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**Declining Performance and Test Anxiety in Practicing Nurses**

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**Abstract**

Many nurses are being required to pass competency and certification examinations to keep or advance in their positions. Unfortunately, anxiety often dampens the nurse's ability to demonstrate competence in a particular area of practice. The dimensions of test anxiety are explained, and signs and symptoms are described. Basic intervention strategies are included to guide educators in helping staff with performance and test anxiety.

Test anxiety is plentiful in our lives today (Casbarro, 2003). A study by Brewer (2002) found that test anxiety was significantly more prevalent in the university student (both nursing and general students) than 20 years ago. A recent study of more than 5,000 undergraduate and graduate students found an inverse relationship between test anxiety and grade point average (Chappell et al., 2005). A variety of treatment options are highly effective for people with performance anxiety, although unfortunately, many individuals are reluctant to ask for help (Powell, 2004). Staff educators are in an excellent position to assist staff in identifying these types of anxiety and offering interventions that will enhance staff performance and, ultimately, their
delivery of care. One type of test that practicing nurses commonly encounter is certification examinations. In a random study of 19,452 international nurses, 47% who were certified 5 years or less reported that they felt more confident in their ability to detect early signs and symptoms of patient complications, and 46% reported being able to initiate early and prompt interventions for clients experiencing complications (Carey, 2001). A recent study of 259 registered nurses found significant differences between those who were certified and those who were not. The certified nurses reported increased perceptions of empowerment and increased access to job-related power and opportunity structures. The researchers concluded that increased perceptions of empowerment may improve work effectiveness (Piazza, Donahue, Dykes, Griffen, & Fitzpatrick, 2006). Conversely, in a study of the lived experience of graduate nurses who failed the licensure examination, the participants reported feelings of losing their identity and doubting their abilities (Poorman & Webb, 2000).

The literature is abundant with research on performance and test anxiety; however, little has been written to help educators with effective interventions for this problem. This article describes the components in the identification of performance and test anxiety and provides several easy-to-implement strategies that have been effective.

Many hospitals are now requiring staff to take and pass certification examinations to advance in their positions. For example, to recognize nursing excellence in the facility, hospitals are striving to meet the requirements to become Magnet-designated facilities. To receive Magnet recognition, a hospital must submit data regarding the certification of nurses (Weeks, Ross, & Roberts, 2006). Currently, there are 235 hospitals that have achieved full Magnet status (American Nurses Credentialing Center [ANCC], 2007a, 2007b, 2007c). According to ANCC, more than 150,000 nurses carry ANCC certification. However during 2005 only 77.1% of those taking ANCC certification examinations passed (ANCC, 2007a, 2007b, 2007c). Whether nurses are simply completing hospital-required competency tests or skills to meet the standards of the Joint Commission on Accreditation of Healthcare Organizations (2005) and to ensure high quality care or they are taking licensure or certification examinations, test taking is a routine part of a nurse's career. Licensure and certification failure can lead to financial loss, inability to advance in one's career, decreased self-esteem, and lowered perceptions of empowerment (Griffiths, Papastrat, Czekanski, & Hagan, 2004; Piazza et al., 2006; Poorman & Webb, 2000). Although most people experience a mild degree of anxiety related to test performance, for others, this anxiety can be severe and have crippling effects. It is not uncommon for a staff educator working with a nurse who must complete a written examination to maintain competency to proclaim, "I have seen her performing well on the unit but she just does not do well on written tests." The problem can also occur when the staff educator must evaluate how well the nurse performs a particular psychomotor skill. The educator often reports, "I think this nurse knows her stuff, but when she has to perform a task in front of me, she goes to pieces." It is therefore important for staff educators to be knowledgeable about how to identify and treat performance and test anxiety.

PERFORMANCE AND TEST ANXIETY: DEFINED AND DESCRIBED
Performance anxiety occurs when strong but delimited fears severely compromise an individual's ability to execute a task that could be reasonably expected (Powell, 2004). Although these individuals are troubled by this anxiety, it does not typically interfere with other aspects of their life (Powell, 2004). For example, a nurse might perform competently on the clinical unit but freeze in an evaluative situation (e.g., when asked to complete the task in front of another individual).

