SYNOPSIS

INTRODUCTION

Stress, anxiety, and coping are universal human experiences, intrinsic to the human condition. The nature of the specific environmental stimuli evoking stress and anxiety emotions has changed remarkably over the years. Whereas in ancient times wild beasts, natural catastrophes, and the like may have been the major sources of apprehension and anxiety, in our modern technological and achievement-oriented society stress and anxiety are evoked largely by social-evaluative and ambiguous environmental situations. Contemporary society is best described as test-oriented and test-consuming (Zeidner, 1998).

As the domains of academic and examination stress are not clearly defined in the literature, the extent to which these two concepts might overlap is not clear. As examinations refer to a particular type of academic work, examination stress might be seen as a subtype or context-dependent form of academic stress. (Putwain, 2007) Many students suffer the debilitating effects of test anxiety and the resultant academic pressure. Many general classroom activities have become stressful precisely because of their examination focus. It could therefore be questioned whether the debilitating effects of academic stress are largely due to examination stress. Perhaps the differences between academic and educational stress are not as obvious as they might seem. Given the importance of the role of examinations in determining academic stress, it should be properly questioned whether the real focus of attention should be examination rather than academic stress. (Putwain, 2007). One of the major determining factors in assessing any academic performance is how well or poorly a student does when tested. This expectation leads to nervousness and anxiety among the test taker about their performance. This experience of anxiety is referred to as test anxiety. For the present study, we define Test Anxiety as a combination of physiological over-arousal, tension, and somatic symptoms, along with worry, dread, fear of failure, and catastrophizing, that occur before or during test situations.

There have been ongoing debates among academics and educational activists if exams or tests are the most appropriate ways to assess the learning of a student. The debate continues

unanswered. Therefore, as of now, the option before mental health professionals is to explore ways and means to help students who suffer from academic pressure to cope with it effectively. There have been innumerable interventions and therapies suggested to cope with exam anxiety and academic pressure. Techniques including biofeedback, behavior therapy, cognitive behavioral therapy, priming competency, and mixed approaches have demonstrated promising results (Von der Embse, 2013).

The question that is being asked in this study is how specific intense stress like test anxiety can contribute to academic pressure in a significant way. In this paper, the researchers define what test anxiety is and explains how it contributes to academic pressure leading up to suicide or self-harming behaviors. Finally, the effects of two intervention strategies, namely Hypnotherapy and NeuroLinguisitic Programming in addressing the problem of academic pressure are compared and contrasted.

Test/Exam Anxiety

Test anxiety is a type of performance anxiety. A feeling someone might have in a situation where performance really counts or when the pressure is on to do well. Like other situations in which a person might feel performance anxiety, test anxiety can bring on "butterflies," in the stomach, various body aches, or a tension headache. Some people might feel shaky, sweaty, or feel their heart beating quickly as they wait for the test to be given out. A student with strong test anxiety may even feel like he or she might fail.

Test anxiety is also a feeling of agitation and distress. It can be labeled as "anticipatory anxiety" if we feel distressed while studying and when thinking about what might happen when we take a test. Test anxiety can be labeled as "situational anxiety" if it occurs while taking a test. Some level of anxiety is natural and helps to keep us mentally and physically alert. However too much may of anxiety cause physical distress, emotional distress, and concentration difficulties. Anxiety occurs in a wave, so it will increase from the time we first recognize it, come to a peak, and then eventually subside.

The second part of the 20th century has been variously designated as the "age of stress," "age of anxiety," or more recently, "age of coping" (Endler,1996). As we saw already, the nature and

sources of anxiety have changed over the past century. The sources of our anxiety have shifted from the natural origins of danger to more of performance and evaluation by others based on fears and distress.

Definition of Test Anxiety: According to the oxford dictionary "the term test anxiety as a scientific construct, refers to the set of phenomenological, physiological, and behavioral responses that accompany concern about possible negative consequences or failure of a test". Test anxiety is a psychological condition that involves severe distress before, during, and/or after a test, making it impossible for the subject to do their best work. According to the American Test Anxiety Association, severe test anxiety could afflict as much as 20 percent of the school-going population, and another 18 percent may have a moderate form of the condition.

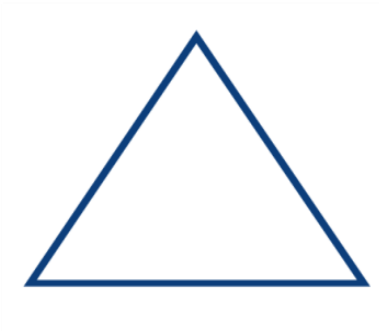
All anxiety is a reaction to anticipating something stressful. Like other anxiety reactions, test anxiety affects the body and the mind. When we are under stress, our body releases the hormone adrenaline, which prepares it for danger (we may hear this being referred to as the "fight or flight" response). This heightened arousal causes physical symptoms, such as sweating, a pounding heart, and rapid breathing. These sensations might range in intensity from mild to intense.

Focusing on the bad things that could possibly happen also fuels test anxiety. For example, someone worrying about doing poorly might churn up thoughts like, "What if I forget everything I know?" or "What if the test is too hard?" Too many thoughts like these leave no mental space for realistically thinking about the test questions – which would in fact be the productive cascade/chain of thoughts. People with test anxiety can also feel stressed out by their physical reaction and develop thoughts like "What if I fail?" or "Oh no, my hands are shaking".

Like every kind of anxiety, test anxiety can create a vicious circle: The more a person focuses on the bad things that could happen, the stronger the feeling of anxiety grows. This makes the person feel worse and, because his or her head is full of distracting thoughts and fears, it can ultimately increase the possibility that the person will do worse on the test – confirming their fears. This is what the social psychologists would label as Confirmation bias. It is the tendency to search for, interpret, favor, and recall information in a way that affirms one's prior beliefs or hypotheses. It is a type of cognitive bias and a systematic error of inductive reasoning (Coleman, 2009).

THE TEST ANXIETY TRIANGLE

COGNITIVE



PHYSIOLOGICAL EMOTIONAL

Anxiety is a reaction of the mind and/or body to a perceived threat. The cluster of symptoms associated with anxiety can be organized into three components forming a triangle, within which test anxiety flourishes. Each component is interrelated and attempts to alleviate symptoms of any one of these components will significantly affect the others.

Perhaps the easiest place to start is with the **physiological symptoms** associated with test anxiety. These symptoms are the most observable, both to the individual and to others, since they involve the body's reaction to anxiety. The most common physical responses to test anxiety can be divided into at least six different categories: changes in body temperature, breathing difficulties, muscular responses (stiffness in muscles), abdominal problems, headache/sensory responses (dizziness, lightheadedness, blurred vision), and cardiovascular reactions (palpitations or tightness in chest, an increase in blood pressure). There is also an array of other physical symptoms associated with test anxiety which include skin rashes, changes in eating patterns (eating too much or too little), an increase or decrease in activity level, sleep disorders (insomnia, nightmare, or, in severe cases of phobia, night terrors) and increase in alcohol, tobacco and other drug consumption. When we consider that often a combination of these responses occurs during test-anxiety situations, we can readily understand why test performance suffers.

Emotional symptoms of Anxiety are the second primary component of test anxiety. Emotional responses can be categorized into three areas: mood changes, emotionally labile (unstable) responses, and feelings of losing control. These emotional factors can literally override other bodily functions and can easily lead to task avoidance, a panic attack, or a full-fledged phobia. It is here that emotional intelligence theory has so much relevance. Even if a student can memorize and master a huge amount of academic content but cannot retrieve it during the test due to his/her emotions, the rote learning becomes useless. The ability to regulate one's emotions is the key to overcoming test anxiety.

The third and final component of test anxiety is **mental or cognitive symptoms**. The symptoms most often associated with this component are irrational thinking, feelings of failure or rejection, forgetfulness, memory loss, and loss of concentration and focus. This series of symptoms is rooted in a faulty intellectual process where negative rather than positive thinking takes control. The result can best be described as students making themselves sick with worry because irrational thoughts overwhelm them, leading to a lack of confidence and inability to concentrate and focus.

The field of test anxiety is approximately 50 years old (Cizek and Burg, 2006). The concept was first investigated in the year 1914 and the first instruments to measure test anxiety were developed in the early 1950s. Initially, test anxiety was perceived to be only one-dimensional as it was defined in motivational terms and was viewed as a type of general anxiety expressed in examining the environment.

A few changes were introduced to the concept of test anxiety in the '60s and the early '70s. Anxiety was now perceived as "a temporary state of mind" or as "a basic personality trait." A distinction was also created between two primary dimensions of test anxiety: worry and emotionality (Stöber and Pekrun, 2004). As a result, the outlook of the concept shifted from more of a behavioral to more of a cognitive orientation (Lowe, et al., 2007).

"The cognitive-attention model of test anxiety (Wine, 1971) states that anxiety divides attention between task-relevant and task-irrelevant thoughts which lead to disturbed recall of prior learning (Lowe et al., 2007)."

"Advances in the '70s and 80's focused more on cognitive models of test anxiety and how it affects attention and cognition performance and the applications derived from that research (Stöber and

Pekrun, 2004).” Research in the ’90s of the self-regulation, self-worth, and transactional process models has formed the next phase of test anxiety conceptualization.

The research conducted on test anxiety provided more than 1,000 scientific publications since 1952, although test anxiety research has declined recently (Ziedner, 1998). Approximately 30 studies in the 50‘s focus on test anxiety, 150 in the ‘60s and 271 in the ‘70s, and only a small amount in the ‘80s and 90‘s (Cizek, 2006; Hembree, 1988).

Just before World Word II, several American researchers became increasingly concerned with understanding the nature of exam-induced anxiety and how to amend it. In the 1930s, they called attention to the seriousness of the problem of test anxiety after the suicides of two students at the University of Chicago were associated with exaggerated concern over approaching examinations, which students approached in a “deadly” serious way.

Thus, was developed the first psychometric scale for identifying high-risk test-anxious students**.**

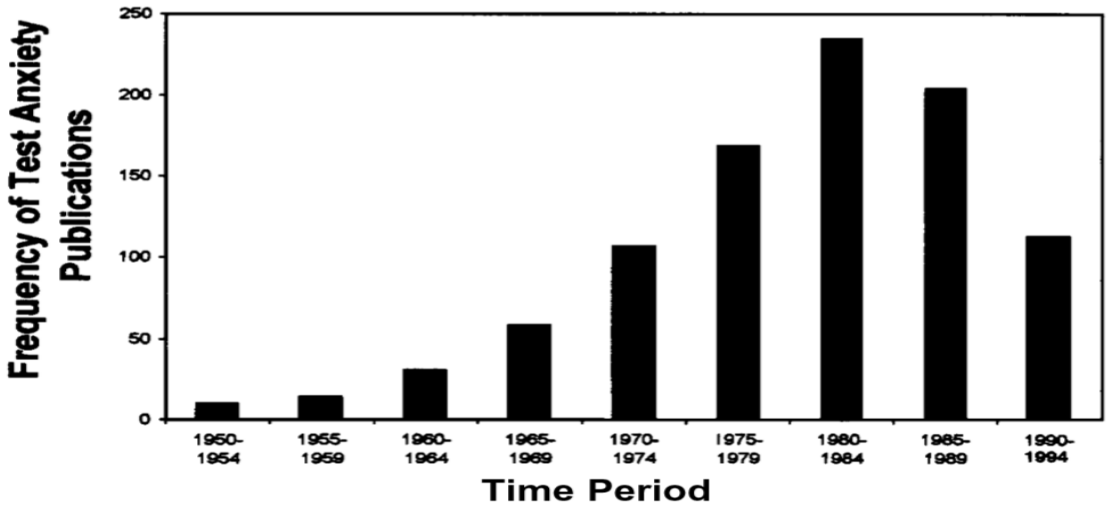


Figure 1.1. Frequency distribution of test anxiety publications from 1950 to 1994. Studies were identified via computer searches of the data bases for *Psychological Abstracts* and the Educational Resources Information Center (ERIC). Additional studies were found by hand, by manually searching major journals, soliciting studies directly from authors, and tracking citations from study to study. Only journal articles and book chapters in English are included.

