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A Study of Metacognition and Mental Health of Undergraduate College Students

Abstract

Metacognition refers to a level of thinking that involves active control over the process of thinking that is used in learning situations. Mental health indicates the ability of a person to deal effectively with the environment . The link between metacognition and mental health is that the former deals mainly with task related mental processes, such as strategies improving cognitive performance, giving emphasis on knowledge about one's own mental states, while the latter is an attitudinal concept toward ourselves and others and also presents a humanistic approach towards the understanding and assessment of the self, positive feeling, attitudes towards self and others.

The investigator's investigation is based on two null hypothesis first regarding no significant effect of metacognition on mental health of undergraduate college students, second regarding no significant relationship between metacognition and mental health of undergraduate college students. In the present study data collected through the Metacognition Inventory and Mental health Battery. Ex Post facto method of research has been applied for the purpose. To measure above mentioned variables the following tools are used in the present study . Metacognition Inventory constructed by Dr. Punita Govil. and Mental health Battery constructed by Dr. Arun Kumar Singh and Dr. Aplana Sengupt have been used to collect the data required . "F" was applied to compare mental health of high , average and low metacognition level of students, while to compare mental health of high and low metacognition level of students & high average and average low level of metacognition' t' test was applied , which reveal that mental health of high and average metacognition level of students, mental health of high and low metacognition level of students & mental health of average and low level of metacognition have significant difference respectively. It was found in this study that metacognition of students has a moderate relationship with their mental health.

Key Words : Metacognition and mental health.

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Introduction

Everyday we get a chance to think about ourselves. While thinking is something that we do naturally and without conscious thought, benefits can arrive for dedicating sometime to thinking about the way in which we think This process, referred to as metacognition, allows us to better utilize our mental abilities, improve our problem solving skills and more successfully complete mental tasks. Metacognition helps the people to perform many cognitive tasks more effectively. It refers to a level of thinking that involves active control over the process of thinking that is used in learning situations. Since the time of Greek philosopher Socrates, educators have realized that teacher cannot possibly teach student everything they need to know in life. Thus a major goal of education is to make all round development of student's personality.

This study builds on existing research in the educational psychology domains that focuses on how students learn with a view to improve learning tactics for students. This study examines the relationship between two variables Metacognition, which is the learner's monitoring of how well he/she is learning, and Mental health which includes the way he/she feel about himself/herself, and his her ability to manage his/her feelings and deal with difficulties.

The link between 'metacognition and mental health is that the former deals mainly with task related mental processes, such as strategies improving cognitive performance, giving emphasis on knowledge about one's own mental states, while the latter is an attitudinal concept toward ourselves and others and also presents a humanistic approach towards the understanding and assessment of the self, positive feeling, attitudes towards self and others. Mental health is a state of the individual in which the needs of the individual on the one hand and the claims of environment on the other hand are fully satisfied or the powered by which this harmonious relationship can be attained. Being mentally healthy does not exclude the experiences of life which we cannot control. As humans we are going to face emotions and events that are a part of life.

More specifically, metacognition is an appreciation of what one already Know, together with a correct apprehension of the learning task and what knowledge and skills it requires, combined with the ability to make correct inferences about how to apply one's strategic knowledge to a particular situation, and to do so efficiently and reliably. Metacognition include two components: Metacognitive knowledge and Metacognitive experience or regulation. Metacognitive knowledge deals with all the concept, which are related to our thinking processes such as self-concept of knowledge, self-intelligence, self memory , attention, study habits etc.

