

**Test Anxiety Effects on Student's Performance: A Psychological Analysis at Secondary School Level in Punjab, Pakistan**

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Test anxiety is fear, nervousness, and uneasiness for examination. The students who appear in exams usually face these conditions which may be physical, emotional, or behavioral. Mathematics is a compulsory subject till matriculation, so every student faces some anxiety during mathematics class and tests. The foremost purpose of this study is to explore the relationship of mathematics test anxiety with student's performance at the secondary school level in Punjab. For the assessment of anxiety, the research questionnaire was adapted through taking guidelines from Mathematics Anxiety Rating Scale (MARS; Richardson & Suiem, 1972). The questionnaire consists of two parts; one question on obtained marks in 9th class mathematics subject in the board examinations and the other portion comprising of 30 questions to rate the mathematics test anxiety. A sample of 260 students was selected through random sampling. Based on data analysis, it was found that there was a strong negative relationship between test anxiety and students' performance in mathematic. This relationship shows that if test anxiety increases, performance will decrease. Further detailed analysis showed that there was a highly significant correlation between the physical and emotional factors of anxiety and achievement of students. Results were consistent with previous researches. The study recommends practical sessions on concept clearance for students, school teachers, and confidence building to overcome anxiety. It is recommended that social and academic guidance for students is the duty of the parents and teachers.

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The present research deals with the area of educational psychology. Educational psychology is the study of the teaching-learning process, the student, teacher, as well as the knowledge that will transform to the next generation. The whole process of transforming knowledge is called education. Testing is an essential part of the educational process. All the tests and examinations are scored according to the performance of test takers. The test results decide the fate of a student. Test anxiety is a major hindrance for many people to achieve a real educational purpose.

Mathematics is the knowledge of arithmetic or figures. In this world, mathematics knowledge is as necessary as food or breathing for life. Approximately in every sphere of life, math play a basic role to fulfill the human necessities in life. Anxiety is experienced when our body tells us that we feel defenseless and the system is not ready to face something. From walking normally for the first time to childhood or adolescence, every one faces different forms of anxiety and is influenced by behavior problems, often dramatically and difficult to explain (Aurelius, 2012).

Students face two types of anxiety, a general test anxiety, and anxiety of mathematics, usually witnessed at school. The psychosomatic and physiological research and neuroscience highlight the dangerous effects of this anxiety. Because of the growing concern about the educational achievements of students in the community, parents play a crucial role in ensuring that children have access to the development of a firm approach to education, especially in math. But now the family structure has broken down and parents feels pressure for their child's performance. To resolve this issue, in this study, we focused on mathematics test anxiety effect on the performance of students in the ninth grade.

### **Test Anxiety**

Anxiety is body's natural response to stress. It is a physiological condition faced by the people in terms of experience of extreme stress, nervousness and discomfort through /after or before taking the test.

### **Academic Performance**

Academics performance is usually calculated by tests, exams, or constant evaluation; however, there is no universal consensus on how it is

best assessed, in terms of which aspects are most significant in practical information such as skillfulness or declarative information. In this study, performance is defined as marks that the students obtained in math subject of 9th class in Board of Intermediate & Secondary Education, Bahawalpur annual exams, 2018.

### **Review of the Related Literature**

We feel anxiety in our life on various occasions. It may be about our health, finances, or family matters. There are many kinds of anxieties; minor anxiety that occurred in a specific event but goes away in a short period, the other is more penetrating anxiety can last approximately for six months and can get worse if it is not properly treated (Huberty, 2009; Nolting, 2000).

There are two major types of anxiety that are relevant to understand the structure of anxiety.

**Trait Anxiety** means chronic and persistent anxiety over the situation and based on certain events. Anxiety for the multiplicity of sources of anxiety disorders, including generalized anxiety and fear from the community (Huberty, 2009).

**State Anxiety** is “anxiety that occurs in certain situations and generally has an obvious trigger point. All who have a high state of anxiety will not necessarily feel high trait anxiety, if trait anxiety is high state anxiety also will be high (Huberty, 2009).