Current Situation

As calculated by Cizek and Burg, a recent estimate states that almost 33% of elementary school students exhibit test anxiety. Moreover, test anxiety has become even more of an important issue as the amount of testing and its consequences have increased for students in the U.S. (Cizek and Burg, 2006). Age, sex, ethnicity, socioeconomic status (SES), family environment, self-esteem, subject matter, and cross-cultural issues are some documented variables affecting test anxiety. Cizek and Burg validate these findings in a research paper in 2006. Another research paper by Johnson in 2007 also provides evidence for the theories. Cizek and Burg also mention the possibility that females may be more willing to report test anxiety than males.

1. Test Anxiety, Academic Pressure and Suicide and Self Harming behaviors

The rapidly expanding regime of exams has generated too much stress and anxiety among the students. Exam stress is a universal phenomenon and has been widely reported among school-levels in Britain and Japan. In India too, students are found to be under excessive stress due to exams. The whole examination system in India is very stressful for students. Thousands of students are believed to commit suicide over exams each year, but figures are sketchy as some cases are not reported as exam-related.

According to the National Crime Records Bureau (NCRB) of India, Youth (18 and above-below 30 years) is one of the most vulnerable groups resorting to suicides. This age group accounted for 32.8% of suicides. Family Problems (307), Illness (163) Failure in Examination (162) were the main causes of suicides among children below 14 years of age(National Crime Records Beurau of India, 2015). To a student, the prospect of sitting for an exam can be identified as a stressor and the resulting physiological, emotional and cognitive state can be described as exam stress.

HYPNOTHERAPY

According to the medical dictionary, hypnotherapy is 'A type of psychological treatment where a person is put into a state of altered consciousness (that is, a trance) and deep relaxation, to improve a person's ability to access certain internal experiences, such as memories or emotions'. Some people may be more susceptible to suggestion during hypnosis.

Hypnosis is a state of consciousness that is experienced by one and all in their lives from time to time (Vyas, 2014). Typical instances would be when someone is reading a book and is so much into it that he doesn't hear when he is called. Or while watching a film a person becomes so emotional that she starts to cry despite being fully aware that she is only watching actors perform and what he is seeing on screen is not real. This heightened state of concentration is the state of hypnosis. Erickson(Erickson, 1958)defines hypnosis as "a state of intensified attention and receptiveness and an increased responsiveness to an idea or a set of ideas."

This state of hypnosis can be induced in one person by another. In this state of consciousness, suggestions are not only more readily accepted than in the waking state but are also acted upon much more powerfully than would be possible under normal conditions(Heartland, 1971). This happens because, in the hypnotized state of consciousness, the suggestions given to a person can bypass his conscious mind and reach his unconscious mind which becomes more effective. During the hypnotized state of consciousness, a person is in a state of dual consciousness. He is aware of what is going on around him (like the suggestions given to him by the hypnotist, sounds, and smells that are going on in the environment) and, he can delve into his unconscious mind. According to Vyas and Vyas(Vyas, 2014), "the characteristics of this state are that the mind is quiet, calm and peaceful. A general sense of well-being prevails. The person is awake, but the state is more like sleep than awake. It is a state of alert restfulness. In this state there is focalization on the subject, be it an image or a mantra and, the marginal inputs fade. The focal point becomes symbolic i.e., it gathers content that goes on expanding in its abstract meaning. There is attention on the focalized idea, but it is not accompanied by any kind of tension. There may be distraction by the surroundings but there is no disturbance."

Hypnosis is induced by using various induction methods like Breath watching, Progressive Muscular Relaxation, Eye-fixation with verbal suggestion, Eye-fixation with Progressive

Muscular Relaxation, Eye-fixation with distraction, Direct eye-gaze method, Erickson's hand-levitation method, Erickson's confusion Technique, Chiasson's method, etc. Whichever method be used, all trance induction methods aim at a gradual restriction of consciousness, by limiting sensory impressions(Heartland, 1971). This sensory restriction is reinforced by a rhythmic, monotonous repetition of suggestions.

Hypnotherapy is known to work for all kinds of anxiety problems (Hammond, 2014) and test anxiety is no different. Various researchers have used hypnotherapy at different times to find its effect on exam anxiety. Ainsworth, et al. (Ainsworth, 2010)Concluded that those who received hypnotherapy reported that they found it helpful and useful. Similarly, Boutin(Boutin, 2011)demonstrated the effectiveness of Rational Stage Directed Hypnotherapy in the treatment of test anxiety. Palan & Chandwani (Palan, 2011)found that the hypnosis group improved significantly in coping with examination stress as compared to the other groups.

NEUROLINGUISTIC PROGRAMMING (NLP)

Neurolinguistic Programming (NLP) is a system of beliefs, techniques, and axioms that is often used for self-development. Originally developed by Bandler and Grinder (1973), NLP aims to analyze the nature of subjective experience, as a means of therapy. The fundamental idea of NLP is that all experience is relative, and therefore each individual has to approach their interpretation of reality in a way specified to their feelings, thoughts, beliefs, and models of the world. Often, therapy related to NLP takes the form of 'modeling' or copying expert behavior. The idea behind this is that people can learn to program their minds to function desirably by observing an example and neurologically encoding and internalizing methods used. NLP is based on linguistics, psychology, and neurology. Therefore, the nature of the therapy linked to NLP is complex and relies essentially on an individual's perception and appraisal of the world.

NLP is a process-oriented psychology that deals with the how of a situation and why (outcome) and is not concerned with the what (content) and the why (excuses for not doing anything) the last two getting us nowhere to solution.

"An attitude of insatiable curiosity about human beings with a methodology that leaves behind it a trail of techniques" Richard Bandler (1973)

At the heart of NLP is a wide range of methods and models it offers for understanding how people think, behave and change. It offers a flexible approach that brings about positive, fast change in individuals and organizations and empowers them to adapt to an ever-changing world.

Neuro-Linguistic Programming describes the fundamental dynamics between mind (neuro) and language (linguistic) and how their interplay affects our body and behavior (programming).

Neuro refers to the neurological system and is based on the idea that we experience the world through our senses and translate the sensory information into thought processes, both conscious and unconscious. These thought processes activate the neurological system, which affects physiology, emotions, and behavior. NLP is about learning how to manage our neurological system for optimum results.

Linguistic refers to the way human beings use language to make sense of the world, capture and conceptualize experience, and communicate that experience to others. It is the study of how words mediate and influence human experience. Much of NLP is about learning how to think more effectively and communicate more effectively with yourself and others.

Programming draws heavily from learning theory and addresses how we code (mentally represent) experience. Our personal programming consists of our internal processes and strategies (thinking patterns) that we use to make decisions, solve problems, learn, evaluate and get results. NLP shows people how to recode their experiences and organize their internal programming so they can get the outcomes they want.

Neuro-Linguistic Programming was first defined by Richard Bandler (a mathematician) and John Grinder (an Associate Professor of Linguistics) working together at the University of California, Santa Cruz, in the early 1970s at a time of rapid development in the humanities field.

It just so happens that three people they choose to model were the outstanding therapists, Firtz Perls (Gestalt Therapy), Virginia Stair (Family Therapy), and Milton Erickson (World-renowned psychiatrist who gave his name to a form of hypnosis and brief therapy): they could just as easily have modeled outstanding business people or scientists. Bandler and Grinder modeled their language, physiology, and mental processes and identified patterns (rather than theories) that could be coded and explicitly taught. NLP also drew on many existing fields of study including the work of Chomsky in linguistics, of Korzybski in general semantics, Ashby in systems thinking and many, many others.

Anderson (2009) believes that hypnotization as a form of therapy is useful in reducing test-taking anxiety by the rehearsal of thoughts. This therapeutic hypnosis is based on the axioms of neuro-linguistic programming (NLP). Anderson suggests that one way of reforming negative thoughts is to play the bad-scenarios backward through the mind, along with playing the soundtrack to the thoughts in reverse. This ideology stems from the idea of neuro-linguistic programming that our mental construct of thoughts is developed by expectation and memory and can be therefore modified by conscious alteration of patterns found significant in the mind. Hypnosis stems from the notion that people are anxious due to the memory of a negative experience or the expectation of a negative experience, and that the reduction of anxiety can be induced by suggestive

modification. The difference being that NLP relies on *the way* a person thinks, whereas hypnosis relies on *what* a person thinks. NLP is a relatively new concept that has become popular in many fields and is finally being applied to education and examinations.

Paramedical Studies:

A Paramedic is a professional who helps Doctors in specialized areas and facilities for better diagnosis, treatment, and therapy. Paramedical profession - According to the oxford dictionary – the paramedical profession is - Relating to services and professions which supplement and support medical work but do not require a fully qualified doctor (such as nursing, psychology, pharmacy, physiotherapy, dietetics, etc.)

The increase in the number of patients, the variety of diseases, and the demand for immense treatment have paved the way for paramedical professionals who are expert technicians or therapists providing better quality towards Human Health Care. Thus, the field of paramedical sciences is gaining ever-increasing importance and demand, offering lucrative careers in the health sector.

REVIEW OF LITERATURE

Test-related stress and anxiety are commonly observed in today's generation (mainly students). Various researches have shown that test stress and anxiety affect the overall wellbeing of the student. Therefore, it is very important to work out effective ways of coping with it. A lot of research has been done in this area of test stress and anxiety. The following is a review of some of the research work done in dealing with test stress and anxiety.

Aysan, et. al (2001) examined the effect that major academic test periods have on students. A group of 59 high school juniors (mean age 15 years) and a group of 54 high school seniors (mean age 17.4 years) in Izmir, Turkey, completed measures of test anxiety, coping skills and perceive health status both before and after a major test period. Results show that students with high test anxiety used fewer coping mechanisms and tended to have a poorer perception of their health. Before tests, juniors displayed higher test anxiety and used less effective coping mechanisms than seniors. After the test periods, improvement was seen for both age groups on perceived health, but scores of younger students remain significantly higher than scores of seniors on one of the key measures of test anxiety. Results of the study lend support to those of previous studies done in other cultural contexts, and findings have implications for the development of intervention designed to help students cope with test anxiety.

