

Effect of Sleep Deprivation on Reaction Time of Students of Indore

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Introduction:

Reaction time is the interval of time between the presentation of stimulus and the initiation of the response, the rate at which a person can thrust his body, or part of body, through space. Reaction time was initially thought to be rather simple and easily measured phenomenon but an individual cannot be described as having a single reaction time without specifying the conditions under which he is being tested.

Some of the factors which have been found to influence reaction time are the following: the sense organ involved the intensity of stimulations, the preparatory set, general muscle tension, motivation, practice, the response required, fatigue, and one's general state of health.

Being a physical educator is ordinarily not able to justify the purchase of an expensive timing device.

Aim and Objective:

The aim and objective of the study was to measure the effect of sleep deprivation on speed of reaction with the hand in response to a visual stimulus.

Hypothesis:

It was hypothesised that there was significant difference between pre test and post test of sleep deprivation on the reaction time.

Material and Methods:

Subject: The study has made on forty male student of DAVV Indore. The age of subjects ranges from 21-25 years. There are only one group i.e. experimental group were exposed in pre-test and post-test. The instrument which used to take score was Measuring 30 cm scale. Pre-test was taken in fresh or alert condition of subject in morning after 8-9 hour of sleep and post-test was taken in same time of pre-test but sleeping hour of subject was less than half of his sleep i.e. >4 hour.

Procedure: The subjects were sitting at a chair with his hands resting on the edge of the table for administrated hand reaction time. The palm facing each other along two lines which were marked on the edge of the table of 30 Centimetre apart. After the preparatory command "ready" was given, the scale is released by tester and the subject attempted to stop and hold it as quickly as possible by clapping the hands together. The subject were instructed to not to allow his hands to move up or down when he is clapping the hands together. The score were the scale point just above the upper edge of the hand after catch. The middle of five score has been taken after

arranging increasing or decreasing order. Five trials have given.

Result:

Paired Samples Statistics

	Mean	Std. Deviation	t
Pre Post	3.13	32.43	.59

* Significant at 0.05 level.

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The data has been collected through 30 cm measuring scale taken after complete and incomplete rest recovery for five times before & after three month of treatment. The following tests were taken by qualified and well known expert in room environment. In order to find out comparison between the pre-test and post-test 't'-test were used. For testing the hypothesis the level of significance would be set at 0.05.

Discussion of findings:

Sleeping has significant effect on the individual neuro-muscular co-ordination and reaction time. Hence it is more dependent on individual's body system functioning & Physical Fitness attained than small exercise practice. This may be due to the reason that incomplete sleep decrease sugar metabolic rate of the body and fatigue decrease the flow of body movement.

The study reveals that lack of sleeping or improper rest resulted into significant effect on reaction time.

Conclusion:

Research has shown a positive relationship between sleep and reaction time.

Research also shows that, the lack of sleep effect the eye hand coordination in response to a visual stimulus.

References:

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