Students can face many forms of anxiety. Sometimes panic, anxiety, or fear, a person may feel pain in the chest or shortness of breath, rapid heartbeat and/or stomach fullness. Anxiety can become excessive such that it becomes impossible to stop thoughts and behaviors that cannot be controlled (Spark, 2011).

The anxiety is manifested in three ways; cognitively, physically and attitudinal. Often symptoms are such as nervousness, increased trafficking in mind, and redness of the skin, clear in these three fields. There are two main causes of test anxiety. One of them the necessary time to prepare tests due to mismanagement; failure is not due to bad study habits but less learning materials and text. Some other reasons are uncertainty about the performance of students in exams, friend's performance competition, and penalties of failure. (Mitchell, 2007).

In anxiety one suffers from decreased performance in a test that is often result of test anxiety. Anxiety and discomfort is generally quite a

phenomenon that occurs before, during, or after the test (Hanoski, 2002). Test concern can be a source for multiple issues such as difficulty in students, for example, the stomach annoying, loss of concentration, fear, irritation, inflammation, and hopelessness (Zeidner, 2000).

In test anxiety, students experience the rush of adrenaline before and during the test. Adrenaline blocks the brain and their thinking reactions like flight/fight also block. Students can be taught how to manage and improve from the burst of adrenaline. In near the beginning of the fifties, exam anxiety as the exceptional features that can be calculated in the future on one domain scales (Sarason, 1961). Sarason (1961) predicted that the interference concerns faced in terms of evaluating the possibility of a combination of " increased physiological action " and " musings indignation ".

### **Symptoms of Anxiety**

Anxiety can be experienced in multiple forms or types of symptoms such as cognitive symptoms, physical symptoms, behavioral or emotional symptoms and psychological symptoms, a brief description of these types of symptoms is as follows.

**Cognitive Symptoms.** The researchers suggested that the cognitive factor may be a collection of 1) nervousness plus panic of failure; 2) being anxious about the transaction, the lack of anticipation, self-interest, and escape perception, thinking irrelevant and 3) thinking test is irrelevant.

**Physical Symptoms.** Physical symptoms include sweating, shaking, rapid heart rate, dehydrated lips, slight vomit, and bodily illness.

**Behavioral and Emotional Symptoms.** Behavioral or emotional symptoms include restlessness, escaping, abuse of drugs that are used and "tranquilizers" like addiction and drinks, stiffness, difficulty concentrating and race of feelings.

**Psychological Symptoms.** There can be a multitude of psychological symptoms including hopelessness, disappointment, low self-esteem, irritation, dissatisfaction and panic.

### **Mathematics Anxiety**

Mathematics anxiety is a serious obstacle for many children at all grade levels. A definition of mathematics anxiety is, "the fear, defensive, paralysis, psychological incapacity that arise in some people while asking them to solve mathematical problems. Mathematics anxiety has been measured for quite a lot of years, but got renewed recently (Kavanagh, 2007). The researchers currently believe that the implementation of strategies to avoid or decrease anxiety and improved mathematics performance could be achieved (Geist, 2010). It is recommended that mathematics anxiety is faster from other aspects of emotions. Research has furthermore shown that mathematics concern is extraordinary among girls, particularly in the central and upper secondary levels (Beilock, 2010; Kavanagh, 2007; Woodard, 2004). There are some researchers who found that math performance decreased by anxiety for the reason that it decreases the working of students memory, making them unable to withhold information unrelated or hold in sequence interruption even to work on the tasks (Ashkravc, 2007; Beilock, 2005).

Many myths exist regarding mathematics, Mathematics anxiety is often associated with developmental theories. Research has shown that many people think they may have trouble with math and women are not better at math than men (Woodard, 2004). Community including tutors, parents, and consultants often reinforce such myths. A few examples include i) there is a "special mind" to understand the math; ii) people are born with different types of minds; iii) a person who does it, has a different way of learning. These types of myths discourage people to get learning and make them fed up from learning mathematics. A definition of mathematics anxiety is, "the fear, defensive, paralysis, psychological incapacity that arise in some people while asking them to solve mathematical problems.