B.M.Palan and S.Chandwani (1989) examined if hypnosis can be used to help students cope with examination stress. Fifty-six volunteer medical students participated in three groups balanced for number of subjects, performance at last examinations, and hypnotizability. The hypnosis and waking groups attended eight group sessions once a week with general ego-strengthening and specific suggestions for study habits with a ninth session of age progression and mental rehearsal. Subjects in these two groups practiced self-suggestion (in self-hypnosis or waking respectively) daily for the study period of a week. The control group experienced sessions of passive relaxation induced by light reading for the same period. The hypnosis group improved significantly in coping with examination stress, but there was no significant change in performance on examinations by any of the groups.

Schreiber & Schreiber (2000) used hypnosis and Jacobson's relaxation techniques for reducing test anxiety. The study of group hypnosis and Jacobson's muscle relaxation techniques evaluated change in test anxiety level of undergraduate students in educational psychology. An intact group of 30 students were hypnotized and were compared over 15 weeks with a class of 22 students who were given muscle relaxation instruction. Although initially scores were similar the former group had shown significantly low test anxiety on the final examination than the latter.

Cheek, et. al (2002) describe an intervention designed to reduce elementary students' test anxiety that can be implemented by school counselors. Relaxation and stress management techniques were administered, and a test anxiety exposure hierarchy was determined. The students were taught a relaxation technique called, "stop, drop and roll", then used this technique during imagined exposure to the hierarchy items. Afterward, students in the intervention group taught their classmates the "stop, drop, roll" technique in the classroom. Following the administration of the state-wide test, the 16 students in the administration of the test felt less stress and worry about future test situations. 75% of the students who participated in the group passed the reading portion and 95% passed the mathematics portion. Results suggest that the interventions were a component of students success.

Dr. David Barlow of Boston University's Center for Anxiety and Related Disorders asserts that people can talk to their amygdala to reduce stress in their minds and bodies. The idea here is to calm the amygdala, by communicating disarming messages. The amygdala is the part of the brain associated with feelings of fear and anger. In the case of anxiety (of different sorts), fear as a response from the amygdala can be silenced by hypnosis (Warren 2005).

Bandler and Stephen (2003) researched 160 medical students. They took the anxious students and used a notable technique of NLP called 'anchoring' that is often used to help students overcome test anxiety. Anchoring is when a student is taught to recall an instance when their self-esteem was exceptionally high and when they had made a great accomplishment. They were then instructed to replicate those feelings in their minds while squeezing their fingers together. The feelings were, by concentration, amplified into a trance-like state in which an anchor of strong positive feelings is created. The subjects were then told to recreate a memory of taking a test that was successful and to squeeze their fingers together again. The idea here was that the subconscious will relate the strong feelings of self-esteem to a test-taking situation, therefore enabling the student to overcome

test anxiety. They concluded that the NLP intervention improved the student's ability to concentrate and remain calm during a test.

Rationale:

Examination stress and test anxiety are pervasive problems in modern society. As the information age continues to evolve, test scores will become even more important than they are today in evaluating applicants for demanding jobs and candidates for admission into highly competitive educational programs. Because test anxiety generally causes decrements in performance and undermines academic achievement, the development of effective therapeutic interventions for reducing its adverse effects will continue to be an important priority for counselors, psychologists, and educators.

Over the past few decades, there has been an upsurge of interest in test anxiety research among psychological and educational researchers. Hundreds of researchers have investigated the nature, antecedents, correlates, and consequences of test anxiety, and the literature is prodigious. A wealth of studies relating to various facets of test anxiety has appeared in some of the premier journals in psychology and education. Test anxiety has become a major topic of research interest in education and various subareas of psychology, including personality and social psychology, educational and developmental psychology, cognitive psychology, health psychology, counseling, and clinical psychology.

Because of the burgeoning interest and massive research on various aspects of test anxiety, and the progress achieved by researchers in understanding its nature, determinants, consequences, and different therapies to deal with test anxiety, students are bombarded with so many therapeutic options. Therefore, the time seems ripe for summarizing the concept of test anxiety and start focusing on the comparison of various therapeutic methods to overcome test anxiety, which will help them decide which therapy is most effective. As a result, we can help the anxious students to perform and achieve to the best of their abilities.

Objectives:

The following issues and objectives were the focus of the presented study.

1) To study the effectiveness of hypnotherapy on test anxiety.

2) To study the effectiveness of Neurolinguistic programming on test anxiety.

3) To compare the effectiveness of Neurolinguistic programming and hypnotherapy in the context of test anxiety.

4) To investigate which effect is more persistent after 2 months.

Method:

Variables:

Independent variable: The independent variables in Test Anxiety are perceived conditions of variation in the dependent variable(s). In this research, the researcher has incorporated Demographic variables: age, gender, birth order, education & occupation of parents, along with the Therapeutic Techniques, as Independent Variables. Therapeutic Techniques are on three levels:

- The Therapy Techniques were conducted in three levels:
    - Hypnotherapy
    - Neurolinguistic programming
    - Control

- **Dependent variable:** Test Anxiety

Control variable:

Inclusion Criteria:

- Age of the students (17 to 25 years)
- Only students of the paramedical field in Baroda were considered for study.
- Students from Bachelors first year to Masters final year were included in the research.
- In this research paramedical field included only physiotherapy, pharmacy, and nursing departments
- Only the students having test anxiety at above-average or higher level were included in the intervention program.
- English language was kept as a medium of instruction throughout the intervention program; hence care was taken that the student participants be familiar with and comfortable in English.
- The intervention program was arranged in a manner to conduct a significance test after the intervention and before the Follow-up session, this provided a deeper understanding of their anxiety level.
- Suggestibility of students was checked before taking them for therapeutic intervention.

Exclusion criteria:

- Student participants suffering from any mental disorder
- Student participants undergoing any other anxiety or anxiety-related treatment. Students who were not comfortable or familiar with the English language were not included in the intervention program.

Hypothesis:

- [Group A – Hypnotherapy]
- [Group B – Neurolinguistic Programming]
- [Group C – Control group]

1. Hypothesis 1: There will be a significant difference in the pretest scores and post-test scores of group A [hypnotherapy group].
2. Hypothesis 2: There will be a significant difference in the pre-test scores and Follow-up scores of group A [hypnotherapy group].
3. Hypothesis 3: There will be a significant difference in the post-test scores and follow-up scores of Group A [hypnotherapy group].
4. Hypothesis 4: There will be a significant difference in the pretest scores and post-test scores of group B [NLP group].
5. Hypothesis 5: There will be a significant difference in the pre-test scores and follow-up scores of group B [NLP group].
6. Hypothesis 6: There will be a significant difference in the post-test scores and follow-up scores of group B [NLP group].
7. Hypothesis 7: There will be no significant difference in the pretest scores and post-test scores of group C [control group].
8. Hypothesis 8: There will be no significant difference in the pre-test scores and follow-up scores of group C [control group].
9. Hypothesis 9: There will be no significant difference in the post-test scores and follow-up scores of group C [control group].
10. Hypothesis 10: There will be a significant difference in the post-test scores of group A and group B.
11. Hypothesis 11: There will be a significant difference in the post-test scores of group B and group C.
12. Hypothesis 12: There will be a significant difference in the post-test scores of group A and group C.

13. Hypothesis 13: There will be a significant difference in the Follow-up scores of group A and group B.
14. Hypothesis 14: There will be a significant difference in the Follow-up scores of group B and group C.
15. Hypothesis 15: There will be a significant difference in the Follow-up scores of group A and group C.

Sample:

Around 700 students were initially part of the study, however, after data cleaning only the valid cases were included and those who had completely filled up the proforma. The total number of students who thus participated in the study were then down to 501.

- 501 Paramedical students of Baroda were considered as samples in this research.
- In this research paramedical field included only physiotherapy, pharmacy, and nursing departments.
- Students from the first-year bachelor's program to master's final year i.e. whose age was from 17 years to 25 years were included in the first phase of the research.
- Students of 3 colleges participated in the research. **Research sites** were:
  - Parul Group of Institute
  - Sigma Group of institutes
  - BITs Education Campus

Sampling technique:

In this research, a multi-phase sampling technique was used. We considered the **entire population** (All registered students studying in physiotherapy, pharmacy, and nursing department from the first year of bachelor's program to masters final year, in the above mentioned five colleges of Baroda) for the first phase i.e., for screening the population.

For the second phase, the **purposive sampling technique** was used, since this research targeted a certain kind of group. i.e., students affected by test anxiety.

Tool:

The tool used was **Test Anxiety Inventory** prepared by Dr. Anjuli Verma and Darshini Shah (2006). It covered a larger domain of effect of test anxiety and stress than existing tools. This tool measured the cumulative effect of test stress and anxiety on students in terms of physiological, emotional, cognitive, and interpersonal effects. It also measured the sources of test stress in terms of parental pressure, peer pressure, and self-pressure.

The tool contained items that measured the negative as well as positive effects of test stress and anxiety on students. It also measured the support given by parents and peers during test time.

Reliability: Cronbach's Alpha was done for finding the reliability. The Alpha for part 1 was.79 and Alpha for part 2 was .81. The Alpha coefficient of the full scale was high .87.

Validity: The validity by the Guilford method was found to be .93

Norms: The norms were constructed.

- **Research Design: Pre-Post Experimental Design (Intervention)**

Matched group design was used in this research. Here research participants were grouped based on their group mean and standard deviation scores that they achieved on Test Anxiety Inventory.

a. Group A - Hypnotherapy [35 participants approximately]
b. Group B - Neurolinguistic Programming (NLP) [35 participants]
c. Group C - Control group. [35 participants]

Procedure: -

The procedure in this research was conducted in three phases:

- Screening phase
- Intervention phase
- Follow up phase

Screening phase:

- "Test Anxiety Inventory" – a tool developed to measure test anxiety by Anjuli Verma and Darshini Shah (2006), was administered on 501 paramedical students.
- Collection of data and analysis of the same to screen the population.
- Selection of the students who scored above average and high in the test anxiety test.

Intervention phase:

- Number of students divided equally into 3 groups, using matched group design. Here they were matched based on group mean and standard deviation scores that they achieved on test anxiety inventory.
- The suggestibility level of the students was checked and those who were found to be highly or moderately suggestible were given preference for participating in the intervention program.
- Conduction of an intervention program using techniques of Hypnotherapy and Neurolinguistic Programming in group A and group B respectively.
- Group C was considered as the Control Group.
    i. Group A - Hypnotherapy [35 participants]
    ii. Group B - Neurolinguistic Programming (NLP) [35 participants]
    iii. Group C - Control group. [35 participants]
- Designing of intervention module.
- Intervention program conducted for 10 sessions.

- Administration of the Test Anxiety test post-intervention program again.
- A comparison of the result was done and the effectiveness of the technique in dealing with test anxiety was checked.

Follow up phase

- This test anxiety test was conducted again as a follow up after 2 months to check whether the effect persisted beyond interventions

Statistical tests conducted in the study:

Summary:

Around 700 students were initially part of the study, however, after data cleaning only the valid cases were included and those who had completely filled up the proforma. The total number of students who thus participated in the study were then down to 501.