Test anxiety is a specific form of performance anxiety. Researchers have conceptualized test anxiety along multidimensional lines (Hopko, Hunt, & Armento, 2005). According to Spielberger and Vagg (1995), test anxiety is a situation-specific personality trait with worry and emotionality as its major components. Emotionality involves the feelings of anxiety or nervousness with autonomic reactivity such as sweating, increased heart rate, nausea, and headaches. The cognitive components of worry involve thoughts such as, "I'm too stupid to pass" or "Everyone in this class is smarter than me, why can't I ever learn anything?" (Casbarro, 2003). In addition, study habits, test-taking skills, and task-irrelevant thoughts are important correlates of test anxiety. It is the interaction of the components of test anxiety that makes it a dynamic and continuous process (Sapp, 1999). More simply, when nurses with test anxiety begin the test, they already perceive the test as a frightening experience. This fearful perception can become habitual throughout the nurses' lives, creating a conditioned response to any test (Johnson, 2000). When they reach a question on the test that they cannot answer, this increases feelings of anxiety and produces negative cognitions such as, "This test is too hard for me. Where did they get these questions? I am not smart enough." As the test continues, the nurse must not only try to search and retrieve information from memory storage but also formulate an answer to the test question, requiring the nurse to transform and synthesize the information recovered from memory to correctly answer the question. As anxiety increases, this process grows more difficult and faulty. If the test-anxious student perceives the test to be difficult, performance is often impaired. Weber and Bizer (2005) investigated the effects of informing students immediately prior to a test that it would be difficult. The results indicated that the test-anxious students performed worse than if they were told the test would be easy or if they were told nothing about the level of difficulty.

**TEST ANXIETY: SIGNS AND SYMPTOMS**

Educators may ask themselves, "How do I know if staff has test anxiety?" Sometimes, people are well aware of their anxiety and accurately describe what happens to them before and during a test, whereas others are only vaguely aware of the general feeling of uneasiness and tension. Everyone experiences test anxiety differently; however, in general, several behaviors commonly occur. The individual can experience difficulty keeping attention on the task at hand; the focus is frequently interrupted with multiple "task-irrelevant cognitions" that are not related to the task of taking the examination or completing the skill being tested (Casbarro, 2003; Poorman, Mastorovich, Webb, & Molcan, 2003). For example, "I wonder what the other nurses will think if I can't do this. I wonder what will happen if I fail." In a formal testing situation, these thoughts can cause staff members to temporarily stop taking the test and look around the classroom to assess their peers' reaction to the test. Negative cognitions or worries are also frequent (Burns, 2006; Casbarro, 2003; Johnson, 2000). These thoughts are related to the nurses' doubts about their abilities, such as "Every one knows more than me, I can't do this, I don't
know this information." It is common for staff with test anxiety to misread questions or misunderstand what the question is asking (Poorman et al., 2003; Zeidner, 1998). Sometimes, they report physical symptoms (Casbarro, 2003; Poorman et al., 2003) such as nausea, headache, and dizziness, whereas others experience so much anxiety that they find it even difficult to sit still.

**BASIC INTERVENTION STRATEGIES: HOW THE STAFF EDUCATOR CAN HELP**

There are a variety of reasons why people experience test anxiety. Some nurses may tend to be perfectionistic overachievers or are anxious due to poor study and test-taking skills; still, others may be anxious because they fear social judgments and expectations (Zeidner, 1998). Casbarro (2003) suggested that individual and environmental characteristics are factors that influence performance. Individual characteristics include self-worth, confidence in the subject matter, and the ability to regulate emotions. Environmental characteristics that the staff educator might encounter include peer pressure or how much emphasis the hospital or unit places on high test scores or quick mastery of skills. The treatment for test anxiety will differ depending upon the cause of the problem and the symptoms exhibited. A meta-analysis of test anxiety interventions demonstrated that the most effective treatments were those that used a combination of therapies (Ergene, 2003). Figure 1 provides a summary of assessment questions often used to determine the contributing factors for test-anxious staff. All of the interventions described require regular daily practice for optimal performance.

**FIGURE 1**

Test anxiety: assessment questions and intervention strategies.