### **Theoretical Perspective**

There are two anxiety theories which can directly be associated with the concept taken in this article. The two relevant theories are test anxiety theory and math anxiety theory. Test anxiety theory is part of psychology (Ruppel et al., 2015) but as it is a fact that theoretical constructs (students' performance and testing condition) are possibly attached to each other. There are further studies which indicated that test anxiety has a relation with emotional equilibrium (Ringeisen & Buchward, 2010). Steinmayr et al., (2014) have clearly demonstrated the link between anxiety and achievement in academia. It means that the

theory can be applied to study the effect of tests on students to intervene the educational practices (Bird & Markle, 2012).

The anxiety towards mathematics is called mathematics anxiety. Wilbert (2006) noted that performance can be improved, and achievement can be sought through reducing math anxiety. One more proof came from Vinson (2001) who noted that diminishing of math anxiety can increase power of taking interest in mathematics. This also affect the students' attitude to solve mathematical problems (Hembree, 1990), that is because of wrong understanding of mathematics as a punishment that increase their stress level (Zaslavsky, 1999). Arem (2003) associates math anxiety with test anxiety and described that it is applied in three aspects: poor test preparation, test-taking strategies, and psychological pressure. These three things are responsible for increased mathematics anxiety.

### **The Objectives of the study**

The study was carried out with the following objectives

- To investigate the level of mathematics test anxiety in secondary school level students.
- To explore the relationship of test anxiety with student's achievement in mathematics.
- To recommend suitable suggestions for coping with the situation.

## **Method**

### **Research Design**

Quantitative research method and descriptive/correlational research design were used for this research. Questionnaires were used to collect data about the level of anxiety and correlation of test anxiety with students' performance in mathematics.

### **The population of the Study**

The population includes all students of 10th class which passed the 9th class from BISEs of Punjab in the year 2018 were taken as a population of the study. There are nine divisions in Punjab. All students of the 10th class in nine divisions were the population of this study.

### **Sample of the Study**

In this study, multistage sampling technique was applied for selection of the sample. Simple random sampling and cluster sampling

were used at two stages. From each division of Punjab, one district was selected, and from each district 2 high schools were selected through cluster sampling technique. The researcher chose 18 main (model) high schools from district headquarter. Next, sections in the schools are identified by the management of the said schools. 15 students from each school were selected randomly and finally, two hundred and sixty students of grade 10th were the participant of the study.

### **The Instrument of the Study**

After the review of related literature, one questionnaire was adapted from MARS (Math Anxiety Rating Scale; Richardson & Suien, 1972). Mathematics Anxiety Rating Scale (MARS) is, in the original description, a 98 item scale that includes a brief description of a wide range of mathematics related activities. These include everyday mathematical calculations like to change and work out costs, and aspects of math classes such as listening to lectures, reading books, and math tests. Researcher selected 30 questions from the scale and employed 5 point Likert scales. The scale is available of the MARS website and the researchers are allowed to use this questionnaire free of cost.

The scale was adapted by taking guidelines from (MARS) Math Anxiety Rating Scale. On the final questionnaire selected for study, one portion comprises of question regarding achieved marks of 9th class in the subject of mathematics in Boards of Intermediate and Secondary Examinations examination in 2018. The other part comprises of 30 items assessing three factors (physical & emotional, assessment related and social anxiety). Each factor is measured by 10 questions for each participant to rate the mathematics test anxiety dimension.

A pilot testing was done to inspect the reliability of the instrument. Data was collected from 30 students from 2 secondary schools. The value of Cronbach alpha was .81 for overall MARS scores.

### **Data Analysis**

A descriptive analysis was performed to find out the level and intensity of test anxiety in students. Three factors were separately assessed to find level and intensity on dimensions of mathematics test anxiety. To find the relationship between study variables, Pearson correlation test was used.

### Results

This section presents findings of the study. Descriptive analyses on level and intensity of test anxiety are reported for three factors of the test anxiety. Correlations coefficients are reported for relationship between study variables.