Review of Literature

The concept of Mental Health is as old as human beings. In recent years clinical psychologists as well as educationists have started giving considerable attention to work about the study of Mental Health Efforts have been made to define positive Mental Health and healthy personality from the humanistic point of view. An operational definition of mental health will invoice its role in the general make up of the healthy individual. Aminiz ,Mohammad (2007) , while investigating the relationship between metacognition belief with mental health and academic achievement in male students of Oshnaviyes city found no significant relationship between metacognition and mental health . Ashoori, Ahmad et al (2009) in their study on Metacognitive beliefs and general health among college students found positive relationship between metacognitive beliefs and general health . Pakmehr (2011) tried to find out the relationship of M A students metacognitive and self efficacy beliefs with their mental health and found significant relation between the both .The results showed that 59% of mental health variance of all the students can be explained by their metacognitive and self efficacy beliefs . Palmer E. C. et al (2014) quantified metacognition into two cognitive domains ; perception and memory in healthy adults between 18 and 84 years old , employing measures that dissociate objective task performance from metacognitive efficiency . No significant relationship was found between executive function and metacognition in either domain. Cella Matteo et al (2015) reviewed the evidence as well as research on why metacognition needs to be explicitly taught as a part of cognitive treatments. They found that learning programmes and CRT may be able to achieve better outcomes if they teach explicitly metacognition including metacognitive knowledge and metacognitive regulation. Rebecca Philipp et al (2019) in their study on effectiveness of metacognitive interventions for mental disorders in adults-A systematic review and meta-analysis evaluated the effectiveness and acceptability of metacognitive interventions for mental disorders and found that metacognitive training was more effective than a psychological treatment in patients with schizophrenia. Acceptability of metacognitive interventions among patients was high on average. Capobianco I. et al (2020) in their study on" Metacognitive beliefs and their relationship with anxiety and depression in physical illness : A systematic review " found a novel approach of understanding and improving mental health in physical illness to explore the role of metacognitive beliefs which are reliably associated with mental health difficulty. They found that metacognitive model of psychological disorders is applicable to psychological symptoms of anxiety and depression across a range of chronic medical conditions.

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Aim of the Study

Metacognition is considered as an indispensible part for several arenas of school success. The essence of metacognition is awareness of one's cognitive processes, as well as an ability to develop a plan for achieving a goal and evaluating one's effectiveness of reaching that goal. An individual can effectively complete any task, if he or she possesses sound mental health because it is the basis of all desirable learning. It enables the individual to withstand the problems and challenges of life. Poor mental health, generally results into ineffective and maladaptive behavior which may affect an individual's achievement in life adversely.

Sufficient evidence is available in educational psychology to show that if something wrong happens to the mental health of the child, it ultimately results in various kinds of inadequacies. In this case he instead of fighting the situation or attempting to reach the goal tries to run away from the frustrating situation. Hence to be mentally healthy an individual employs the goal of metacognitive strategies.   Such person understands himself, hi strengths and abilities; he also knows his handicaps and disabilities but accept them and makes the most of what capacity he has. He longs for challenges, for new goals, and new experiences.

Hence , the study aims to benefit students   in gaining confidence and become more independent as learners by becoming aware of their metacognitive practices and thus by assisting themselves in successfully coping with new situations. Knowing one's metacognitive processes will develop creative thinking and active qualities in learners along with general ability, this helps them in thinking rationally, and in behaving purposefully in their environment.

The investigator's investigation was based on two null hypothesis first regarding no significant effect of metacognition on mental health of undergraduate college students, second regarding no significant relationship between metacognition and mental health of undergraduate college students.

Statement of the Problem

The present study is designed to ascertain influence of metacognition on students' mental health. The problem is entitled as "A study of the effect of Metacognition of undergraduate college students on their mental health.

Definition Of The Specific Terms Metacognition

Metacognition is a concept that has been used to refer to a variety of epistemological processes. "Metacognition essentially means cognition about cognition; that is, it refers to second order cognitions: thinking about thinking, knowledge about knowledge or reflections about actions. So if cognition involves perceiving, understanding, remembering, and so forth then metacognition involves thinking about one's own perceiving. understanding, remembering etc

Mental Health

Mental health indicates the ability to make adjustments to the environment on the plane of reality

Objectives of the Study

1. To study the effect of metacognition on mental health of undergraduate college students.
2. To find out the relationship between metacognition and mental health of undergraduate college students

Hypotheses of the Study

1. There is no significant effect of metacognition on mental health of undergraduate college students.
2. .There is no significant relationship between metacognition and mental health of undergraduate college students

Delimitations of the Study

The study is delimited to :
1. The undergraduate students of Bulandshahr District (UP) only.
2. The sample size of 180 undergraduate college students regardless of their sex , and educational streams

Method of the study

On the basis of research studies and the nature and objective of the present study as well as the resource available the investigator reached to the conclusion that only the ex- post facto method is most suited for the undertaken study.