<table>
<thead>
<tr>
<th>SYMPTOMS</th>
<th>ASSESSMENT</th>
<th>COMMENTS</th>
<th>INTERVENTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMOTIONALITY</strong></td>
<td>Physical symptoms</td>
<td>Has the nurse experienced physical symptoms prior to or during a performance or an exam (e.g., nausea, anxiety, palpitations, blurry vision)?</td>
<td>Cognitive restructuring</td>
</tr>
<tr>
<td><strong>COGNITIVE</strong></td>
<td>High distractability</td>
<td>Has the nurse noticed others fidgeting or fidgeting during the exam?</td>
<td>Visual imagery</td>
</tr>
<tr>
<td><strong>Negative thoughts</strong></td>
<td>When the nurse is nervous, what are the thoughts?</td>
<td>Are the nurse's thoughts realistic or are they preoccupying?</td>
<td>Cognitive restructuring</td>
</tr>
<tr>
<td><strong>STUDY SKILLS</strong></td>
<td>Problem: inability to know what will be tested, what will be tested, or how to prioritize.</td>
<td>The nurse is expected to study for hours, yet they find this study ineffective. Some nurses fail to prioritize information, rather than learning how to study. They also have difficulty differentiating essential information from &quot;non-essential&quot; information.</td>
<td>Highlight statements (only five times per page) Be guided by the questions: &quot;What would you need to know for this test?&quot; Practice questions.</td>
</tr>
</tbody>
</table>
INTERVENTIONS FOR PHYSICAL AND EMOTIONAL SYMPTOMS

Staff members experiencing test anxiety are often unable to specifically articulate troublesome and debilitating cognitions prior to or during a test. They report only generalized vague uncomfortable feelings of anxiety, discomfort, and nervousness.

Often, one of the first strategies to suggest is progressive relaxation. Progressive relaxation is based on the premise that the body responds to anxiety with muscle tension. As the tension increases, so do the feelings of anxiety. As the staff members learn to deeply relax their muscles, the feelings of anxiety decrease (Davis, Eshelman, & McKay, 2000). The effect of progressive relaxation is gradual. To gain mastery, this technique should be practiced twice daily for at least 4 weeks (Bourne, 2005; Sapp, 1999). Progressive relaxation as an initial intervention can decrease the staff members' anxiety enough that they are amenable to other strategies.

Visualization or visual imagery is another useful strategy for nurses experiencing test anxiety, especially those who enjoy using their imaginations. One's imagination can be a powerful way to reduce stress (Davis et al., 2000). Visualization is a way of using images/imagination to modify behavior and feelings. Repeatedly visualizing success at a specific performance can improve that performance (Bourne, 2005). Visualization techniques work best when one is relaxed. Often, nurses use visualization techniques after they have mastered progressive relaxation.

Visualization is the ability to create a mental picture in one's mind. In that image or picture, the individual can imagine making a positive change in behavior. For example, nurses could be instructed to picture themselves performing a task such as starting an IV on someone with very small veins and being able to find a vein that produces a blood return. For both progressive relaxation and visual imagery, there are many scripts available, and nurses can inexpensively make their own tapes specific to their unique testing situation (Bourne, 2005; Davis et al., 2000; Poorman et al., 2003; Sapp, 1999). Two excellent resources exist to help staff educators learn more about how to implement progressive relaxation and visual imagery techniques: The Anxiety and Phobia Workbook (4th ed.) (Bourne, 2005) and The Relaxation and Stress Reduction Workbook (5th ed.) (Davis et al., 2000). A progressive relaxation script appears in the Appendix.

INTERVENTIONS FOR NEGATIVE COGNITIONS
There is much evidence that individuals with test anxiety frequently experience negative cognitions (thoughts) about themselves and their abilities during an examination, which often results in a poorer performance than exhibited by people who do not have these thoughts (Cassady, 2004; Cassady & Johnson, 2002; Sapp, 1999; Spielberger & Vagg, 1995; Zeidner, 1998). Negative cognitions are often precipitated by distractions in the testing area. When staff members take their focus away from the task or test, they begin to have negative thoughts. For example, Natasha, a nurse who is easily distracted, notices that her best friend, Connie, has just completed the test and left the classroom and she still has 15 questions to complete. Natasha begins to think, "How did she get done so fast? Why am I so slow? I must be dumb. I'll never be as smart as her."