#### Descriptive Characteristics of Physical & Emotional Factors of Math Test Anxiety

Table 1

*Frequency Distribution, Percentage and Mean Response Value of Physical & Emotional Factors Of Math Test Anxiety*

Statements	% of Responses					MRVs
	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>	
Physical & emotional factors of math test anxiety						
Feeling of emotional upsetting whenever do or think about mathematics, like irritation, crying, excessive frustration	36.5	26.2	7.7	17.7	11.9	2.42
Feeling of moist or sweaty hands whenever do or think regarding math.	27.7	33.5	6.2	25.4	7.3	2.51
Butterflies feeling in stomach when do or think about math.	31.2	37.7	6.2	17.7	7.3	2.32
Stomach feel physical upsetting (diarrhea, nausea, constipation, sickness) when do or think about math.	49.6	25.8	5.8	8.8	10.0	2.04
Muscles feeling tense and feel of stiffness when do or think about math.	28.1	28.5	19.2	14.6	9.6	2.49
Trouble in sleeping after or before working on math, the night before mathematics class or a math exam.	19.2	22.3	5.0	35.8	17.7	3.10
Urination more frequent whenever in mathematics class or functioning on a math project or test.	33.5	31.2	8.1	19.2	8.1	2.37



<i>Statements</i>	<i>% of Responses</i>					<i>MRVs</i>
	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>	
Physical & emotional factors of math test anxiety						
No control on marks of math.	23.8	21.2	15.8	26.2	13.1	2.83
Headaches or neck stiffness feeling for do or think about math.	20.0	18.1	6.2	38.8	16.9	3.15
Heart racing while don or think on the subject of math.	21.5	12.3	6.5	39.6	20.0	3.24

*MRVs (Mean Response Values)*

Data from the above table shows that out of 260 students, 36.5% answered 'strongly disagree' to the scale items which means that they do not get emotionally upset when doing the math. 33.5% answered 'disagree' to getting moist or sweaty hands when doing or thinking about math. 37.7% disagreed which means that they do not feel butterflies in their stomachs during math practice. 49.6% answered that they strongly disagree that their stomachs physically upsets when doing the math. 28.5% answered 'disagree' to feeling muscles tension or stiffness while doing math. 93 students responded 'agree' with which means that they have trouble sleeping after or before math tests, while 68 responded 'agree' to not having control over the grade in math. Out of 260 students, 101 answered that they are agreeing that they feel headache or neck stiffness while doing math. and another 103 reported feeling heart racing while doing or thinking about math. overall, the highest reported symptome (based on mean values) were heart racing and headache and neck stiffness while doing or thinking about mathematics and trouble in sleeping after or before doing mathematics or night before match test or exam.

### Descriptive Characteristics of Assessment Factor with Frequency Distribution Percentage and Mean Response Value

Table: 2. Frequency distribution Percentage and mean response value of math test anxiety of students

Statements	% of Responses					MRVs
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	
Assessment factors of math test anxiety						
Feeling very poor on mathematics tests.	27.3	29.2	8.1	27.3	8.1	2.60
Need of preparing much more for mathematics tests than for further subjects	13.1	17.3	4.6	40.0	25.0	3.47
Mathematics test is more stressful than other exam.	13.8	19.6	6.9	43.1	16.5	3.29
Feeling of understanding certain mathematics concepts in class however do poor in tests	19.6	23.8	7.3	31.9	17.3	3.03
Feeling of trouble in concentrating throughout math tests (racing thoughts cannot focus, "blinking out",).	28.8	26.9	8.8	22.3	13.1	2.64
Feeling of unsure while taking mathematics tests no issue how much I learn.	26.2	30.4	9.6	23.5	10.4	2.62
No Trust on intuition, often subsequent guess during mathematics tests.	24.2	28.5	11.5	25.4	10.0	2.70
General feeling, examination in any subject matter is a reflection of the worth of a person.	13.1	18.8	19.2	30.8	18.1	3.22
During study math test, find that anxious behavior showed	30.0	26.2	10.8	18.8	14.2	2.61

<i>Statements</i>	<i>% of Responses</i>					<i>MRVs</i>
Assessment factors of math test anxiety	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>	
(fidgeting, making excuses, pacing, avoiding the circumstances)						
For the duration of math tests, compare progress with other's around.	21.2	23.1	8.8	30.0	16.9	2.98