There were 90 questions in the proforma with 4 as a maximum score for each question. The higher the score more was the anxiety level. The total maximum score therefore was 360. The students with a score of 197 and above were 105 in number and these were randomly put into these 3 groups – NLP group, Hypnosis group, and Control group (35 students in each group). Considering drop-outs from the study, 35 students were considered in each group. All the 105 students were followed-up after a month of intervention to access the effect of intervention – whether sustained or not.

Descriptive Statistical analysis was conducted on their demographic variables like Gender, Age, Birth Order, Religion, Education of Father and Mother, Occupation of Father and Mother, Average Score of previous exams, Score of the last exam, and Score-Category (Mild, Moderate, Severe).

Chi-square test was run to check if there was any association between Scores and the demographic variables.

To compare Score-Category between two independent groups (NLP – Control and Hypnosis – Control), **Mann-Whitney test** was conducted.

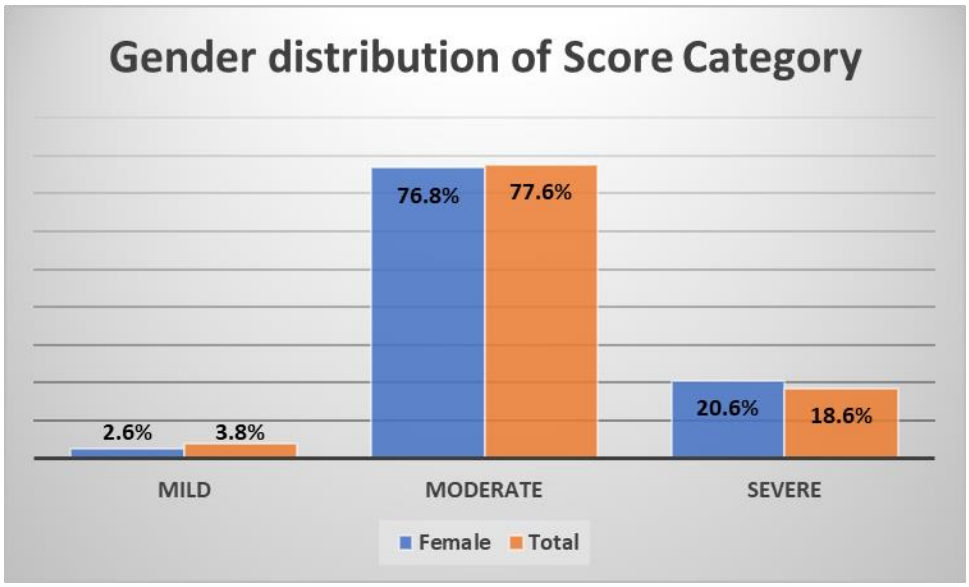
To compare within a paired group (in both NLP and Hypnosis), **Wilcoxon test** was conducted. The test was conducted to see whether there was a significant difference in Score-Category of Pre & Post data, and similarly in Post & Follow-up data.

Statistical Analysis:

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age of the student	501	17	21	18.49	.954
Average Score in the previous exams (%)	501	36.00%	90.00%	69.76%	9.11%
Score in the last exam (%)	501	20.00%	95.00%	64.37%	12.27%

- The Score-Category (mild, moderate, severe) showed significant association with the Gender (male, female) of the student. In mild and moderate categories, male students were found more than female students; while in severe category females were more than males.

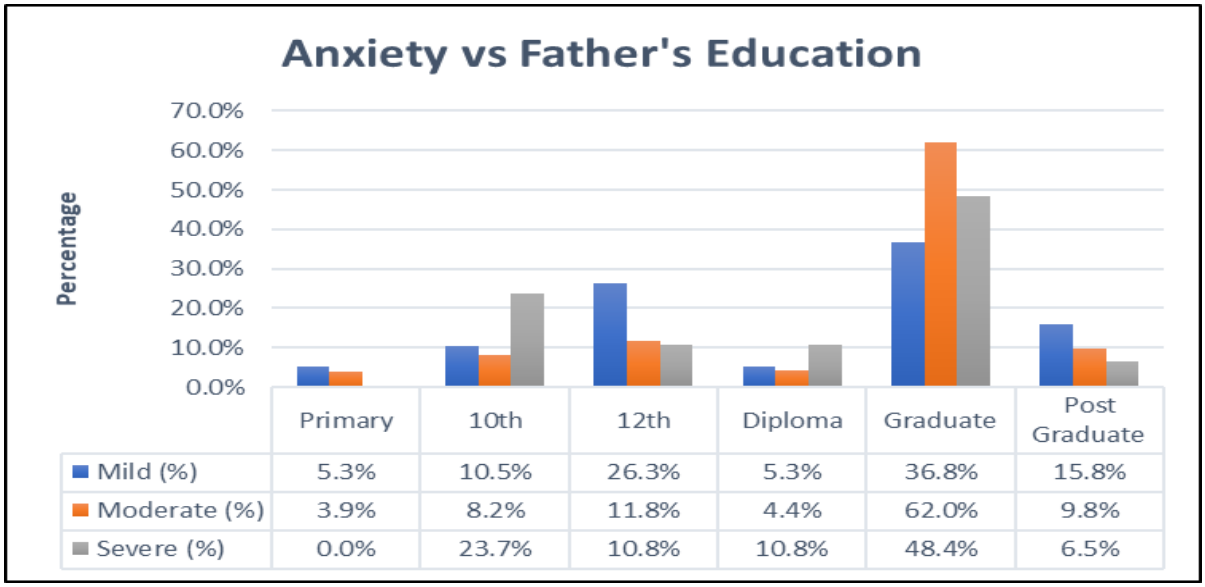
Gender				
	Mild	**Moderate**	**Severe**	**Total**
Male	9	95	14	118
Female	10	294	79	383
Total	19	389	93	501

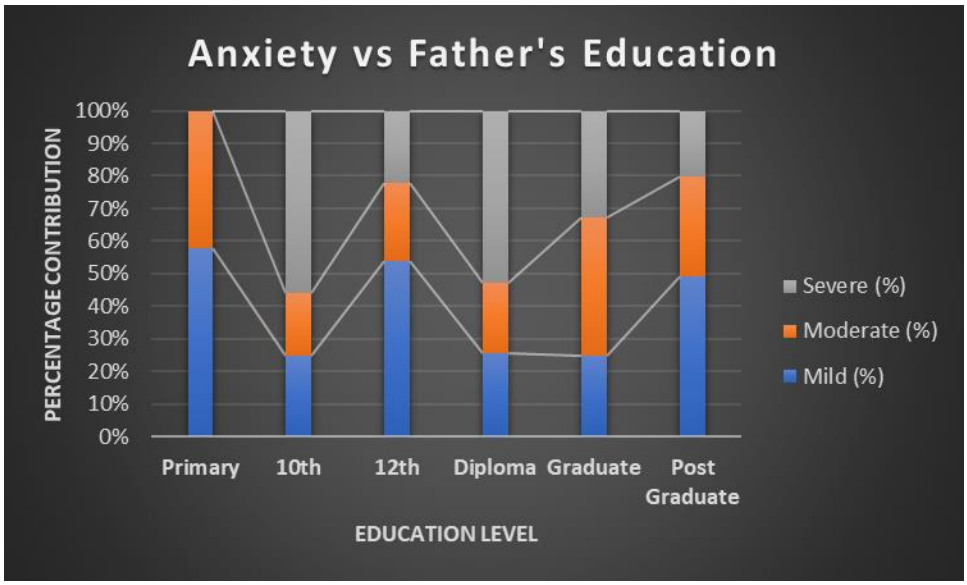


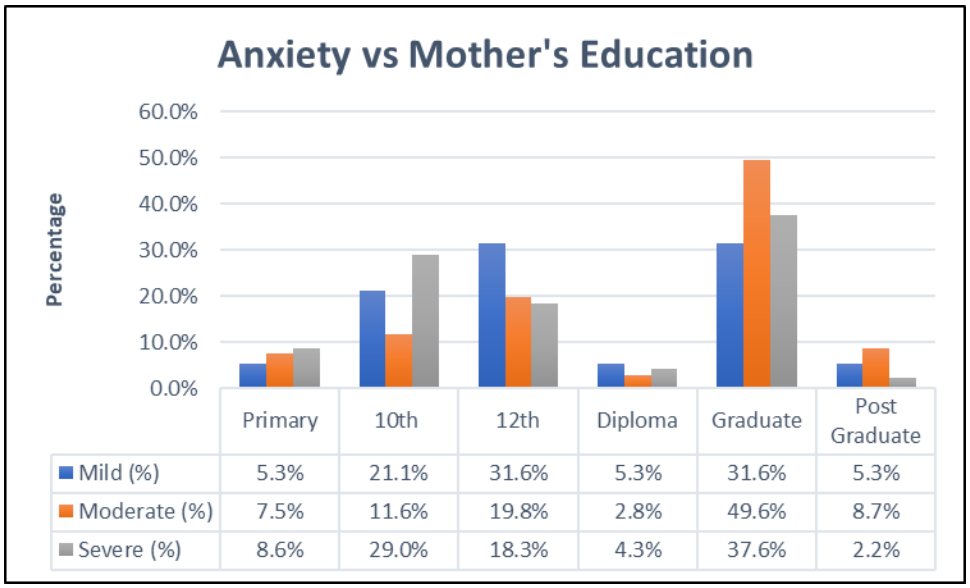
- The Score-Category (mild, moderate, severe) showed significant association with Education of the Father and Education of the Mother of the student. It was seen that the more the education of the father and the mother, the more was the increase in the test anxiety score in their children. Mostly, the parents were Graduates in the sample.