Population and Sample

Students of undergraduate level of Bulandshahr city constituted the population of the study in hand. 200 students constituted the preliminary sample of the study. Finally investigator selected 180 students for the sample

Study Variable

Present study involves two variables, out of which independent variable is metacognition and dependent variable is mental health

Research tools employed

To measure above mentioned variables the following tools are used in the present study:
1. 1. Metacognition Inventory constructed by Dr. Punita Govil.
2. 2. Mental health Battery constructed by Dr. Arun Kumar Singh and Dr. Aplana Sengupta

Organization of data:

The data pertaining metacognition and mental health, obtained as per the scoring procedure, is transferred to the master sheet and kept confidential. Then it was subjected to statistical analysis

Statistical Technique used

To test the first null hypothesis F test was applied and to test the lld hypothesis correlation was applied .Hypothesis 1 of the manuscript in hand was "There is no significant effect of metacognition on mental health of undergraduate college students". To test the above hypothesis, 180 students of undergraduate college students were selected. And 'F' test was applied which reveal that computed value of 'F' is 26.49. The table value of "F" for d.f. 2, 177 is given 3.03 at 0.05 level and 4.69 at 0.01 level of significance. As the computed value of 'F' is more than table value of 'F' at both the level of significance, it could be inferred that null hypothesis showing no significant effect of metacognition on mental health of undergraduate college students is rejected at both the level of significance

Table 1.1
Computation of effect of metacognition on mental health

	df	SS	MS	F
Between groups Within groups	3-1= 2 180-3= 177	2937.4 9813.91	2937.4/2=1468.7 9813.91/177= 55.44	1468.7/55.44=26.49**
	179	12751.31		

** significant at .01 level

As "F" is found to be significant , t- test was applied to compare mental health of high and average metacognition level of stundents, to compare mental health of high and low metacognition level of students & to compare mental health of average and low level of metacognition, which reveal that mental health of high and average metacognition level of stundents, mental health of high and low metacognition level of students & mental health of average and low level of metacognition have significant difference respectively.

Table 1.2
Comparison between Mental health of high and average metacognition of students

	Number of students	Mean	S.D.	t	df

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Mental health of high metacognitive level students	31	92.83	7.72		
				3.6 **	106
Mental health of average metacognitive level students	77	86.71	8.73		

** significant at .01 level
Table value of 't' at 0.05 level = 1.98
Table value of t' at 0.01 level = 2.63
The results obtained after statistical analysis shows that calculated' salve is 3.6, more than the table value for df 106. Which is significant at (0.05 and 0.01) levels. Therefore null hypothesis is rejected and it may be interpreted that there is a significant difference between mental health of highs and average cognition level of students.

Table 1.3
Comparison between Mental health of average and low metacognition of students

	NO of students	Mean	S.D.	t	df
Mental health of average metacognition level students	77	86.71	8.73		
				3.63 **	144
Mental health of low metacognition level students	72	81.48	8.79		

** significant at .01 level
Table value of 't' at 0.05 level = 1.98
Table value of' t' at 0.01 level = 2.61
The results obtained after statistical analysis shows that calculated't' value is 3.63. more than the table value for d.f. 147. Which is significant at both (0.05 and 0.01) levels. Therefore null hypothesis is rejected and it may be interpreted that there is a significant difference between mental health of average and low Metacognition level of students

Table 1.4
Comparison between Mental health of high and low metacognition of students

	No of students	Mean	S.D.	t	df
Mental health of high metacognition level students	31	92.83	7.72		
	72	81.48	8.79	6.6**	101
Mental health of low metacognition level students					

