Test-Anxiety Program and Test Gains with Nursing Classes

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Abstract

Nursing programs can be highly stressful, and nursing students have been found to be more test-anxious than other students. The present investigation examines a practical program to reduce test-anxiety impairment and improve academic performance for a significant number of highly anxious nursing students.

Incoming nursing students were screened using the Westside Test Anxiety scale, and half (42 of 84) were identified as having high- or moderately-high anxiety and were randomly assigned to an "active control" Treatment or an information Control group. Students in both groups were introduced to their material and encouraged to review it. Students took the comprehensive Evolve/HESI exit exam in the early spring.

The Treatment group showed a significant 12+ percentile gain over the Control group on the HESI ($p<.05$), and a 9 percentile gain over the Controls on their spring GPAs

The active control treatment protocol used here is seen to provide a cost-effective intervention to improve test performance. Circumstances permitting, the authors recommend that nursing programs include provisions for highly anxious students.

Approximately 16%—20% of students are found to have high test anxiety, according to various studies (cf. Ergene, 2003), and a Canadian survey finds that adolescents worry about tests and schoolwork more than about any other aspect of their lives (McGuire et al. 1987).

Nursing students are found to be even more test anxious than are students in other fields. Nursing students face the same pressures as other students, and in addition many are also under the impression that an inadvertent mistake might seriously harm a patient as well jeopardize their own careers. Surveys of some 600 nursing students in two separate colleges identified just over 35% with high test anxiety (Driscoll et al., 2009; Wheeler, 2010).

Highly test-anxious students are found to score about 12 percentile points below their low anxiety counterparts (Cassady & Johnson, 2002; Hembree, 1988; McDonald, 2001), and the anxiety itself is thought to be a major contributing factor (cf. Lee, 1999).

The current study is to assess the feasibility and benefits of a broadly implemented test-anxiety treatment program.

Method

Screening and assignment

The incoming class of junior nursing students from a highly selective state university was screened for test anxiety at the beginning of the program. The Westside Test Anxiety Scale (Driscoll, 2007) was used as the principal measure of anxiety because it is primarily a measure of performance impairment (rather than somatic symptoms); because anxiety changes as measured by the scale have been found to correlate with changes in test performance; and because recent population sample frequencies were readily available. The Westside scale has 10 items, each rated 1–5 and averaged. A score of 3.5 or above is considered high anxiety, while 3.0—3.4 indicates moderately-high anxiety.

Of the 84 students screened, 21 students (25%) indicated high anxiety and 6 of these were at the extreme range (4.0—5.0). Another 21 students (25%) had moderately-high anxiety (3.0—3.4) and were included in the study, resulting in a sample of 42 test-anxious students. Thus, of these incoming students, fully half reported some amount of test-anxiety impairment. These students were randomly assigned to Treatment or Control groups.

The anxiety means for Treatment and Control groups were 3.55 and 3.49, respectively, with a SD= .41 .

Intervention

The Treatment students received an active control cognitive-behavioral Intervention, while the Control students received a test anxiety reduction information packet.

Active control Training. The active control anxiety-reduction treatment protocol was used because it appears to produce both reliable anxiety reduction and test performance benefits (Driscoll et al., 2005; Driscoll, 2006; Miller et al., 2006; Miller et al., 2007); and because it is available in a recorded version on CD which can be easily administered to larger groups of students (Driscoll, 2003).

The active control treatment is a modified cognitive desensitization, accelerated by stronger components. Stretch–tense–deep breath–release relax–and suggestion (STARS) sequences are used to curtail anxiety, rather than simple suggestions to relax, and imagined interest in the learning and testing scenes replaces pleasant images.

The protocol has one imagine an activity that one finds especially interesting, to re-experience the sense of interest. One then imagines a series of eight learning, review, and testing scenes, and by suggestion, imagines being interested in them. Interest in school subjects contributes strongly to school performance, so an interested attitude is a plausible antidote to a fearful attitude.

Additional STARS sequences are included between scenes, to curb any anxiety created and to reinstate the calmness and prepare one for the next scenes. The vivid experience of release and safety at the conclusion of a stressful scene conditions one to perceive the situation as safe and no longer frightening. The procedure thus reframes the threatening situation as an interesting one, as in cognitive therapies, and then follows through with two additional steps: Students experience themselves being interested, and the sequence finishes with a sense of safety.

The active control protocol used here expounds on early here findings that vigorous physical activity, adaptive attitudes, and exposure can all contribute to anxiety reduction benefits (Driscoll, 1976). While various anxious students may do well with one or two intervention components (Hiebert, 2000), the composite approach used here addresses both the cognitive and emotional aspects of anxiety and should be expected to benefit a broader range of individuals (Sapp, 1996).