*MRVs (Mean Response Values)*

Data from the above table shows that out of 260 students 29.2% answered 'disagree' to their feelings on mathematics test. 17.3% answered 'disagree' on requiring more time for preparing math tests. 19.6% disagreed that mathematics test are more stressful than other tests. 23.8% disagreed on the difference of understanding and application of mathematical concepts. 28.8% answered 'strongly disagree' on trouble of concentration in math tests. 30.4% disagreed that they feel unsure in the tests whatever their learning level was. 28.5% answered 'disagree' that they guess during math tests. 18.8% disagreed that examination creates the worth of a person. 30.0% answered 'strongly disagree' that anxious behavior is shown in math tests. 23.1% answered 'disagree' on comparing themselves with the progress of others' around. 27.3% agreed on feeling poor in math tests. 40.0% answered 'agree' on needing much more effort to prepare math test than other subjects' test. 43.1% agreed on stressfulness of math test than the tests of other subjects. 31.9% answered 'agree' that they feel that their understanding of math concepts in class cannot help them in the test. 22.3% agreed that they feel trouble in concentrating during math tests. 23.5% agreed about their uncertainty during the math test whatever they have learned. 25.4% agreed on having no trust on intuition and make guesses while in math tests. 30.8% agreed that examination creates the worth of a person. 18.8% answered in agreement about anxious behavior during studying math test. 30.0% agreed during math test they compare with other people. Overall, the highest reported symptoms (based mean values) were needing

preparation, more stress in tests, comparison of math concept in class and in the test, and examination as worth of a person.

### **Descriptive Characteristics of Social Factor with Frequency Distribution Percentage and Mean Response Value**

Table: 3. *Frequency distribution Percentage and mean response value of math test anxiety*

<i>Statements</i>	<i>% of Responses</i>					<i>MRVs</i>
	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>	
Social factors of math test anxiety						
No ability to study math no issue how hard try occur.	31.5	26.5	12.3	20.4	9.2	2.49
Compare with other more "mathematical" or "logical" mind set.	15.0	23.8	14.2	36.2	10.8	3.04
Parental and/or friends memories about their personal struggles and disturbance about math.	14.6	17.7	10.4	42.3	15.0	3.25
Math answers are whichever correct or incorrect and there is small space for something in between.	16.2	24.6	11.9	33.8	13.5	3.04
Math teachers that really disliked for any reason or one more.	41.5	20.8	11.2	11.9	14.6	2.37
Worry about other person's mathematics abilities, compare with one.	25.0	26.2	8.1	28.8	11.9	2.79
Quite talent at some fields, none of them help with mathematics.	26.5	21.9	11.5	26.2	13.8	2.28
Relying on other person to help with day to day mathematics situations (calculation, checkbook, estimation).	38.1	27.7	10.4	15.4	8.5	2.32

<i>Statements</i>	<i>% of Responses</i>						<i>MRVs</i>
	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Undecided</i>	<i>Agree</i>	<i>Strongly Agree</i>		
Social factors of math test anxiety							
Get punished and embarrassed in mathematics class for not understand math.	33.8	33.5	6.5	18.8	7.3	2.72	
Not at all really understood mathematics and faking the way throughout it.	31.9	19.6	8.5	24.6	15.4	2.61	