Education of Father				
	Mild	**Moderate**	**Severe**	**Total**
Primary	1	15	0	16
10th	2	32	22	56
12th	5	46	10	61
Diploma	1	17	10	28
Graduate	7	241	45	293
Post Graduate	3	38	6	47
Total	19	389	93	501

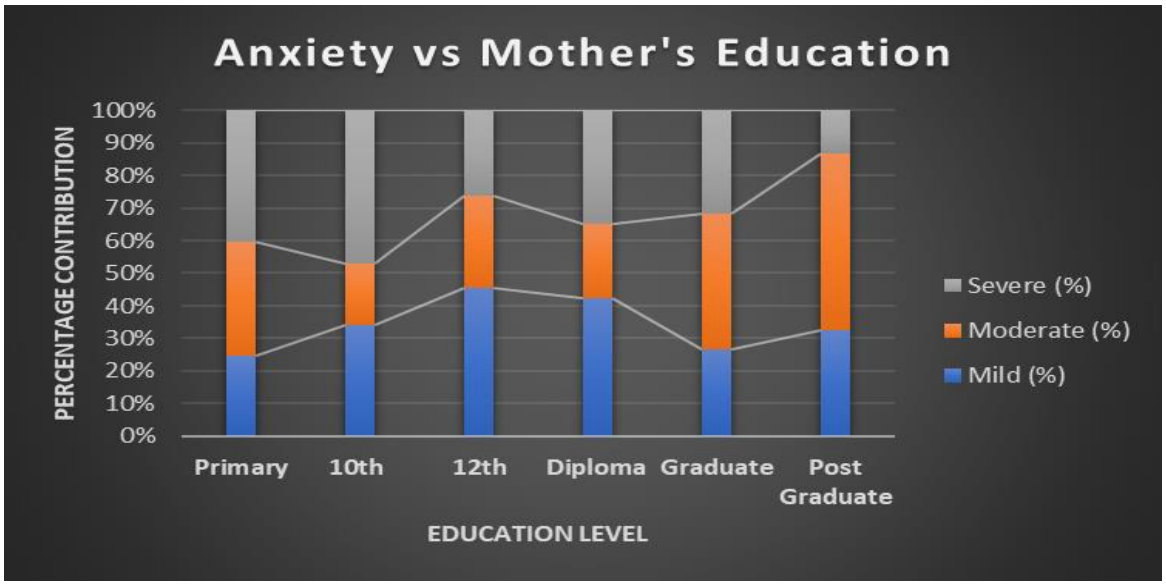
Education of Mother				
	Mild	**Moderate**	**Severe**	**Total**
Primary	1	29	8	36
10th	4	45	27	76
12th	6	77	17	100
Diploma	1	11	4	16
Graduate	6	193	35	234
Post Graduate	1	34	2	37
Total	19	389	93	501





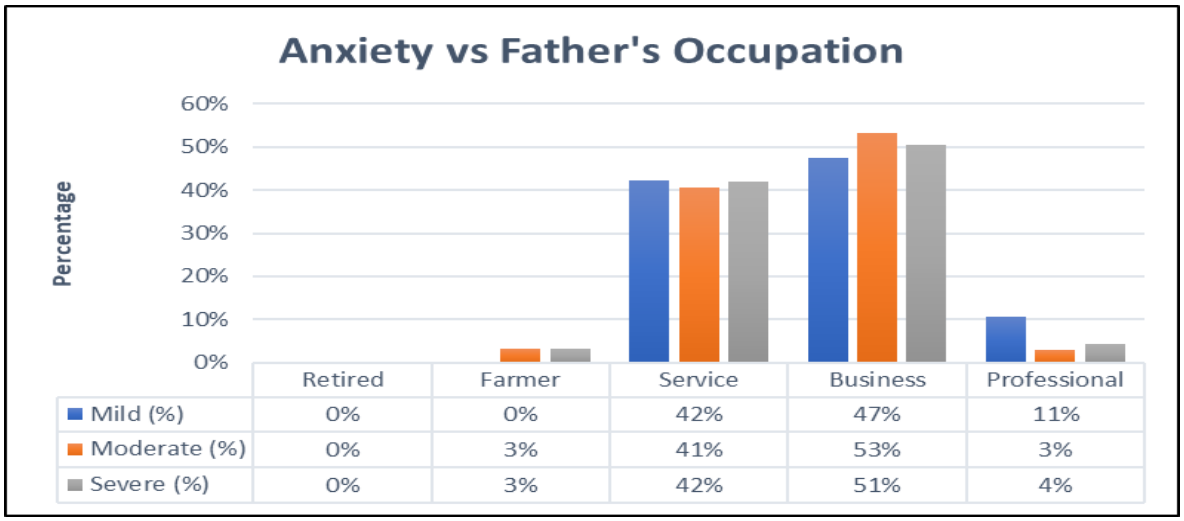


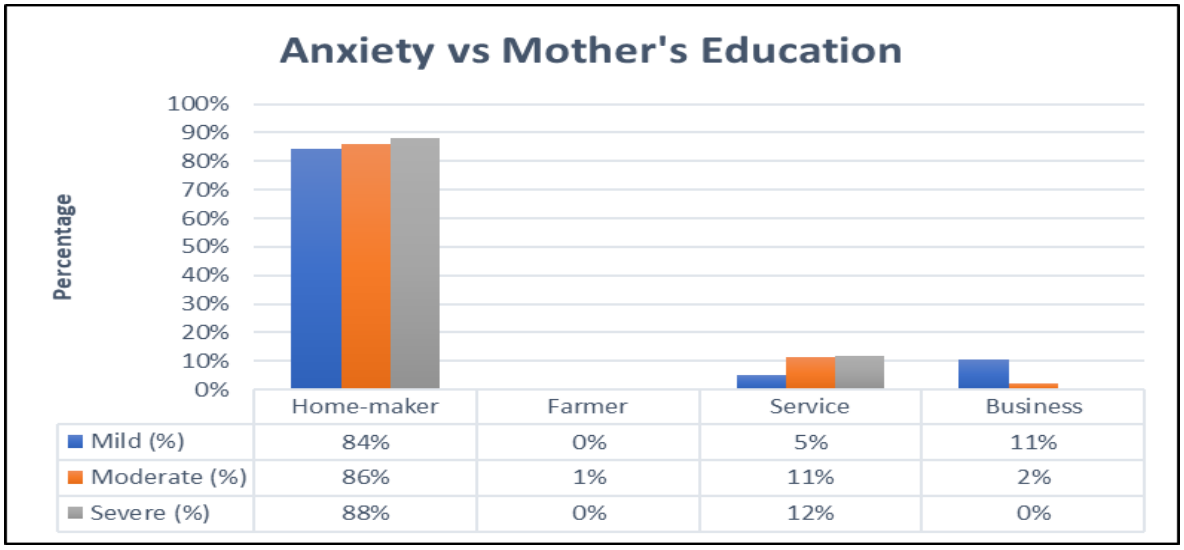
	Primary	10th	12th	Diploma	Graduate	Post Graduate
Mild (%)	5.3%	21.1%	31.6%	5.3%	31.6%	5.3%
Moderate (%)	7.5%	11.6%	19.8%	2.8%	49.6%	8.7%
Severe (%)	8.6%	29.0%	18.3%	4.3%	37.6%	2.2%



- The Score-Category (mild, moderate, severe) did not show significant association with Occupation of the Father and Occupation of the Mother of the student.

Occupation of Father				
	Mild	**Moderate**	**Severe**	**Total**
Retired	0	1	0	1
Farmer	0	12	3	15
Service	8	158	39	205
Business	9	207	47	263
Professional	2	11	4	17
Total	19	389	93	501
Occupation of Mother				
	Mild	**Moderate**	**Severe**	**Total**
Home-maker	16	335	82	433
Farmer	0	2	0	2
Service	1	44	11	56
Business	2	8	0	10
Total	19	389	93	501





Chi-square test was carried out between the Score-Category and the demographic variables. It showed whether there was any significant association between these variables. This test was carried out on the 501 students. Below is the table with the summary of those tests.

Variables	**P-Value**	**Interpretation**
Score Category & Gender of the student	0.007	Highly associated
Score Category & Education of the Father	<0.001	Very Highly associated
Score Category & Education of the Mother	0.004	Highly associated
Score Category & Occupation of the Father	0.803	Not associated
Score Category & Occupation of the Mother	0.123	Not associated

Group A: Hypnotherapy (n=35)

Group B: NLP (n=35)

Group C: Control Group (n=35)

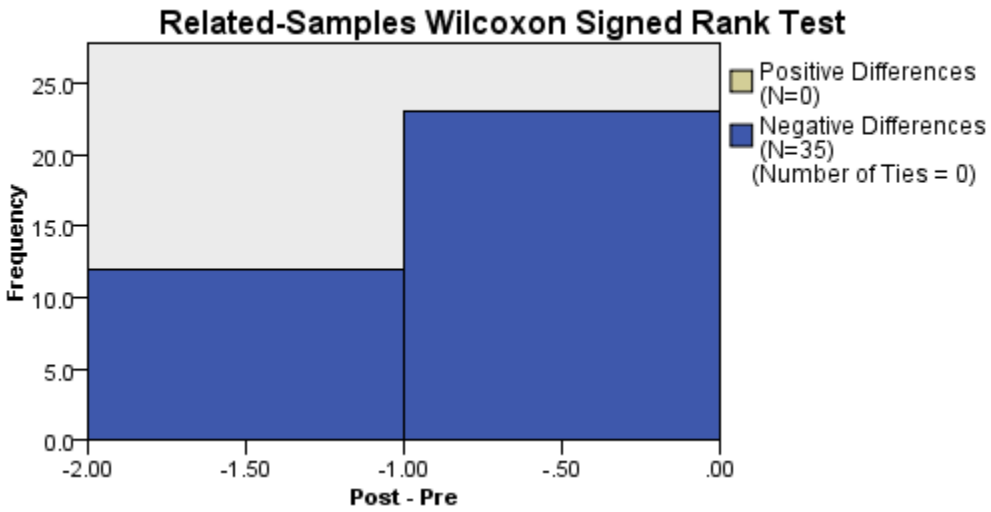
Below are the null hypotheses of the study:

To compare within a paired group (in both NLP and Hypnosis), **Wilcoxon test** was conducted. The test was conducted to see whether there was a significant difference in Score-Category of Pre & Post data, and similarly in Post & Follow-up data.

1. Hypothesis 1a: In group A, there is no significant difference in the Pre and Post exam scores.

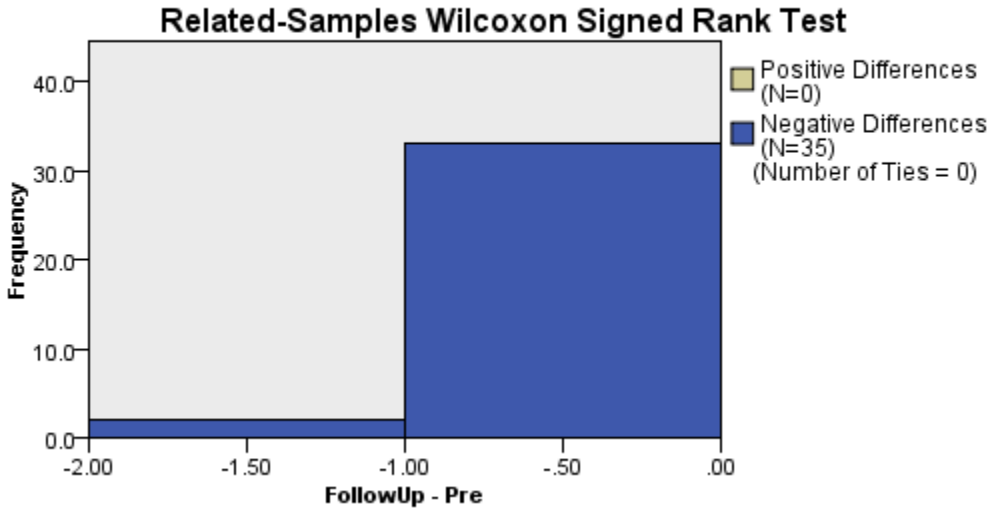
   Hypothesis 1b: In group A, there is no significant difference in the Pre and Follow-up exam scores.

   Hypothesis 1c: In group A, there is no significant difference in the Post and Follow-up exam scores.