A simple way to minimize these types of distractions is to suggest wearing earplugs to muffle or eliminate extraneous sounds. Staff members should practice wearing earplugs prior to the examination so they can get used to the feeling. Otherwise, the earplugs may serve to create a new distraction. As discussed earlier, test-anxious people are bothered not only by distractions in the room but also by their negative thoughts during an examination. Among cognitive treatments, cognitive restructuring was found to have a significant effect on test anxiety (Ergene, 2003). Cognitive restructuring is a technique that can help change negative thinking. This technique involves teaching the nurse to challenge irrational negative thinking and then replace it with more realistic thoughts (Black, 2005; Johnson, 2000; Sapp, 1999; Zeidner, 1998). It is helpful to start by educating the staff member to the process of what really can happen when thoughts are negative. Many people with test anxiety are usually only aware of how they feel during the test (e.g., nervous or scared). They may not be aware of their thinking process until the staff educator helps to increase their awareness. The first step is to assist the nurse to identify negative thoughts, with questions such as, "When you were feeling nervous during the test, what were you thinking?" Encourage the staff member to keep a log/journal in which he or she writes down and evaluates thoughts about performing a required competency. The following is an example from Dan's log: "Tomorrow, I have my competency exam. I am never going to be able to pass. I will probably freeze and go blank. Why does everything have to be so hard for me? I'm never going to make it!"

Staff educators can also help the nurse examine and restructure these thoughts. Asking Dan thought-provoking questions such as, "What evidence do you have that you will not pass? How true is it that you will freeze? How do you know that you are never going to make it? You made it this far" aids Dan to look at his thoughts and see that there is often no evidence to support them other than he believes them to be true.

The next step is to ask Dan to engage in the problem-solving process, with questions such as, "If it is true that you will freeze, what can you do about that?" This helps move the nurse from a passive to an active learner. Suggesting that Dan rehearse the actual skill test helps him remember the steps in proper sequence. The best approach to this problematic cognition is to advise the nurse to meet with the staff educator giving the test to review the appropriate sequence of the competency being tested. When people are able to identify and evaluate negative cognitions realistically, they are usually less controlled by them. The nurse can see that his or her thoughts are at least somewhat distorted; however, more importantly, the nurse can see how these negative
cognitions are harmful during a test. With this newly found realization, staff members can usually decrease their anxiety level enough to move into a problem-solving state where they can become open to possible solutions.

**INTERVENTIONS TO ENHANCE TEST TAKING**

A useful intervention for the test-anxious nurse is teaching skills specifically related to multiple-choice questions, a testing format commonly used in nursing education. Teaching staff to become aware of common thinking and reasoning errors that they make on examinations can be quite helpful. Individuals with test anxiety often make mistakes on a test unrelated to content deficits. Specifically, they frequently misread what the question is asking them and/or add extraneous irrelevant information to the test question. A good place to start in identifying these types of errors is to ask the nurse several assessment questions, such as, "What happened that you were unable to correctly answer this question?" or "What were you thinking while reading this question?"

One of the best intervention techniques, also the most simple, is to practice taking tests. Staff educators should recommend that nurses complete practice questions simulating the test as if it were the actual examination. This technique can also be used for individuals who must demonstrate competency of a psychomotor skill such as obtaining a 12-lead electrocardiogram. The staff member would practice on a mannequin until the skill becomes routine and anxiety diminishes. Repeatedly practicing questions or performing a skill desensitizes the staff members to the upcoming test. They can learn to view completing practice test questions or a skill as something common to their daily routine rather than something to be feared and avoided. Nurses need to learn to use the energy from the anxiety to take control over the test preparation. Suggest that the individual make an appointment with the educator developing the test. Have the nurse find out as much about the format or blueprint of the test as possible, then have the staff member repeatedly try to simulate the actual testing conditions and practice taking mock tests. This process helps the nurse conduct a self-assessment of strengths and weaknesses related to the test content. As individuals identify weak content areas, they can review that material on their own or get help from a colleague or the staff educator. This technique forces active participation and can be the first step in helping develop a sense of control and mastery over learning. Often, individuals with performance and test anxiety feel a tremendous sense of helplessness, believing that there is nothing that they can do to alleviate this problem. When individuals complete practice tests, it provides a visual assessment of not only problem areas but also progress as they continue to increase their skills through practice.