*MRVs (Mean Response Values)*

Data from the above table shows that out of 260 students 31.5% answered 'strongly disagree' that hard work cannot support them to study mathematics. 23.8% answered 'disagree' on comparing more mathematical or logical mind set. 17.7% disagreed with parental or friends' memories about struggling mathematics. 24.6% disagreed on the opinion of less space between correct and incorrect answer. 41.5% answered 'strongly disagree' on disliking of mathematics teachers. 26.2% disagreed on comparing themselves with other people of better mathematical abilities. 26.5% strongly disagreed on having talent cannot help them in mathematics. 38.1% answered 'strongly disagree' on reliance on other person for routine mathematical issues. 33.8% strongly disagreed that they receive punishment in their mathematics class on not being comprehensible in mathematics. 31.9% respondents strongly disagreed on people's behavior of faking them as mathematics experts. 20.4% answered 'agree on having no ability to understand mathematics and hard work cannot help them. 36.3% agreed on comparing them with other more mathematical or logical mind set. 42.3% answered 'agree' to have parental or friends' memories of struggling in mathematics. 33.8% agreed that there is small space in between correct and incorrect answers. 14.6% answered 'strongly agree' that math teachers are really disliked without any reason at all. 28.8% agreed that they worry about other person when they have good ability in math. 26.2% responses were in agreement with having talent in other field but that talent was not workable in mathematics. 15.4% answered 'agree' that they rely on other person even for their routine mathematical calculation. 18.8% agreed on having received punishment in their mathematics class for not

understanding the concepts. 24.6% agreed that people even not understanding mathematics but fake their way to show expert in math. Overall, the highest reported symptoms (based on mean values) were parental or friends' memories of struggle in mathematics, comparing themselves with others, little space between correct and incorrect math answers, and worrying about other person's abilities in math.

### **Correlation of Student's Performance in Mathematics in 9th class with Math Test Anxiety**

Table 4

#### *Correlation Analysis of Math Test Anxiety with Student's Performance*

<i>Variables</i>	<i>1</i>	<i>2</i>
1. Marks in 9th class math exam		-.43**
2. Math test anxiety		

\*\*Correlation is significant at the .01 alpha level (2-tailed).

Data of the above table shows student performance in math in 9th class with mathematics test anxiety. The Pearson's correlation indicates that there is a negative correlation between the variables; and the results show that the relationship is significant at a .01 level of significance, using two-tail test.

### **Summary of the Findings**

The findings of the study showed a significant negative correlation between examination anxiety and performance of students in mathematics in 10th class exams.

The finding of the study shows that 10th class student often feel anger and frustration whenever they went to prepare a math test. Due to emotional upset, their test preparation was negatively affected. Some students get physically disturbed with the symptoms and a very small number of students feel stomach upset before or during the exams of the math. Further a moderate number of students feel stress, although sleep is not disturbed in majority students. The majority of the students have no confidence in their preparation for the math exam. There is a negative

attitude in students about the math test. They feel fear before and during the math test, uncertainty about their performance; they need more time and struggle to prepare as a math test is also difficult than other tests.

The majority of students perceive the concepts of math as very difficult and they often use the second guess tactic as they lose their memory knowledge as they avoid math test preparation and try to construct different excuses. They do not discuss their difficulties with their parents or class fellows. They rely on other people for math problem in their general lifelike balancing their money, estimation, or calculation of daily routine matter. A moderate number of students believe that there is a special mind of math issues, which known as mathematical and logical mind. A majority of the students are not able to continue their study of math after matriculation whereas a very small group leave the study due to the math subject. Finally, they believe that those who are talented, feel no worry about math. They easily overcome math test anxiety. Due to this ability, they take good performance in their results in math subjects.

### **Discussion**

The basic purpose of the current research was to explore the level of math test anxiety and the correlation between test anxiety and student performances in mathematics subjects at secondary school level in Punjab.

The findings of the study suggested a moderate to high percentage of presence of physical and emotional factors of anxiety in relation to preparation and academic performance and achievement in the subject of mathematics. The physical and emotional symptoms reported include increased heart rate, headache, neck stiffness, sleep problems and appetite problems. Jansen (2013) supported this claim and adopted student in the research program to be implemented. Furner and Berman (2003) believed that higher level of mathematical problems involved manipulating of numbers and solving daily mathematical problems. Hence, students became more anxious and lack of confidence in solving these problems. Rameli et al. (2014) felt that anxiety towards mathematics could lead to avoidance in doing mathematics. Students

tried to avoid solving mathematics related problems or choosing mathematics related courses. As the result, they were unable to perform well in mathematics. Several poor physical conditions such as drowsiness, headache and dizziness appeared once teachers mentioned certain topics in mathematics. Another major factor in math test anxiety was related to teacher methodology of teaching and assessment. It is known that math is often avoided when the teacher started worrying about the classroom students for their satisfaction (Maloney, 2012), and this can severely affect the career path of the students. Twenty-four percent of mathematics nervousness was associated with enthusiasm and societal comparison with other people. Sometimes, it happens that teachers become stiff while teaching and force their students to learn but it hampers the progress of their students in mathematics. One more reason is to prove themselves in their social circle that they are good math teachers and that are better than others, but doing this, they are unable to identify that they are missing to overcome the shortcomings and errors of their students. This also happens with the students too when they are interested to know their similarities and differences and compare themselves with other students (Shank, 2000).