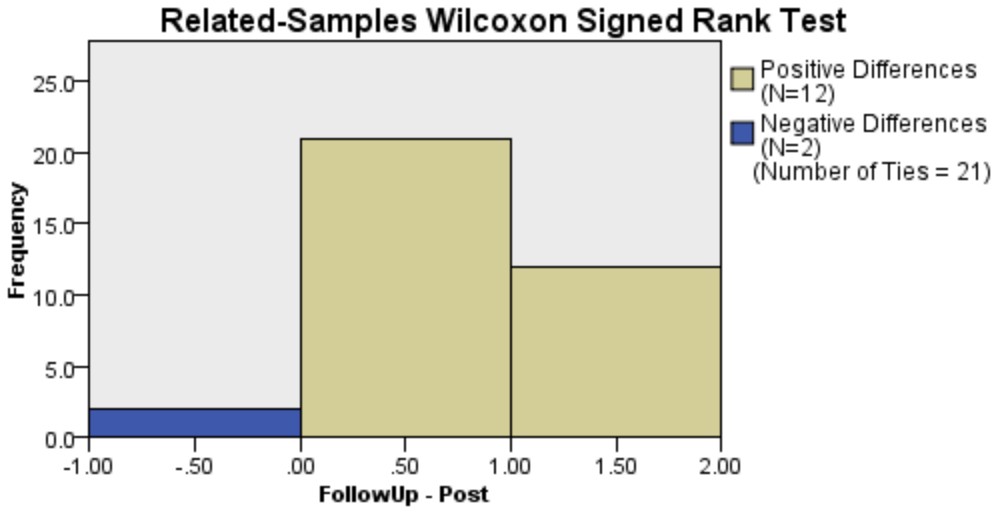
As we can see, in the above graph, all 35 students' score categories (mild=1, moderate=2, severe=3) reduced in Post when compared to Pre. The above graph shows the number of students whose score category has reduced by 1 rank (n=23) and reduced by 2 rank (n=12).

Related-Samples Wilcoxon Signed Rank test gave **P<0.001** and therefore, we reject Hypothesis 1a and conclude that **there is a highly significant difference in the Pre and Post Score categories in Hypnotherapy group and it is a desirable difference.** It means that all the subjects showed decreased anxiety levels after the Hypnotherapy sessions. The intervention did make a significant difference in the anxiety scores.



As we can see, in the above graph, all 35 students' score categories reduced in Follow-up when compared to Pre. Most of the students have reduced the score category by 1 rank.

Related-Samples Wilcoxon Signed Rank test gave **P<0.001** and therefore, we reject Hypothesis 1b and conclude that **there is a highly significant difference in the Pre and Follow-up Score categories in Hypnotherapy group and it is a desirable difference.** It means that intervention did help all 35 students as they had a reduced score category in Follow-up when compared to Pre. Thus, exhibiting that hypnotherapy had a positive effect in the reduction of exam anxiety among students.



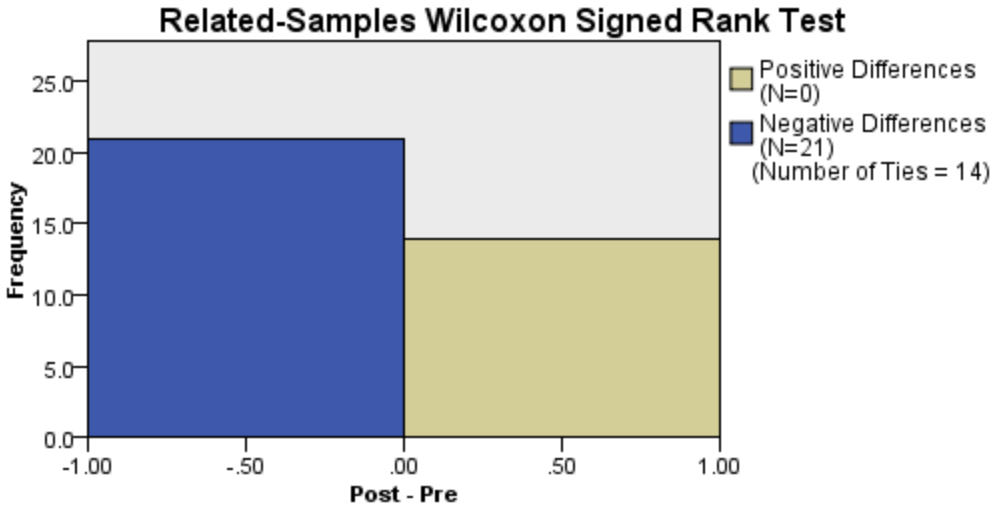
As we can see, in the above graph, only 2 students' score category (in blue color) reduced in Follow-up when compared to Post while 12 students' scores (bar on the right) increased in Follow-up when compared to Post and 21 students' score category (middle bar) had no change (tie).

Related-Samples Wilcoxon Signed Rank test gave **P=0.008** and therefore, we reject Hypothesis 1c and conclude that **there is a highly significant difference in the Post and Follow-up Score categories in the Hypnotherapy group, however, the result is NOT a desirable or a positive difference.** It means that though there was a significant difference but it was not what we would have liked. Thus, it shows that hypnotherapy does not have a sustained effect on students in the reduction of exam anxiety as the anxiety increased among 12 students.

2. Hypothesis 2a: In group B, there is no significant difference in the Pre and Post exam scores.

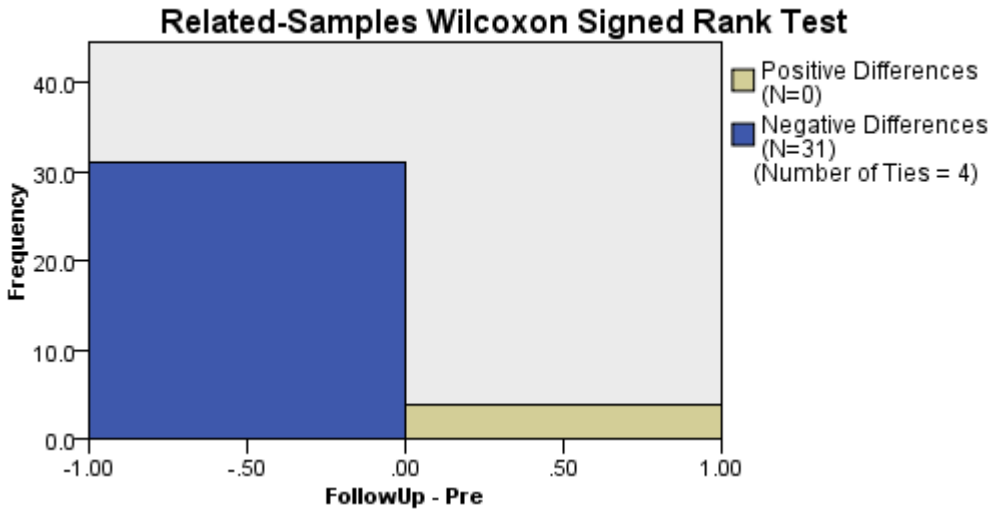
   Hypothesis 2b: In group B, there is no significant difference in the Pre and Follow-up exam scores.

   Hypothesis 2c: In group B, there is no significant difference in the Post and Follow-up exam scores.



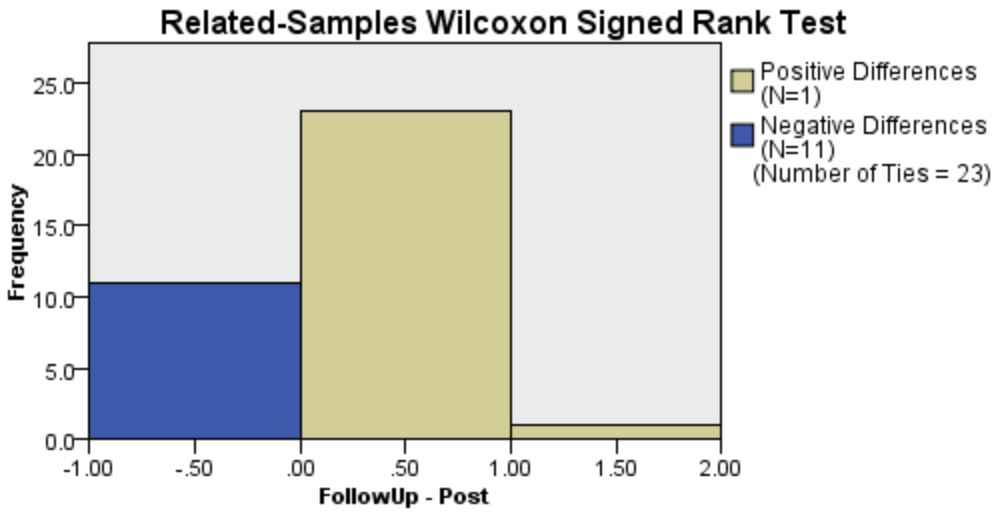
As we can see, in the above graph, 21 students' score category reduced in Post when compared to Pre while 14 students' score category had no change.

Related-Samples Wilcoxon Signed Rank test gave **P<0.001** and therefore, we reject Hypothesis 2a and conclude that **there is a highly significant difference in the Pre and Post Score categories in the NLP group and it is a desirable difference.** It means that though not all had the positive effect of NLP, still significant number of students had a reduction in anxiety due to the intervention in the NLP group.



As we can see, in the above graph, 31 students' score category reduced in Follow-up when compared to Pre while 4 students' score category did not change.

Related-Samples Wilcoxon Signed Rank test gave **P<0.001** and therefore, we reject Hypothesis 2b and conclude that **there is a highly significant difference in the Pre and Follow-up Score categories in the NLP group and it is a desirable difference.** It means that the positive effect of the intervention was still evident in almost all the students.



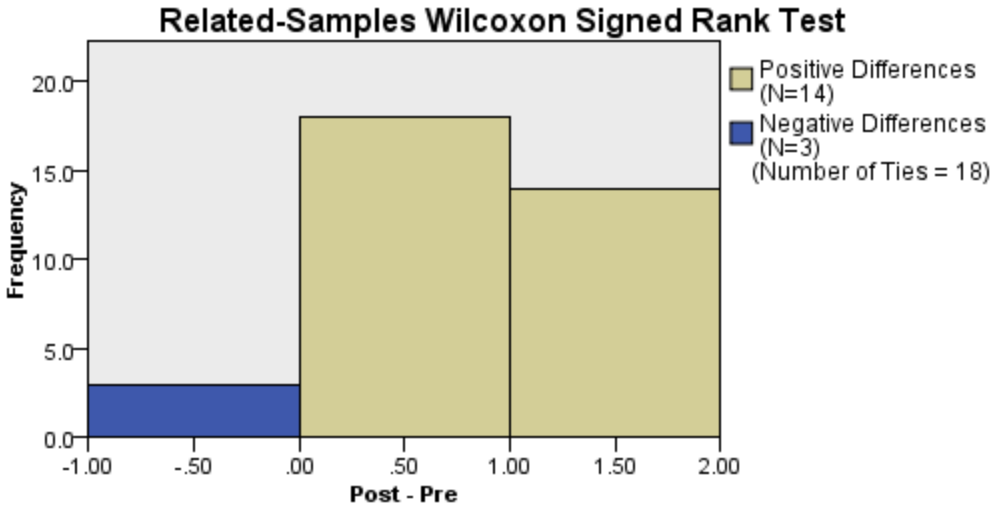
As we can see, in the above graph, 11 students' score category reduced in Follow-up when compared to Post while only 1 student's score category increased in Follow-up when compared to Post and 23 students' score category had no change at all.

