niederhoffer & Pennebaker, 2002). Researchers investigating the impact of testimony on abused African American women's lives have suggested that telling one's story is empowering because it allows one to speak in one's own voice, granting one authority and credibility (Taylor, 2005). Testifying to abuse could allow women to move from depression and hopelessness to an awareness of possibilities (Cowling, 2005).

Researchers have found that using the simple and deliberate act of breathing in place of ruminative thinking allows the person to substitute positive thoughts for negative ones (Segal, Williams, & Teasdale, 2002). Although disclosure involves a cognitive-linguistic process (Niederhoffer & Pennebaker, 2002), learning how to control one's breath may be a cognitive-physiological process, whose positive effects on an abused woman's emotional health may be similar to disclosure. Weber (1996), in a study of patients clinically diagnosed with major depression, bipolar disorder, and schizophrenia, found significant reductions in anxiety after three sessions per week of relaxation techniques involving teaching participants that deepening their breath could steady them. In a longitudinal study that applied relaxation techniques to reduce generalized anxiety disorder, Borkovec and Costello (1993) found that slow-paced meditation with diaphragm breathing had a major impact on Beck Depression Inventory-II (BDI-II) depression scores and Hamilton Anxiety Rating Scale Scores. Kim and Kim (2005) examined the effects of relaxation breathing exercises on anxiety and depression in stem cell transplant patients. Compared to the control group, the relaxation breathing exercise group's depression, as measured by the BDI-II, decreased significantly.

*Pranayama* (breath control) and other mindful techniques, according to researchers Segal et al. (2002), enable people to identify negative thoughts as they arise and distance themselves from them to evaluate the accuracy of

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their content. When this happens, people often make a more positive general shift in their perceptions and feelings.

According to the literature discussed above, giving testimony about abuse and learning how to control breathing have similar effects. Testimony brings awareness of and reflection on the violence in abused women's lives, moving them toward self-empowerment. Breathing techniques allow people to take control over their body and mind. Both reduce anxiety and depression, which enables abused women to move from object of violence to agent of their own healing. Both processes involve distancing, reflection, and insight. Separately, each should reduce depression. Uniting the two healing techniques should be synergistic and highly beneficial to women who have experienced IPV in their lives.

## Method

The following preliminary study investigated the short-term effects of having battered women give testimony about their abuse and/or the effects of yogic breathing on depression, as measured by the BDI-II (Beck, Steer, & Brown, 1996). A related study of the influence of testimony and yogic breathing techniques on self-efficacy has been reported elsewhere (Franzblau, Smith, Echevarria, & Van Cantfort, 2006). A 2 (race)  $\times$  4 (treatment conditions) pre- and posttest design was employed to address the following questions: Do the races respond differently as measured by the BDI-II to yogic breathing and/or testimony intervention? And does the intervention (yogic breathing, testimony, and both) have an effect on depression as measured by BDI-II.

A total of 40 women between the ages of 18 and 45, who self-identified as either African American ( $n = 20$ ) or European American ( $n = 20$ ) and self-identified as verbally, emotionally, physically, and/or sexually abused by a man with whom they have been intimate within the past 2 years, were invited to participate. The participants were found through advertisements in the local newspaper, placement of flyers on the inside of bathroom stall doors in the court house, at the local state university and community college, and in various bars and other locations. Within race, participants were randomly assigned to one of four conditions: testimony, yogic breathing, testimony and yogic breathing, and control. For the testimony condition, participants were matched with a trained listener of the same race. Each participant received \$100 (one third on the 1st day, one third on the 3rd day, and one third on the last day). All of the women participated for all 4 days, and not a single participant withdrew from this study.

The experiment took 4 consecutive days to complete. Each of the conditions lasted 45 minutes. In the combined condition, the participants gave testimony for 45 minutes and then learned yogic breathing techniques for 45 minutes. Testimonies were taken in a small room in a discrete location on the third floor of the campus library; yogic breathing was taught in a yoga studio close to the university. The testimony sessions were recorded on a Marantz PMD-670 compact flash recorder with a 2 GB CompactFlash card for later transcription and content analyses of the narratives. The women signed informed consents before beginning the study. If at any time during the 4 days the women had requested legal or psychological help, they were to be informed about resources and were to be provided a paper with resource information, including legal, psychological, and shelter information. None of the participants requested legal, psychological, or shelter information.

Women research assistants were matched by race with the participants' race and trained to take the participants' testimonies. All testimonies were taped for later transcription, coding, and qualitative analysis. A master's-level female student was trained to teach the yogic breathing protocol (the yogic breathing protocol is available at our Web site, <http://www.uncfsu.edu/psychology/Web&Pages/YBIPV.htm>) by the primary investigator, who is a registered yoga teacher.