**INTERVENTIONS FOR INFORMATION PROCESSING AND MEMORY**

Often, individuals who experience performance and test anxiety have difficulty with memory during the performance or test. As anxiety increases, they have more difficulty retrieving the content that they studied or the steps required for competency. Some staff members with test anxiety do have a comprehensive knowledge base and truly do go blank during the test, only to regain full memory of the information as soon as they finish the test. For others, the test anxiety begins when they start to prepare. Individuals often experience the same debilitating symptoms
of test anxiety when they practice the skill or study as well as when they are actually taking the examination. For example, Peter admitted to the staff educator that he hates to study and will do anything to put it off. "I hate the way I feel when I start to study. I get nervous, irritable and start thinking, 'I'll never learn all this, it is too much information. Why can't I be smarter? I am never going to pass.'" Symptoms of test anxiety encountered during study time interfere with the nurse's ability to process and remember the information. Not only will these individuals experience test anxiety symptoms during the test, but also they are going into the test with a diminished knowledge base. These individuals never really gained a comprehensive command of the material being tested as the symptoms interfere with their ability to store and process the appropriate information. Several techniques can be used for memory and information processing problems. Strategies such as mnemonics can help individuals remember and organize examination-relevant information. For example, the staff member can draw pictures of a patient with a specific disease process illustrating how the disease would appear as symptoms. Games have also been helpful for nurses to remember copious amounts of test information. Because many people put off studying because they experience uncomfortable anxiety, games have a second purpose in that they help stop procrastination. Games are fun and help take the focus away from the anxiety. Test-anxious individuals are often willing to engage in playing games that help them study not only because it decreases their anxiety but also because it provides structure and organization to test preparation. Games such as bingo and crossword puzzles can be developed for content areas that the nurse finds difficult to master. For example, Amy could not remember laboratory values, so the educator suggested laboratory value bingo. Amy and several colleagues made bingo index cards and took turns calling out the numbers that matched the laboratory value on the card.

For individuals with information and memory processing problems, a helpful intervention is for educators to teach staff members to ask themselves questions while they are actually answering practice questions. For nurses to become effective test takers, it is important to help them learn how they think. Thinking about one's thinking is termed metacognition (Rubenfeld & Scheffer, 1999) and enhances critical thinking (Rubenfeld & Scheffer, 2006). Metacognitive skillfulness during an examination was examined by Veenman, Kerseboom, and Imthorn (2000). These authors found that participants with low test anxiety exhibited superior metacognitive skillfulness as compared with their counterparts with high test anxiety. Furthermore, they suggested that some individuals with test anxiety would benefit from a specific metacognitive skill: cueing. Metacognitive cueing consists of providing individuals with prompts or questions to help them think through problems. As staff members come upon a question they believe they do not know, a stream of negative cognitions ensues. Many people may not be able to remember the specific principle being tested, but they do know or have some information related to the principle being tested. If nurses can be taught to ask themselves questions (or think about their thinking) while answering questions, they often arrive at the correct response. Many individuals are innately able to do this while answering questions; however, individuals with test anxiety can also be taught this metacognitive skill.
Staff educators can enhance individuals’ ability to process information by teaching them to ask questions while reviewing the items they missed on practice examinations. For example, Lori was completing the following question:

The nurse is reviewing laboratory data. Which client should be seen first? A client with:

* pancreatitis who is receiving total parenteral nutrition (TPN) and has a glucose level of 180 mg/dl.

* a specific gravity of 1.002 and is recovering from a hypophysectomy.

* viral meningitis who has a small amount of white blood cells in his cerebrospinal fluid.

* glomerulonephritis who has a blood urea nitrogen (level) (BUN) of 24 mg/dl.