Related-Samples Wilcoxon Signed Rank test gave **P=0.004** and therefore, we reject Hypothesis 2c and conclude that **there is a highly significant difference in the Post and Follow-up Score categories in the NLP group and it is a desirable difference.** It means that the effect of NLP was sustained even after the intervention and it further reduced the anxiety among 11 students.

3. Hypothesis 3a: In group C, there is no significant difference in the Pre and Post exam scores.

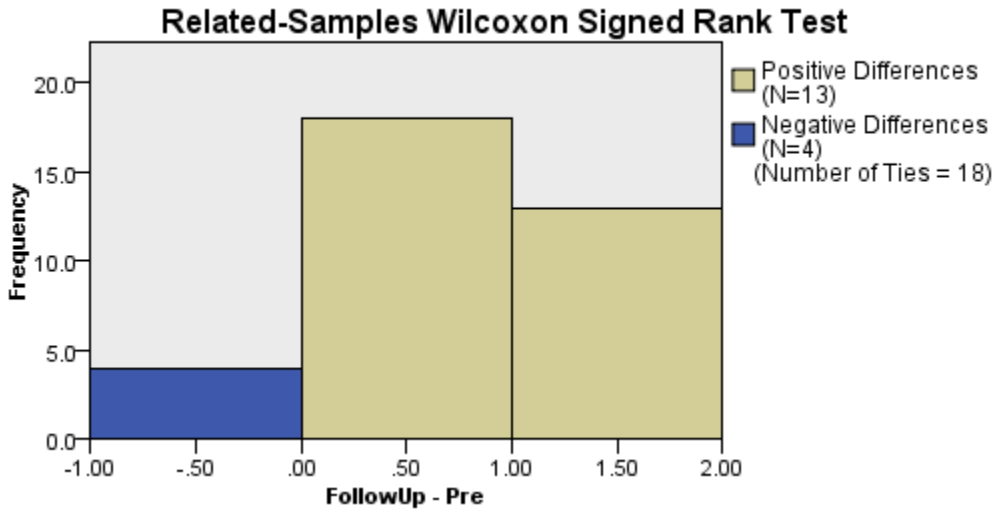
   Hypothesis 3b: In group C, there is no significant difference in the Pre and Follow-up exam scores.

   Hypothesis 3c: In group C, there is no significant difference in the Post and Follow-up exam scores.



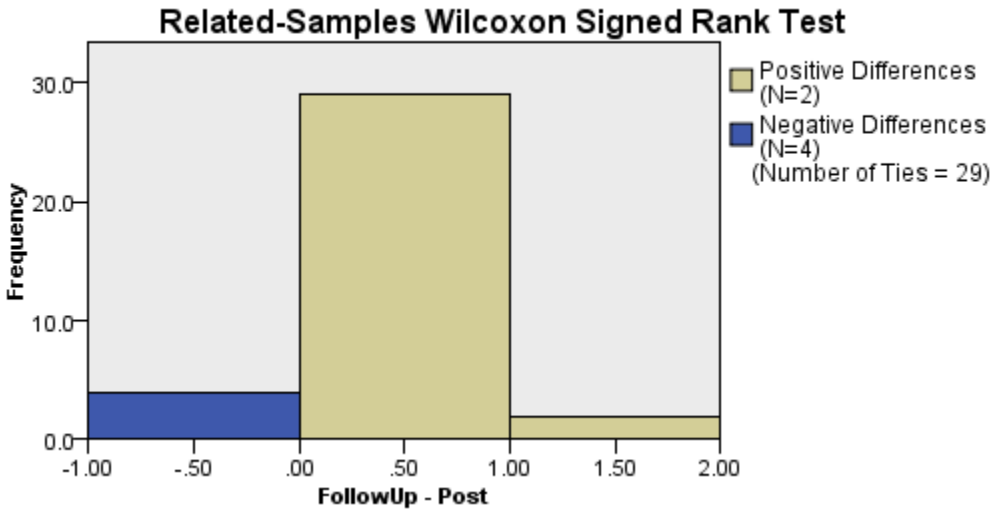
As we can see, in the above graph, only 3 students' score category (in blue color) reduced in Post when compared to Pre while 14 students' score category (right bar) increased in Post when compared to Pre and 18 students' score category (middle bar) did not show any change in the score category.

Related-Samples Wilcoxon Signed Rank test gave **P=0.008** and therefore, we reject Hypothesis 3a and conclude that **there is a highly significant difference in the Pre and Post Score categories in the Control group, however, the result is NOT a desirable or a positive difference.**



As we can see, in the above graph, only 4 students' score category (blue bar) reduced in Follow-up when compared to Pre while 13 students' score category (right bar) increased in Follow-up when compared to Pre.

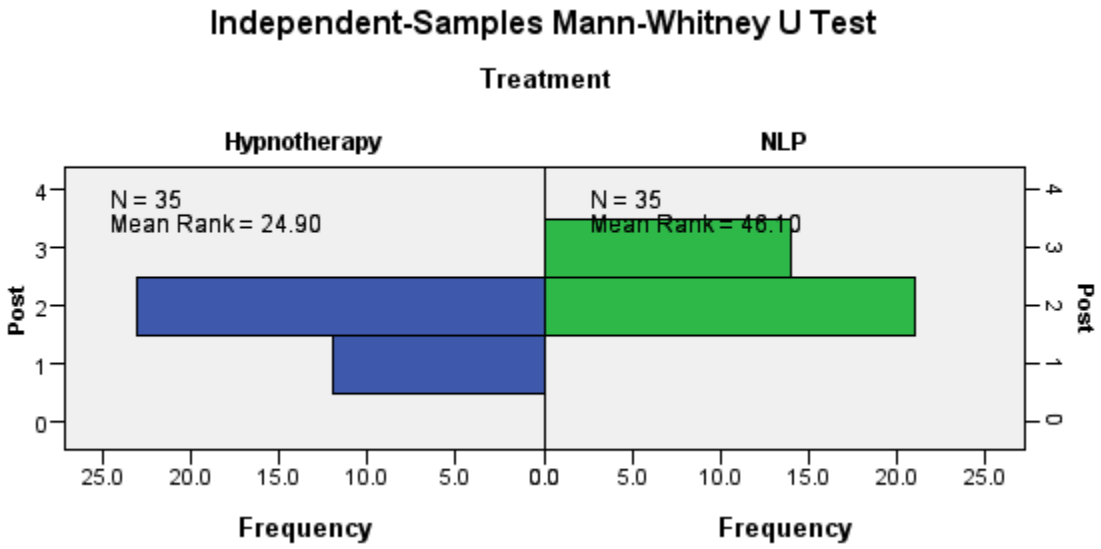
Related-Samples Wilcoxon Signed Rank test gave **P=0.029** and therefore, we reject Hypothesis 3b and conclude that **there is a significant difference in the Pre and Follow-up Score categories in the Control group, however, the result is NOT a desirable or a positive difference.**



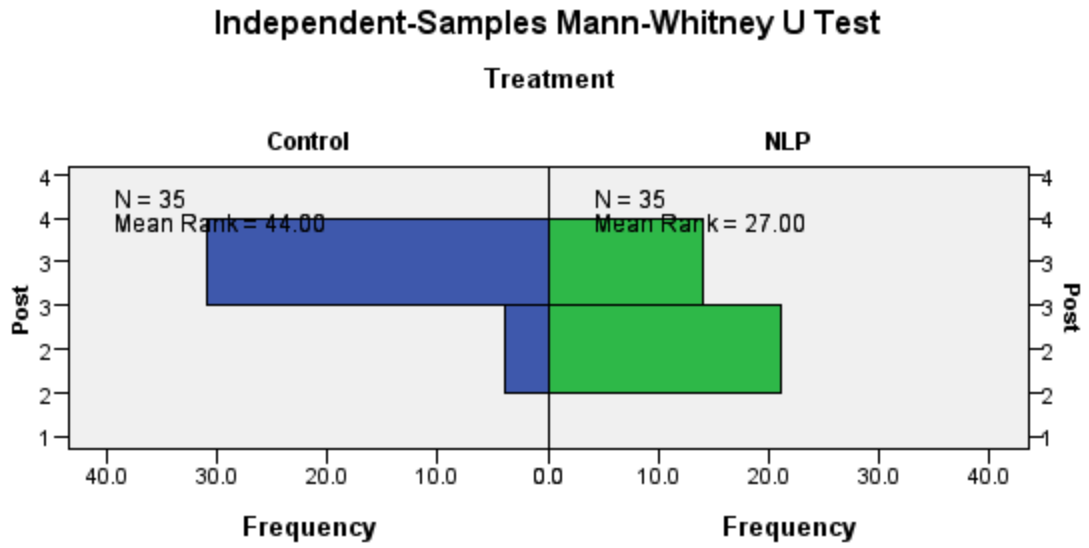
As we can see, in the above graph, only 4 students' score category (blue bar) reduced in Follow-up when compared to Post while 2 students' score category (right bar) increased in Follow-up when compared to Post and 29 students' score category (middle bar) did not show any change in the score category.

Related-Samples Wilcoxon Signed Rank test gave **P=0.414** and therefore, we do not reject Hypothesis 3c and conclude that **there is a non-significant difference in the Post and Follow-up Score categories in the Control group.**

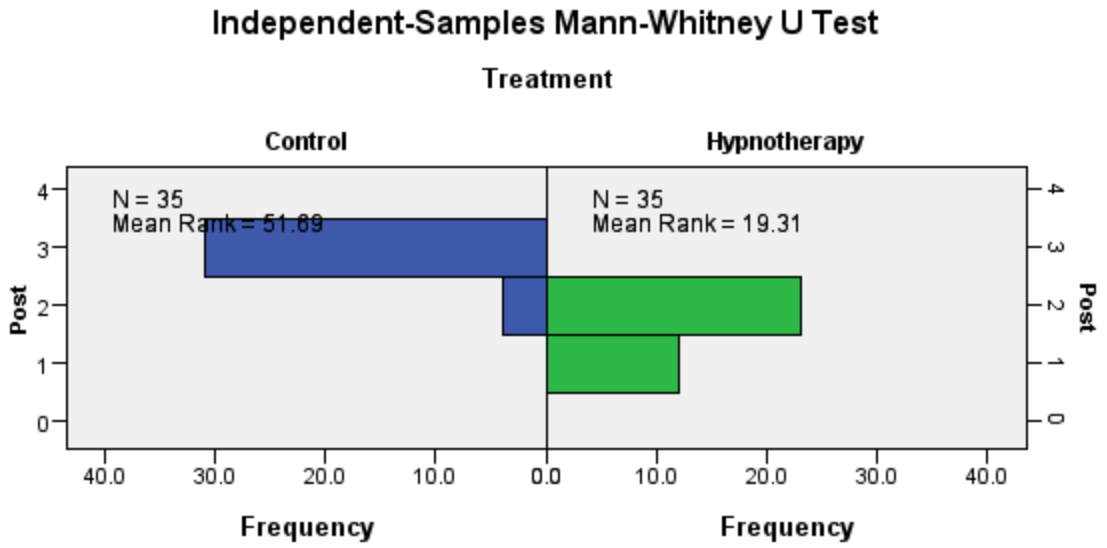
4. Hypothesis 4a: In Post scores, there is no significant difference in Groups A and B.
   Hypothesis 4b: In Post scores, there is no significant difference in Groups B and C.
   Hypothesis 4c: In Post scores, there is no significant difference in Groups A and C.



