



WHAT IS THE IDEAL CHRONOTYPE FOR LONG TERM RETENTION OF SUBJECT IN MEDICOS?

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ABSTRACT **Background:** Since time immemorial, Brahmamuhurtha is considered as the most auspicious period for studying, or doing any important work. But through years, this pattern has been changing among students with more inclination to the evening chronotype. **Methods:** A questionnaire based educational observational study was conducted which involved the 3rd and 4th Professional year medical students. The Self assessment Morningness and Eveningness Questionnaire (MEQ) consisting of 19 multiple choice questions was used as a tool for assessing the chronotype of students. Prior to administering the questionnaire, Consent was taken from the students regarding the willingness to take part in the study. Based on the answers to this questionnaire, students were assigned a chronotype based on their MEQ scores. Later these students were sent another google form containing 20 MCQ's in the subject matter studied in their previous year. After receiving all the responses, the students were grouped based on predetermined criteria. Finally the relation between Chronotype and long term retention of subject matter was established. **Results:** Majority of the students belonged to evening chronotype (65%). 19% students were of the intermediate chronotype and 16% of them were of the morning chronotype. The retention of subject matter in medical students in the various chronotypes was almost the same which showed no statistical significance. **Conclusion:** Evening chronotype is the predominant chronotype among medical students. There is no correlation between the Chronotype and the long term retention of subject.

KEYWORDS : Chronotype, students, retention of subject.

INTRODUCTION

Since time immemorial, Brahmamuhurtha is considered as the most auspicious period for studying, or doing any important work. This time of the Creator is one and half hour before the sunrise. "Early to bed and early to rise" is a very popular proverb to quote the importance the Indian society gives to Creator's time for gaining knowledge and better retention of subject matter. Chronotype is the natural inclination of all living beings in relation to the time of day when they are most alert or when they prefer to sleep. Humans are diurnal i.e day timers because of inbuilt Biological clock. But through years this pattern has been changing among students with more inclination to the evening chronotype [1]. Hence the present study was conducted to assess the Chronotype of Medical students and to correlate the Chronotype of Medical students with long term retention of subject matter.

Materials and Methods

Study design and study population:

1. Study Design: Questionnaire based Educational observational study through Google forms.
2. Duration: 2 months
3. Study Group: 100 students of Gandhi medical college. [3rd and 4th Prof.]

Exclusion Criteria:

1. Students who did not complete answering all the questions in the questionnaire.
2. Students with altered sleep pattern

The Self assessment Morningness and Eveningness Questionnaire (MEQ) developed by James A Home and Olov Ostberg consisting of 19 multiple choice questions with four or five options against each question and with specific score for each option varying from zero to 6 was used as a tool for assessing the chronotype of students. Prior to administering the questionnaire, Consent was taken from the students regarding the willingness to take part in the study. A soft copy of the questionnaire, in the form of google forms was sent to each student participating in the study. Based on the answers to this questionnaire, students were assigned a chronotype based on their MEQ scores as in table 1.

Table 1: Classification Of Chronotypes Based On Meq Scores

S.NO	TOTAL SCORE	CHRONOTYPE
1	16-30	DEFINITE EVENING TYPE
2	31-41	MODERATE EVENING TYPE
3	42-58	INTERMEDIATE TYPE
4	59-69	MODERATE MORNING TYPE
5	70-86	DEFINITE MORNING TYPE
6	<41	EVENING TYPE
7	>59	MORNING TYPE

Later these students were sent another google form containing 20 mcqs in the subject matter studied in their previous year. Students were asked to mark only one suitable option for each question. Each correct answer was awarded 1 point. There was no negative marking. After receiving all the responses, the students were grouped based on the criteria in table 2.

Table 2: Criteria For Long Term Retention

CORRECTLY ANSWERED	LONG TERM RETENTION
MORE THAN 75%	VERY GOOD RETENTION
65% TO 75%	GOOD RETENTION
50% TO 64%	AVERAGE RETENTION
LESS THAN 50%	BELOW AVERAGE RETENTION

Finally the relation between Chronotype and long term retention of subject matter was established.

RESULTS & DISCUSSION

Pie Diagram Showing Distribution Of Chronotypes In The Present Study And Other Studies:

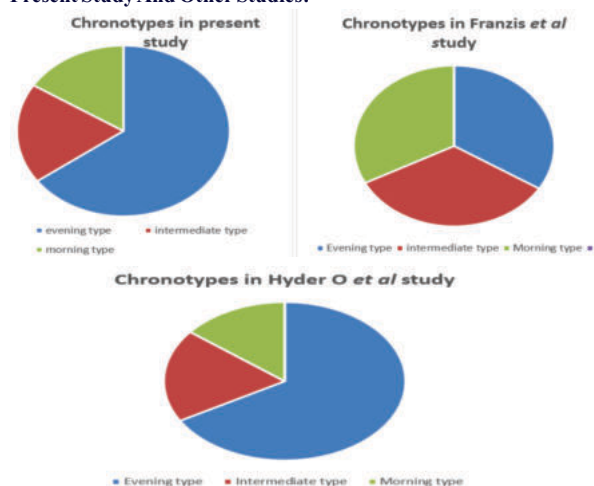


Table showing relation between Retention of subject and Chronotype:

Chronotype	Retention of subject matter			
	Our study	Franzis et al	Vollmer et al	Montaruli et al
Evening type	65%	79%	70%	83%
Intermediate type	63%	78%	75%	86%
Morning type	64%	76%	80%	90%

In the studies of Franzis et al [2] and Vollmer et al [3], the prevalence of morning, intermediate and evening chronotypes were almost the same whereas in our study majority of the students (65%) were of the evening chronotype. However BaHammam *et al* [4] and Hyder O. *et al* [5] and Dr. Muhammad Khubaib *et al*s [6] findings correlated with our findings. BaHammam *et al* and Hyder O *et al* studied the chronotype in medical students like in our study whereas Franzis et al and Vollmer et al studied chronotype in other students. This suggests that the medical students mostly have an evening chronotype. This chronotypic difference may be due to prevalent student culture and campus life.

In our study, we observed that there was no statistical difference in the retention of subject matter based on the chronotype. Morning chronotype did not correspond to better retention of subject matter or neither did an evening chronotype seem to adversely affect the retention of subject in medical students. These findings correlated with the findings of other studies of Momtaruli et al [7], Vollmer et al [3] and Franzis et al [2]. The fact that the evening chronotype had no difficulty in retaining the subject must have made the students to adopt a change in the chronotype from morning chronotype to evening chronotype.

CONCLUSION

Evening chronotype is the predominant chronotype among medical students. There is no correlation between the Chronotype and the long term retention of subject. Since the retention of subject matter is not affected by chronotype, medical students can study at what ever time they want to depending on their chronotype.

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