Lori: "I don't know which one to pick. All of the laboratory data are abnormal. I feel stupid. I don't know anything."

Educator: "I doubt you don't know anything. What is the major component of TPN?"

Lori: "Glucose."

Educator: "Right, so would someone who is receiving TPN be expected to have an elevated glucose level?"

Lori: "Yes, and 180 mg/dl is not dangerously high, so that client would not need to be seen first."

Educator: "Right. Now, what else in the question would be an expected finding, not a dangerous one?"

Lori: "Well, if someone was diagnosed with meningitis, the white cells in the cerebrospinal fluid would indicate that he or she is trying to fight the infection, so that would be expected."

Educator: "What do you think about the client who has glomerulonephritis? What is happening to him?"

Lori: "In glomerulonephritis, the kidney has difficulty filtering the blood; therefore, I would expect that the BUN would be elevated."

Educator: "That is correct. Now tell me what you know about a hypophysectomy."

Lori: "It is removal of the pituitary gland."

Educator: "What does the pituitary secrete?"
Lori: "Antidiuretic hormone."

Educator: "Yes, now why might you be concerned about a specific gravity of 1.002 in this client?"

Lori: "Specific gravity measures urine concentration, and 1.002 is very low. This may indicate that this client may have diabetes insipidus."

Educator: "So why would someone who has diabetes insipidus need to be seen first?"

Lori: "If we don't correct it, the client could easily dehydrate."

Educator: "That is correct. All of the options demonstrate abnormal data; however, the laboratory finding that indicates a potentially life-threatening problem is the low specific gravity."

By asking Lori questions about what she does know, Lori can then think about what is happening to the client. This metacognitive cueing offered by the nurse educator can help Lori arrive at the correct response. Assisting Lori to break down the information contained in the test item and then systematically assimilating the known facts will help her arrive at the correct conclusion (i.e., the right answer).

Lori can also use this metacognitive technique on her own. When practicing questions, she might begin by asking herself, "What do I know about the information contained in the question? What options can I eliminate right away? What is the relationship between what the question is asking and the remaining answers? Do the options answer the question being asked?"

During an examination, metacognitive cueing will not work when the nurse truly has a knowledge deficit. Although it is reasonable to assume that if information was never learned, it cannot be processed, it would seem inappropriate to teach metacognitive cueing to nurses who have knowledge deficits. However, if the test anxiety creates difficulty in processing the information, metacognitive cueing can enhance performance (Veenman et al., 2000).

Metacognitive cueing can enhance the nurse's ability to not only process information but also store new information. Completing practice questions can enhance test performance. When nurses are preparing for an upcoming examination through the review of practice questions, they can use metacognitive cueing to differentiate between what they know and what needs to be learned. Frequently, the individual knows some of the information required to answer test items correctly. Metacognitive cueing can help identify the missing informational pieces necessary to get to the right answer. Nurses can then use these assessment data to create a study plan individualized to their needs.

As the nurse uses metacognitive cueing to store or process information, it is important to stress that this skill needs to be practiced repeatedly to gain mastery. This intervention works best when the staff educator demonstrates it by asking questions about the item being tested to arrive at the correct answer. The nurse then practices the skill by completing simulated test questions on a
daily basis. Based on repeated practice, staff will learn to ask these same types of questions when in a true testing situation. The goal of metacognitive cueing is to be able to transfer this type of thinking about one's thinking to the actual examination. When they get to a question they do not know, instead of panicking and having negative thoughts, they ask themselves questions to help them think through the item being tested.

In summary, nurses encounter testing as a routine aspect of their careers. Testing may begin in nursing school, but it certainly does not end there. After graduation, nurses must sit for their licensure examination, and hospitals give routine competency examinations. And to further their professional life, many nurses choose to be certified in their chosen specialty. For some of these nurses, tests can create anxiety, which can lead to debilitating effects. Behavioral and cognitive techniques such as progressive muscle relaxation, visual imagery, and cognitive restructuring can help nurses reduce anxiety and change nonfacilitative thinking. If more nurses can overcome anxiety related to tests, they will be more likely to pass them, gain confidence in their abilities, and perform nursing care at a higher level.

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**APPENDIX A**

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