Independent-Samples Mann-Whitney U test gave **P<0.001** and therefore, we reject Hypothesis 4a and conclude that **there is a highly significant difference in the Post score category of Hypnotherapy and NLP groups with the score category of NLP group on the higher side.** It means that the NLP group had more anxiety score categories when compared to the Hypnotherapy group. The above graph shows the number of students (horizontal axis) with the score category (vertical axis).

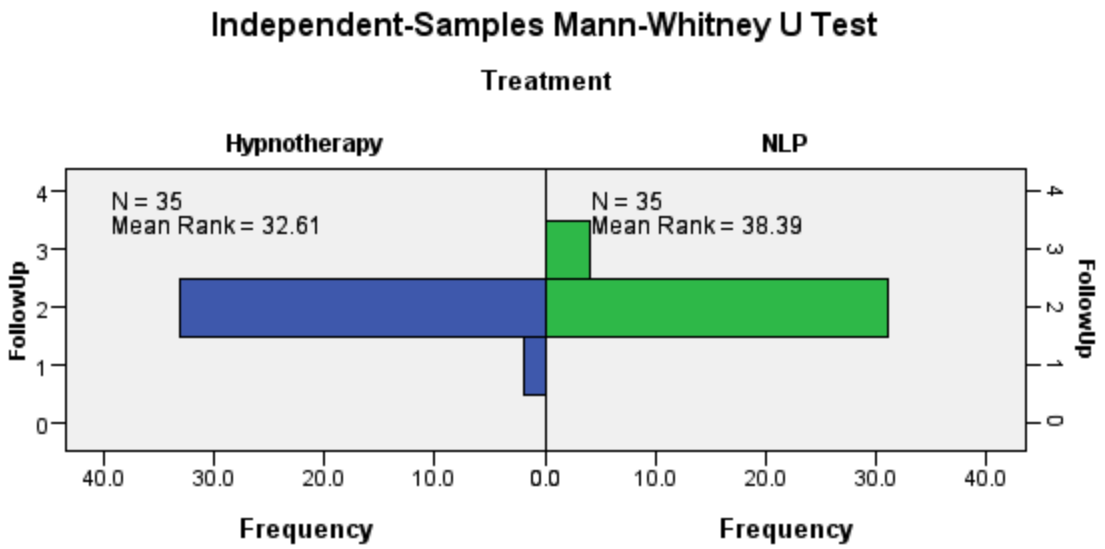


Independent-Samples Mann-Whitney U test gave **P<0.001** and therefore, we reject Hypothesis 4b and conclude that **there is a highly significant difference in the Post score category of Control and NLP groups with the score category of Control group on the higher side.** It means that immediately after the intervention, the Control group had more students with higher anxiety score categories.

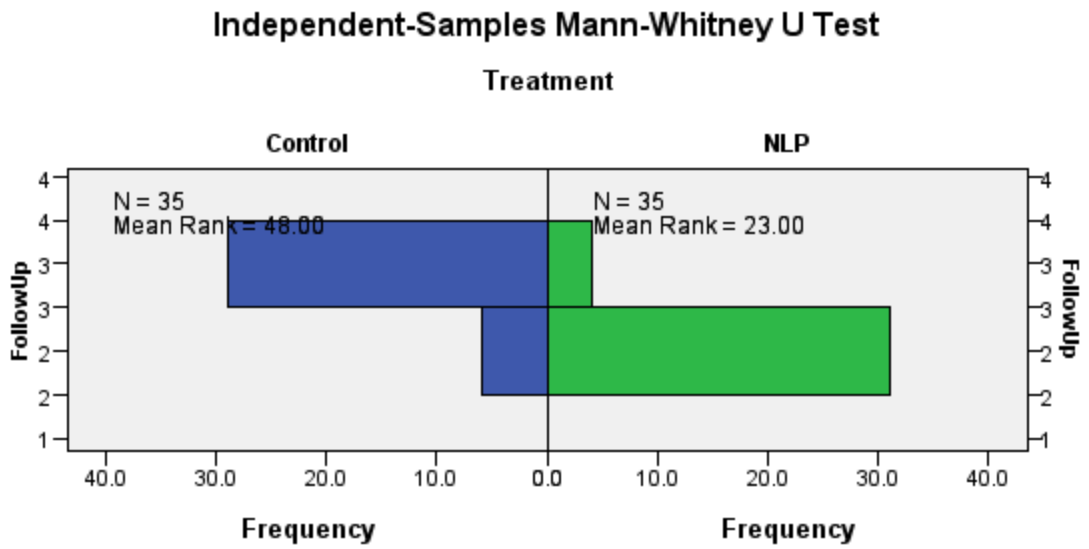


Independent-Samples Mann-Whitney U test gave **P<0.001** and therefore, we reject Hypothesis 4c and conclude that **there is a highly significant difference in the Post score category of Control and Hypnotherapy groups with the score category of Control group on the higher side.** It means that the Control group had more anxiety score category students when compared to the Hypnotherapy group.

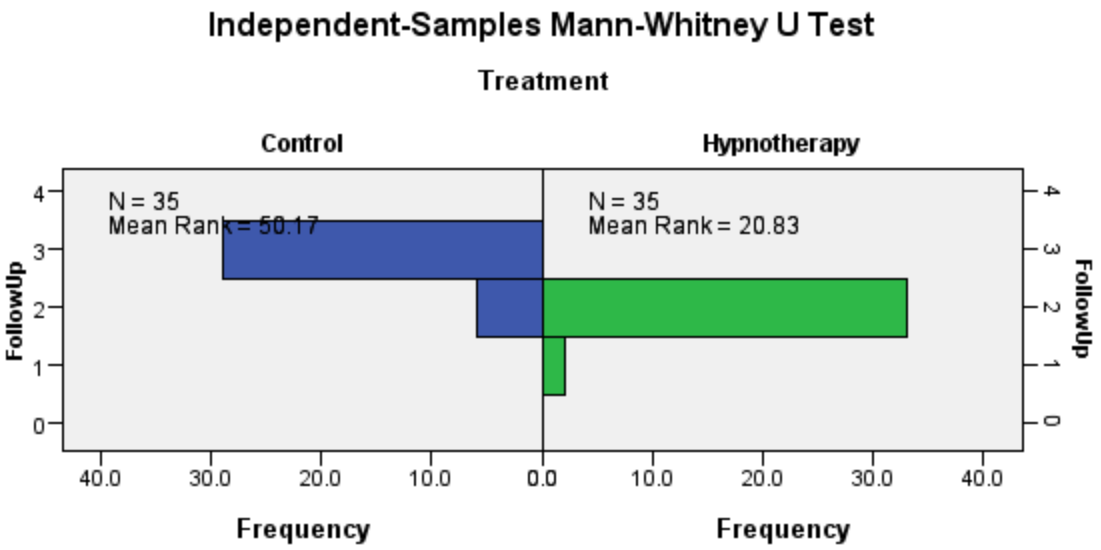
5. Hypothesis 5a: In Follow-up scores, there is no significant difference in Groups A and B.
   Hypothesis 5b: In Follow-up scores, there is no significant difference in Groups B and C.
   Hypothesis 5c: In Follow-up scores, there is no significant difference in Groups A and C.



Independent-Samples Mann-Whitney U test gave **P<0.015** and therefore, we reject Hypothesis 5a and conclude that **there is a highly significant difference in the Follow-up score category of Hypnotherapy and NLP groups with the score category of NLP group on the higher side.** It means that in the NLP group, there were students with more anxiety score categories when compared with the Hypnotherapy group.



Independent-Samples Mann-Whitney U test gave **P<0.001** and therefore, we reject Hypothesis 5b and conclude that **there is a highly significant difference in the Follow-up score category of Control and NLP groups with the score category of Control group on the higher side.** Therefore, there were more students with anxiety score categories in the Control group when compared to the NLP group.



Independent-Samples Mann-Whitney U test gave **P<0.001** and therefore, we reject Hypothesis 5c and conclude that **there is a highly significant difference in the Follow-up score category of Control and Hypnotherapy groups with the score category of Control group on the higher side.** It means that in the Follow-up data, the Control group had more students with high anxiety score categories compared to the Hypnotherapy group.

LIMITATIONS:

- This study focused on universities and institutions in and around Vadodara only.
- In this research, only paramedical students were besieged and then were included in intervention programs.
- Students comfortable with the English language were only allowed to participate in this research.
- Students having test anxiety at above-average or higher level were included in the intervention program. Whereas it all depends on the thought process and tolerance level of a person.
- Conduction of the session at regular intervals required regular follow up and sometimes because of the exams, lecture timing, or other cultural activity it was a task in itself to gather the students at their scheduled time.
- The concept of hypnosis and NLP required at least a couple of sessions to clear the misconception so people who had test anxiety had to be convinced for an intervention

SUGGESTIONS AND FUTURISTIC IMPLICATIONS

- This research majorly focused on paramedical students. This kind of intervention can be done on students giving board exams as there is a lot of hype for board exams. More so, Interventions like this can be beneficial to the students of 8^{th}, 9^{th} and above. Because they are still shaping themselves, whereas college-going students have already made up their mind that they have test anxiety and cannot be helped.
- A combination of hypnotherapy and NLP can be used. It can be even more effective. As it would have targeted the conscious as well as the unconscious mind for suggestions.
- Hostel set up can be helpful so that no time is wasted to gather students and co-ordinate sessions.
- Intervention programs could include parents, teachers, peers, and other sources of stress in order to make it more holistic.
- Breathing exercises should be made mandatory, as one of the observations was that for some reason, students tend to get hyper very easily.
- Music therapy can be also be clubbed with psychotherapy, it does wonders.

- Awareness about anxiety needs to be spread. There is no clarity about the difference between feeling nervous during or before an exam and having test anxiety. If parents are aware of the difference, they can get alarmed and can seek help before the situation gets worse.

Exam or test as a concept should be understood well. It's ok to fail. Too much importance is given to any kind of test. So much so that if a student is not able to perform well on an exam, he thinks that life is just not worthwhile. Committing suicide seems simpler than facing an exam. Students willing to work on their test anxiety can be included in the intervention group so that if there is a desire to change, they can be helped quickly. As it is said ‘ if you know your problem well, half the problem is already solved.

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