** significant at .01 level
Table value of 't' at 0.05 level = 1.98
Table value of' t' at 0.01 level = 2.63
The results obtained after statistical analysis shows that calculated value is 6.6, more than the table value for d f 101. Which is significant at both (0.05 and 0.01) levels. Therefore null hypothesis is rejected and it may be interpreted that there is

a significant difference between mental health of high and low metacognition level of students,

It was found in this study that metacognition of students has significant effect on mental health .Therefore it could be concluded that, the metacognition effects mental health significantly. The research further reveals that there is a significant difference between high & average level of metacognition, high & low level of metacognition and average & low level of metacognition. It means that mental health students having high metacognition level is much better than those students whose metacognition level is average or low. And mental health of students having average metacognition level is also better than those students whose metacognition level is low

Second Hypothesis

is "There is no significant relationship between metacognition and mental health of undergraduate college students". To test the above hypothesis, 180 students of degree college students were selected. And product moment correlation was applied which reveal that computed value of **'r' is 0.428**, that shows a significant relationship between metacognition and mental health of students. While considering the critical value of 'r' , it is found that the obtained value is .139 at .05 level of significance and .182 at .01 level of significance . Obtained 'r' value .428 is higher than the critical values at both levels indicating that null hypothesis is rejected , meaning thereby a significant relationship exists between metacognition and mental health , though the magnitude of relationship is moderate. It could be inferred that null hypothesis showing no significant relationship between metacognition and mental health of undergraduate college students is rejected. It may be interpreted that there is a moderate relationship between metacognition and mental health of undergraduate college students .It was found in this study that metacognition of students has a significant relationship with their mental health. It means that metacognition and mental have a positive relationship. It means that students whose, metacognition is high, have good mental health while those having average metacognition , have average mental health and whose metacognition is low have poor mental health respectively.

Educational Implications of the study

The finding of this study has practical implications to guardians , teachers and guidance counsellors. They are as follows:

1. The teacher gets knowledge about difficulties of students about using metacognition The teacher can encourage students to develop a sense of their own metacognition because then they will be able to judge their capabilities better .
2. The teacher can motivate students to use metacognitive strategies in every day life situations .
3. The teacher can help students to be aware about the thinking processes. The more they are aware as they lean, the more they can control such matter as goals dispositions and attention .
4. The present study is helpful for counsellors to identify the mental health needs of their students.
5. Give an opportunity to teachers to understand the relationship between metacognition and mental health .
6. The teachers and counsellors can provide help to the students by solving their problems related to mental health because to fulfil the goal of metacognitive strategies, they should be mentally healthy. Counsellors can help student by providing them information about the methods to increase their level of metacognition because when they understand themselves and their own desires, their motivations, drives and wishes, they will be mentally healthy .
7. The parents should provide such an environment to the students which help in increasing the level of emotional stability, security, adjustment, autonomy and self-concept and mental health .

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Conclusion

The manuscript reveals the effect of metacognition on mental health of undergraduate college students along with the relationship between both the variables. Findings of the study indicate that significant effect of metacognition is found on the mental health of undergraduate college students. A NOVA reveals significant difference in the mental health of high, average and low level metacognitive undergraduate students. Similarly significant difference is found between the mental health of high and average , average and low and high and low level metacognitive undergraduate students. A moderate relationship is found between metacognition and mental health of undergraduate college students. Hence teachers should help and encourage their students to to be aware about the thinking processes. The more they are aware as they lean, the more they can control such matter as goals dispositions and attention

Suggestion for further Research

On the basis of own views and situation faced, investigator presents following suggestions for further studies

1. A similar study may be conducted with regard to gender ,academic streams , residential background such as rural urban areas, type of colleges and many more.
2. Different other variables like metacognitive awareness, self consciousness, mental illness or mental disorders can also be taken in further investigation.
3. An investigation of similar type may be designed at other level of education.
4. An investigation of similar type may be designed for teachers.

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