On the first day, the assistant administered the BDI-II, along with a demographic page, to the participant. The second and third days for the yogic breathing condition and the testimony condition consisted of either teaching the participant to breath for 45 minutes each day or taking the participant's testimony for 45 minutes each day, for a total of 1.5 hours of intervention. For the testimony and yogic breathing condition, there were two 45-min sessions per day, one for yogic breathing and one for testifying, for 2 days, for a total of 3 hours of intervention. For this study, the intervention period was relatively short, 1.5 hours for the yogic breathing and testimony conditions and 3 hours for the testimony and yogic breathing condition, compared to those of other comparable studies, in which intervention could be anywhere from 6 to 8 weeks. (cf. Kabat-Zinn, Lipworth, Burney, & Sellers, 1986). We do not think that the extra 1.5 hours in the testimony and yogic breathing condition is a confound; however, this is an empirical question that can be tested in further studies. On the fourth consecutive day, the assistant administered the BDI-II to the participant. After the BDI-II was completed, the assistant debriefed the participant. For the combined condition, the participant gave her testimony and was then taken to a yoga studio, where all the yogic breathing exercises were conducted. Each participant in the control group met with the assistant on the 1st and 4th days, during

which time she filled out the BDI-II. At the end of the study, the controls were offered the opportunity to testify about their experience with spousal abuse or to be trained in yogic breathing. However, none of the participants in the control group chose to participate in either condition.

For the yogic breathing condition, the women were trained to work with extensions and reductions of inhalations and exhalations, to place the breath, to understand the movement of the diaphragm, to learn to lift and open the chest to free the breath in the upper lungs, to use breath with sound as an enhanced relaxation technique, and, finally, to use the breath to recuperate by maintaining a state of focused stillness in body, senses, and mind. Simple yoga poses were incorporated into *pranayama* for the purpose of enhancing the yogic breathing techniques (Rosen, 2002; the protocol is available at our Web site, <http://www.uncfsu.edu/psychology/Web&Pages/YBIPV.htm>).

## Results

We tested whether the race of participant, the military status of the abuser, the participant's level of education, and the number of children younger than 5 in the abused woman's custody would affect scores on the BDI-II. These hypotheses were not supported. There were no statistically significant differences among race, education of participants, military status of the abuser, or number of children younger than 5 in the abused women's custody on BDI-II score.

We tested whether a given intervention significantly lower scores on the BDI-II. The BDI-II (Beck et al., 1996) measured the level of depression for each participant both before and after treatment conditions; the measurements occurred on the 1st and 4th days of the experiment. BDI-II clinical scores range from *minimal* to *severe*: 0 to 13 = *minimal*, 14 to 19 = *mild*, 20 to 28 = *moderate*, and 29 to 63 = *severe*. Table 1 provides the pre and post means and standard deviations, along with the highest scores and the lowest scores and the mean difference scores for each treatment condition. The research literature has clearly indicated (see introduction) that breathing exercise by itself and testimony by itself should lower levels of depression in individuals suffering from depression. If there is a synergistic effect between yogic breathing and testimony, then the greatest decrease in depression should be in the testimony and yogic breathing condition. As expected, a *t* test for correlated samples found a statistically significant decrease in the BDI-II scores from the pretest to the posttest for all treatment conditions,

**Table 1**  
**Means, Standard Deviations, Lowest Scores, and Highest**  
**Scores on the Pre and Post Beck Depression Inventory II**  
**by Treatment Conditions**

| Statistics                       | Pretest Beck Depression Inventory II |                 |         |         | Posttest Beck Depression Inventory II |                 |        |         |
|----------------------------------|--------------------------------------|-----------------|---------|---------|---------------------------------------|-----------------|--------|---------|
|                                  | Testimony                            | Yogic<br>Breath | T/BT    | Control | Testimony                             | Yogic<br>Breath | T/BT   | Control |
| <i>M</i>                         | 31.2                                 | 13.4            | 30.7    | 21.6    | 21.7                                  | 6.0             | 17.2   | 20.5    |
| <i>SD</i>                        | 6.795                                | 8.669           | 10.853  | 11.740  | 12.000                                | 5.207           | 10.799 | 12.998  |
| Lowest score                     | 20                                   | 2               | 4       | 7       | 5                                     | 0               | 1      | 5       |
| Highest score                    | 44                                   | 28              | 38      | 43      | 41                                    | 14              | 37     | 42      |
| <i>M</i> difference <sup>a</sup> | 9.5                                  | 7.4             | 13.5    | 1.1     |                                       |                 |        |         |
| <i>df</i>                        | 9                                    | 9               | 9       | 9       |                                       |                 |        |         |
| <i>t</i> test                    | 3.523**                              | 3.258**         | 3.963** | 0.785   |                                       |                 |        |         |

Note: T/BT = testimony/breathing testimony.

a. Pretest–posttest.

\*\* $p \leq .005$ , one-tailed ( $t = 3.250$ ,  $p = .005$ ).

except the controls (see Table 1). In the testimony condition and testimony and yogic breathing condition, the women's pretest BDI-II scores were severe. The posttest BDI-II scores for testimony changed from severe to moderate and for testimony and yogic breathing changed from severe to mild. For the yogic breathing condition, the pretest BDI-II scores were mild, with posttest scores improving to minimal. The control group scored in the moderate range in both pretest and posttest conditions. Note that the largest decrease in the depression scores occurred in the testimony and yogic breathing condition.

