



## Mental health and academic achievement in Mathematics among adolescent students

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### ABSTRACT

*Mental Health is the full and harmonious functioning of the whole personality- Hadfield [1950]. In the words of Bernad [1961] "Mental Health is a ability to cope with the person and in all likelihood to adjust satisfactory in the future" Mental Health is positive but relative to quality of life. Psychologist defines mental health as the ability of the individual to make personal and social adjustments. "Mental Health as the ability to get along with your self and worth others to be independent in the most things"- Kilander [1962]. In the present study the researcher made an attempt to explore how the mental health influences the adolescent students to achieve in mathematics.*

**Key words:** Mental Health, Achievement, Academic Achievement, Achievement in Mathematics

### INTRODUCTION

Stanley Hall (1904) described adolescence as a period of great "storm and stress", corresponding to the time when the human race was in a turbulent, transitional stage on the way to becoming civilized (Lama Majed Al-Qaisy and Jihad Turki, 2011). Adolescence is the period of heightened sensitivity for rapid learning and of critical acquisitions which determine the general style of adult life. Adolescence is the period of transition from a relatively dependant childhood to the psychological, social and economic self sufficiency of adulthood (Shubhangi Kamble, 2009). It is the time during which many developmental changes takes place in the individual like the way he thinks looks and behaves. Adolescence is the period of time when the surge of life reaches its highest peak (Jersild, 1963). Adolescence can be a time of high risk for children, where newfound freedoms can

result in decisions that drastically open up or close off life opportunities. Achievement during this period can be a stepping stone for the forthcoming year. Only if an adolescent has good achievement motivation and self-concept he can succeed in life.

Mental health involves something more than mental behaviour. It involves physical, emotional and social phases of adjustable behaviour. Without these, mental health may be impossible. In the words of K.A. Menninger, a person of mental health has 'the ability to maintain an even temper, and an alert intelligence, socially considerate and a happy disposition'.

In the first place, a person of mental health is far from being maladjusted. Secondly, he has an integrated personality: he makes an objective evaluation of his potentiality and the environment, and creates a harmony



within himself, as well as between his desires and capacities on the one hand and environmental demands and socially approved goals on the other. Thirdly, he is free from any kind of mental disorders. Mental health has a social aspect too; the possessor has a 'socially considerate behaviour' and makes contribution to 'satisfaction to the social order'.

### **Mental Health**

Mental health is generally understood to be the absence of mental disease. But it has a deeper meaning. "Mental health may be defined as the adjustment of individuals to themselves and the world at large with a maximum of effectiveness, satisfaction, cheerfulness, and socially considerate behavior, and the ability of facing and accepting the realities of life. The highest degree of mental health might, therefore, be described as that which permits an individual to realize the greatest success which his capabilities will permit, with a maximum of satisfaction to himself and the social order, and a minimum of friction and tension"- The Report of White House Conference [1930].

### **Achievement**

Achievement is a general term for the successful attainment of some goal requiring a certain effort, the degree of level of success in some specified area or in general. It is the knowledge acquired and skills developed in school subjects generally indicated by marks obtained in test and examinations. Dictionary of Education (Good, 1959) defined achievement as, "Accomplishment or proficiency of performance in a given skill or body of knowledge".

### **Academic Achievement**

Good (1959) defines academic achievement as "the knowledge attained or skills developed in the school subjects, usually determined by test score or by mark assigned by teachers or both". Here, the achievement in Mathematics refers to the knowledge attained or skills developed in the Mathematics subject usually designated by test scores or by marks assigned by teachers or both. Achievement in Mathematics is often a component rather than the role focus of program.

### **Achievement in Mathematics**

A student is expected to develop general intelligence independently of at the school. Therefore the school is responsible for any achievement which the student is expected to acquire. The term 'Achievement in Mathematics' stands for the identifiable operations that students are expected to perform on the curricular materials prescribed for a course. Achievement in Mathematics is based on Instructional Objectives, which are highly specific and measurable. These Instructional Objectives are meant to be realized during short periods of instruction, the smallest unit being a "teaching period". Consequently, these objectives are according to the demands of the subject taught, the needs of the learner, the time and nature of the instructional period, the competence of the teacher and the effectiveness of the methodology adopted. Based on these predetermined goals or objectives of instruction, suitable evaluative measures are evolved in order to assess the extent to which these Instructional Objectives have been realized.

### **SIGNIFICANCE OF THE STUDY**

Education is a process and acts also as an instrument to bring out the innate



behaviour of the individual. The destiny of a nation lies in its classrooms. Therefore it is the responsibility of teachers, society and government to see that they are physically, mentally, emotionally and educationally healthy. The needful steps taken at this period ensures a healthy democracy in the country. It is believed that the adolescent stage correspondingly the adolescent school stage have got significant role in one's life. The student spends less than a quarter of the time at school and the remaining three quarters are spend at home and surrounding, the mental health of the student which is a product of the influences of the both, is moulded more by home conditions than those of the school. Thus, both the school and the home have joint responsibility to preserve the mental health of the student. The achievement of the students at this stage depend many reasons such as family, socioeconomic status, mental health, school environment and so on. So the investigator was interested in knowing the relationship between adolescent student's mental health and their academic achievement in Mathematics

### OBJECTIVES OF THE STUDY

The main objectives of the present study are:

1. To find out whether there is any significance difference between male and female adolescent students in their mental health.
2. To find out whether there is any significance difference between rural and urban adolescent students in their mental health.
3. To find out whether there is any significance difference between male and

female adolescent students in their achievement in Mathematics.