A relationship between mathematics test anxiety and student's performance was presumed in the research. A negative relationship was found between mathematics test anxiety and student's performance. This finding is consistent with a latest one which states that there is an inverse relationship between test anxiety and academic performance (Acevedo, Arenas & Calderón, 2020). The greater the math's test anxiety, there is a decrease in performance of students (Ashkravc, .2001; Kitts, 2003; Miller and Bichsel, 2004; Wushu, 2004).

The belief of some students is that learning mathematics is a difficult task for them and this results in developing the feeling of "hatred" towards the subject. According to Ashcraft (2002), it was common to perceive mathematics as a difficult subject and some students avoided solving mathematical problems. Study showed that mathematics anxiety developed during the primary school years affected a notable proportion of students at pre-university levels (Devine et al., 2012). The area of mathematics is not good among students and this brings about the



rejection of this course by the students (Rius, 2015). Due to the emotional upset, the test preparation is negatively affected. The findings of the study suggested that students feel anger and frustration whenever they have to prepare for the math's test. Similar to the findings, motivational deficits and negative attitudes of students towards mathematics was found (Gonzalez, Gonzalez, Gonzalez, Nunez & Roces (2003). The findings of the study can help to overcome the obstacles that students feel during mathematics test. Investigating the dimensionality of math anxiety, i.e the factors that make up this construct and better understanding of the multiple facets of this phenomenon would provide a better insight into the nature of math anxiety. Accomplishing this would be very beneficial in preventing, or at least minimizing the impact of this problem.

### **Conclusion**

The factors chosen for the current research showed a negative correlation with the performance of students for math test anxiety. The study results are showing agreement with the previous literature on the subject. Teachers are important in reducing reactions of their students on math anxiety which can help their students in increasing their performance. One has to manage, plan training sessions to clear the concepts through proper guidance for increasing the students' performance in mathematics. One more thing for the teachers, is indicating the issues and problems faced by the students and the ways to solve them. These problems may be the basic theoretical beliefs in mathematics or some advanced problems of the subject, but in any case, the teachers can help their students in solving those problems. In this study, one main factor is math anxiety, and three sub-factors are physical & emotional, assessment, and social are analyzed with student's performance. The overall results of the anxiety of mathematics through data analysis have a significant negative correlation with the performance of mathematics. There are several limitations to be expressed. This study is limited to the participants studying high school of Bahawalpur division. However, in future, studies may extend for other parts of the country.

### Recommendations

To solve the problem of mathematics test anxiety, the researcher recommended strategies for anxious students, based on three factors of anxiety. These include learning to control stress and relaxation techniques and fighting negative thinking. Not having confidence can be a major obstacle for students with arithmetic nervousness. Instead of negative thoughts ("I cannot do this", "I was good at math," "I did not come to an end in time") to authenticate to build confidence ("I know", "My preparation is sufficient", "I can do it"). Sportspeople use a skill called "visualization" to get ready for the most important tournaments. The students can be advised to use the same strategy by visualizing themselves doing math tasks successfully. Build trust by doing easy tasks first or a test that they "know" better. This will help them relax when dealing with issues that are "harder".

Locating a supportive grouping is another useful strategy. Supportive grouping for adults with mathematics nervousness is particularly useful. Homeworking is very essential to learn math. This practice assists to identify with the objects and see what type of troubles that one is having, and as a result, one can inquire your tutor about the troubles at a later date. It is important to understand that a minor nervousness is useful to keep motivated and activated for something, but if nervousness prolongs or increases, it obstructs the capability to achieve well in the classroom.

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