To test whether one intervention was better than another, a one-way analysis of covariance, with pretest as the covariate, revealed a significant effect of intervention ( $F = 3.164$ ,  $df = 3, 35$ ,  $p = .037$ ). Intervention accounted for 21% of the variability in the post BDI-II scores. This finding indicates that, overall, treatment condition had a significant effect on the posttest BDI-II scores.

There is no a priori reason to think that yogic breathing by itself would be better than testimony by itself, but the synergy of the two treatment conditions should have the greatest effect. As expected, the post hoc comparison between the testimony and yogic breathing condition and control group was significant ( $M$  difference = 10.224,  $p = .009$ ). What is surprising is that the post hoc pairwise comparison revealed a significant difference between

the yogic breathing condition and the control group ( $M$  difference = 8.261,  $p = .031$ ) but not between the testimony condition and the control group ( $M$  difference = 6.104,  $p = .111$ ). There were no other statistically significant differences between paired comparisons.

## Conclusion

### Summary

After giving testimony, women's posttest BDI-II scores were significantly different from their pretest BDI-II scores. Second, learning yogic breathing significantly affected the women's depression. The findings on the impact of testimony on depression corroborate the work of Pennebaker (2000) and Taylor (2005). Third, the findings on the impact of learning yogic breathing techniques confirm the growing number of studies on the positive impact of yogic breathing (Kabat-Zinn et al., 1986; Kim & Kim, 2005; Segal et al., 2002). As we have previously stated, although testimony operates through a cognitive-linguistic process (Niederhoffer & Pennebaker, 2002), yogic breathing might very well operate through a cognitive-physiological process. Theoretically, reflection on the mind and body is mediated through attention to the breath, which, in turn, might inhibit attention to negative ruminations.

The most powerful influence on depression scores resulted from the testimony and yogic breathing condition, supporting the hypothesis that combining cognitive-linguistic techniques with cognitive-physiological techniques is synergistic, as the post hoc pairwise comparison reveals. IPV has multiplicative effects on women's lives (Sutherland, Bybee, & Sullivan, 2002). Therefore, combining a number of stress-reducing, empowering integrative techniques that give women a voice, displace negative ruminations, and create the conditions for calm reflection might provide the very tools women could use to begin leaving their abusive relationships and take control over their bodies and lives.

### Limitations

Despite the fact that this experiment was innovative and challenging, particularly to traditional therapeutic techniques, there were several limitations. A total of 40 African American and European American women participated in this experiment, with 10 women in each cell. To strengthen these findings, a larger and more diverse sample is needed. We suggest replicating this study by increasing the sample size for each group to 15 and

including Latina and Native American women. This would strengthen the generalizability of the experiment and strengthen our ability to do chi-square analyses on nominal data. Furthermore, although the experiment revealed powerful short-term effects of yogic breathing and testimony on mood, we have no way of knowing if these effects were beneficial in the long term. Clarification of the long-term benefits of giving testimony and learning to control breathing would require a repeated measures design over an extended period (weeks or months). Finally, it is possible that the reduction in BDI-II scores was a social desirability confound. Extending treatment over a longer period might mitigate this confound.

## Discussion

Women's experiences of abuse require self-validation and validation from others (Sutherland et al., 2002; Taylor, 2005; West, 2004), so that women can begin their own healing and empowering process. With cuts in funding for programs to stop violence against women, we need to take matters into our own hands. What better way to give women the power to stop the violence than to enable women to speak in their own voice and have those voices heard loud and clear. Finally, "Having an objectified body consciousness is believed to place women at greater risk for mental health problems such as depression" (Muehlenkamp, Swanson, & Brausch, 2005, p. 24). Learning how to calm mind and body by focusing on yogic breathing is an effective way to help women pay attention to, listen to, and take control over their bodies and can serve as a template for controlling their lives.

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**Susan H. Franzblau**, PhD, is a full professor of psychology at Fayetteville State University. She is interested in sex and gender issues. Her research on the effects of yogic breathing stem from her interest in yoga and interventions that empower women who are abused. She is a registered yoga teacher and owns Om Yoga Studio in downtown Fayetteville, North Carolina.

**Sonia Echevarria**, MA, originally from Puerto Rico, was a research assistant and master's of counseling student in the Department of Psychology at Fayetteville State University during the time of this research. She is interested in the psychological effects for women who live in misogynistic cultures.

**Michelle Smith**, MA, was a research assistant and master's of counseling student in the Department of Psychology at Fayetteville State University during the time of this research. She is interested in health disparities among African Americans.

**Thomas E. Van Cantfort**, PhD, is a professor of psychology at Fayetteville State University. His background is in comparative and physiological psychology. He has worked with Allen and Beatrix Gardner on the cross-fostering study teaching sign language to chimpanzees. His other area of interest has been in human mating strategies.