4. To find out whether there is any significance difference between rural and urban adolescent students in their achievement in Mathematics.

5. To find out whether there is any significance relationship between mental health and achievement in Mathematics of adolescent students.

### NULL HYPOTHESES

1. There is no significant difference between male and female adolescent students in their mental health.

2. There is no significance difference between rural and urban adolescent students in their mental health.

- 3: There is no significant difference between male and female adolescent students in their achievement in Mathematics.

- 4: There is no significant difference between rural and urban adolescent students in their achievement in Mathematics

- 5: There is no significant relationship between the mental health and achievement in Mathematics of the adolescent students based on the demographic variables.

### METHOD USED IN THE STUDY

Normative survey method has been used in the present study. The study was conducted on 200 adolescent students (100 male & 100 female) of 9th class from a two Govt. schools both Rural and Urban schools situated in the Vijayawada in Andhra Pradesh. The sample size was 200. It was selected by using random sampling technique. This study tried to find out the relationship between mental



health and achievement in Mathematics of adolescent students. The tools used for study were 1. Mental Health Inventory [2009] constructed and standardized by the investigator. 2. An achievement test in Mathematics constructed by the investigator.

Data Analysis: Statistical techniques such as Descriptive analysis, Differential analysis and Correlation analysis were employed to analyze the data.

**DATA ANALYSIS AND FINDINGS**

**Table 1. Difference between male and female adolescent students in their Mental Health.**

Sr. No.	Type of Students	N	Mean	S.D	t-value	level of significance
1	Male	100	58.87	14.51	8.46	SIGNIFICANT
2	Female	100	68.94	12.52		

The above table indicates that the calculated 't' value is significant at 0.01 level. Hence the null hypothesis is rejected. It is concluded that male and female adolescent students differed

significantly in their mental health. While comparing the mean score of male and female students, the female students are better than the male students in their mental health.

**Table 2. Difference between rural and urban adolescent students in their mental health.**

Sr. No.	Type of School locality	N	Mean	S.D	t-value	level of significance
1	Urban	100	66.41	13.41	3.76	SIGNIFICANT
2	Rural	100	59.29	15.68		

The above table indicates that the calculated 't' value is significant at 0.05 level. Hence the null hypothesis is rejected. It is concluded that urban and rural adolescent students differed

significantly in their mental health. While comparing the mean score of urban and rural students, the urban students are better than the rural students in their mental health.



**Table 3. Difference between male and female adolescent students in their achievement in Mathematics**

Sr. No.	Type of Students	N	Mean	S.D	t-value	level of significance
1	Male	100	63.45	17.73	8.64	SIGNIFICANT
2	Female	100	75.60	18.11		

The above table indicates that the calculated 't' value is significant at 0.01 level. It is concluded that male and female adolescent students differ significantly in their achievement in Mathematics. Hence the null hypothesis is rejected. It is concluded that male and

female adolescent students differed significantly in achievement in Mathematics. While comparing the mean score of male and female students, the female students are better than the male students in their achievement in mathematics.

**Table 4. Difference between rural and urban adolescent students in their achievement in mathematics.**

Sr. No.	Type of Locality	N	Mean	S.D	t-value	level of significance
1	Urban	100	72.31	18.41	2.458	SIGNIFICANT
2	Rural	100	66.45	17.29		

The above table indicates that the calculated 't' value is significant at 0.01 level. It is concluded that urban and rural adolescent students differ significantly in their achievement in mathematics. Hence the null hypothesis is rejected. It is concluded that urban and rural

adolescent students differed significantly in achievement in mathematics. While comparing the mean score of urban and rural students, the urban students are better than the rural students in their achievement in mathematics.

**Table 5. Correlation between the mental health and achievement in Mathematics of the higher secondary school students based on the demographic variables.**

variables	Avg.Mark	Mental Health
Sex	0.371*	0.389*
Location	0.159*	0.195*
Avg. mark	1.000	0.047*
Mental health	0.947*	1.000



The above table indicates that students gender, location of the school, their mental health and achievement in mathematics are correlated and significance at 0.05 level.

### Findings:

1. There is a significant difference between the male and female adolescent students in respect of their mental health. Moreover, the female students are found to be better than the male students in their mental health.
2. There is a significant difference between urban and rural adolescent students in respect of their mental health. Moreover, the urban students are found to be better than the rural students in their mental health.
3. The male and female adolescent students differ significantly in respect of their achievement in mathematics. Moreover the female students are found to be better than the male students in their achievement in mathematics.
4. The rural and urban adolescent students differ significantly in respect of their achievement in mathematics. Moreover the urban students are found to be better than the rural students in their achievement in mathematics.
5. There is a significant relationship between the mental health and achievement in mathematics of the adolescent students.

### CONCLUSION

The study has revealed that majority of the adolescent students were having a high level of mental health and achievement in mathematics. Regarding other demographic characters, female students have high level of achievement in mathematics and having better mental health. Regarding the locality of the

schools, the urban students are having high level of achievement and better mental health. So, students demographic characters are directly influenced their mental health and achievement in mathematics.

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