The active control protocol was presented to the 22 treatment students as a group, taking a single hour for a faculty member and an assistant. The instructor explained the rationale and presented segments of the training so that students experienced each of the features. The job of the assistant is to provide moral

support and maintain order, and the presence of a second staff member is highly recommended with groups of six or more students.

Each student was given the protocol on a 31 minute training CD, and instructed to review the training at least twice. Afterward, 16 students reported using the CD just once, 4 reported using it twice, and reports were not available for the remaining 2 students. Thus, intervention for most of these students consisted of the 50 minute orientation and a single CD training review.

Information comparison control. The Controls received a treatment package consisting of test-anxiety reduction information from the popular University of Illinois test anxiety management website (1996/2004). Students were asked to review it twice.

Anxiety-reduction information and advice are often presented on the expectation that they will benefit the students. While some suggestions may be beneficial, we consider the information group to be only marginally effective and use it here as a minimal treatment placebo control group.

The initial interventions were in October, 2009, about 6 weeks into the nursing program. Faculty urged students to review the material, either the training CD or the anxiety reduction suggestions in the information package.

The standardized HESI test was taken by all students in March, 2010.

Results

HESI and GPA.

The Intervention group GPA was found to be .06 of a letter grade or .29 SD below that of the Control group, as seen in Table 1. Multiple regression was used to separate the contributions of the pre-intervention GPAs from the contributions of the intervention. The pre-intervention GPA scores correlated .31 and .37 to the HESI and the post- GPA scores, respectively, accounting for 10% and 14% of these post-intervention measures.

The adjusted scores in Table 1 are the post-intervention scores corrected for pre- GPA differences between students.

Table 1: Hesi and GPA scores

		Pre-GPA		HESI	HESI adj		Post-GPA	Post-GPA adj
Trt. vs. Ctrls.	Treatment	3.58		934	936		89.45	89.53
	Controls	3.65		874	872		88.20	88.12
	D in points	-0.06		60.4	63.7		1.25	1.42
	D in SDs	-0.29		0.51	0.54		0.31	0.36
	D percentile				**12.9**			**9.0**
	t statistic				2.0			1.5
	probability				p<.05			p<.10

*"D" stands for Difference between Treatment versus Control groups.

The adjusted HESI scores are seen to be almost 64 points higher for the Treatment group versus the Controls, showing a statistically significant 12.9 percentile advantage (t=2.0, p<.05). The spring 2010 GPA scores are also seen to be higher for the Treatment versus the Controls, showing a 9.0 percentile advantage, although the difference is just short of statistical significance (t= p<.10).

Discussion

Of the 22 intervention students, 16 reviewed the CD only once while only 4 reviewed the CD twice as instructed. While we continue to recommend a second review, it appears that the orientation combined with a single review may be sufficient for most students.

This is the fourth consecutive school intervention program to attain test-score gains. Interventions with 5th and 6th grade classes produced 7 and 4 percentile gains respectively on the Tennessee state achievement testing. An early intervention with college freshman produced an 18 percentile gain, with stronger benefits among students on academic probation and more modest gains for those in good standing. The protocol seems to produce stronger benefits with young adults in highly stressful situations, and more modest benefits with younger school children. Taken together, the four consecutive studies support a strong argument that the intervention protocol itself is consistently beneficial and the results are not due to chance or to selective reporting .

The results also suggest serious limitations in what can be obtained through good advice. Remember that the Control group received several pages of excellent anxiety-control suggestions from a highly regarded university website, but fell behind the Intervention group by a full 12 percentile in standardized testing. Research suggests that you do not gain as much from reading self-help material as you would from the same material received in therapy or in a focus group (Rosen, 1987).

The minimum of staff time involved allows a school to intervene with whole classes of students. The screening for test anxiety takes only a half hour per classroom, and it is easy to score the questionnaires and identify anxious students. The introduction for the tests-anxious students takes about an hour, with two staff presenting the method and answering questions. Thus, an intervention to identify and treat 20 or even 40 students might take all of about six or eight staff hours, and large programs are quite feasible which might benefit scores of students or even hundreds with a manageable number of staff hours.

Nursing programs should recognize by now that many nursing students experience unusually high anxiety impairment, and we recommend that programs seek out whatever countermeasures seem feasible. The active control protocol provides a speedy, highly beneficial, and cost-conscious approach to this continuing problem. We wish our nursing programs the best in combating what appears to be an epidemic of high test anxiety among nursing students.

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