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Research Article

Patterns, Perceived Triggers, and Physiological Correlates of Yawning Behavior in First-Year Medical Undergraduates: A Cross-Sectional Questionnaire Study

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ABSTRACT
Background:-Yawning is a stereotyped reflex observed in humans and several animal species and is commonly associated with fatigue, boredom, and reduced alertness. It is also regarded as a socially contagious phenomenon. Despite its frequent occurrence, scientific evidence regarding the underlying causes, functional significance, and behavioral patterns of yawning remains limited, particularly among adolescent and young adult populations.
Objectives:-The present study aimed to assess the patterns of yawning behaviour and its associated factors among adolescents.
Materials and Methods:- This cross-sectional, questionnaire-based study was conducted among 200 first-year MBBS students . After obtaining informed consent, participants were administered a self-structured questionnaire incorporating a six-point Likert scale to assess yawning behaviour under various situations. Students were instructed to respond honestly, and anonymity was ensured. The collected data were compiled and analyzed, and the results were represented graphically.
Results:- Under routine conditions, the majority of students reported yawning either “somewhat” or “not at all.” A significantly higher frequency of yawning was reported during sleep deprivation, with 68.42% of students indicating yawning “very much” when they lacked adequate sleep. In contrast, 73.68% of participants reported not yawning during interviews, and 71.05% reported no yawning while completing the questionnaire. Although yawning is widely considered contagious, only 23.68% of students reported yawning frequently upon observing others yawn.
Conclusion:- The findings suggest that yawning among first-year MBBS students predominantly occurs in association with sleep deprivation rather than social or situational stimuli. Overall, the study population appears to maintain a satisfactory level of alertness and engagement, as reflected by low baseline yawning frequency.

Keywords: Yawning, Behaviour, First-Year MBBS Students, Questionnaire-Based Study, Likert Scale.

INTRODUCTION

Yawning is a stereotyped reflex characterized by a wide opening of the mouth accompanied by deep inspiration, a brief pause in ventilation, and a subsequent short expiration, typically lasting approximately five seconds [1]. Traditionally, yawning has been interpreted as a behavioral manifestation of boredom, fatigue, or reduced alertness. Despite its universal presence across species, the precise physiological purpose and underlying mechanisms of yawning remain incompletely understood. Contemporary research suggests that yawning may serve functions extending beyond its conventional behavioral interpretations. Evidence indicates that yawning may contribute to thermoregulation of the brain by facilitating heat exchange and optimizing cerebral performance [2]. In addition, yawning has been associated with arousal-related mechanisms, reflecting transitions between varying states of wakefulness and alertness [3].

Contagious yawning is a well-documented phenomenon and has been strongly linked to social cognition, particularly empathy-related processes [4,5]. Spontaneous yawning has been observed in humans as early as 20 weeks of gestation, underscoring its early developmental origin and innate nature [6]. Furthermore, yawning has been described as a paralinguistic behavior with multiple functional implications across diverse animal species, suggesting that it is an evolutionarily conserved phenomenon [7].

Despite increasing scientific interest, literature exploring yawning behavior within the Indian population remains limited. In particular, there is a paucity of data examining yawning patterns among students exposed to intensive academic environments. Therefore, the present study was undertaken to assess yawning behaviour among first year mbbs students from Sri Siddhartha Medical College, Tumakuru, using a questionnaire-based survey.

MATERIALS AND METHODS

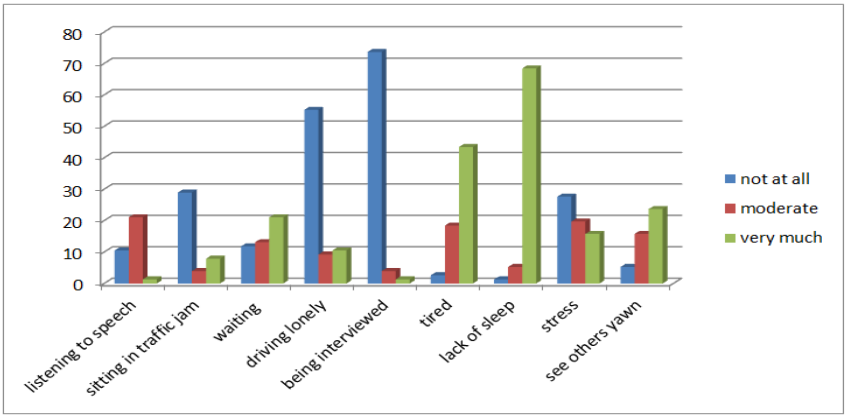
The present study was carried out among first-year MBBS students of 2024-2025 batch of Sri Siddhartha Medical College, Tumakuru. Prior to commencement of the study, the students were oriented regarding the different patterns of yawning and the commonly proposed physiological and behavioral factors contributing to yawning. A total of 200 students voluntarily provided informed consent and were included in the study.

Yawning behaviour was assessed using a standardized questionnaire developed by Greco [8], consisting of 16 items rated on a six-point Likert scale. The questionnaire was administered in a self-reported format, and participants were instructed to respond accurately while ensuring complete anonymity. The collected data were compiled, and the results were analyzed and presented graphically.

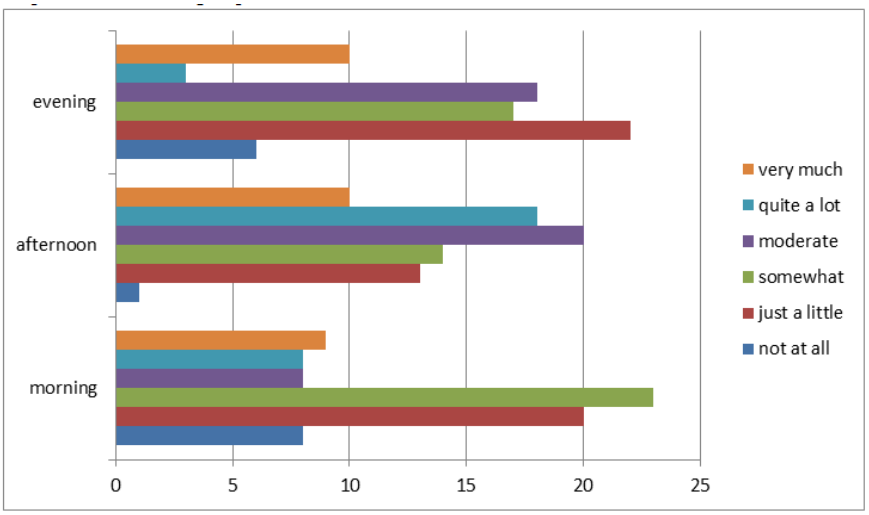
RESULTS

The results of the study were represented as follows:

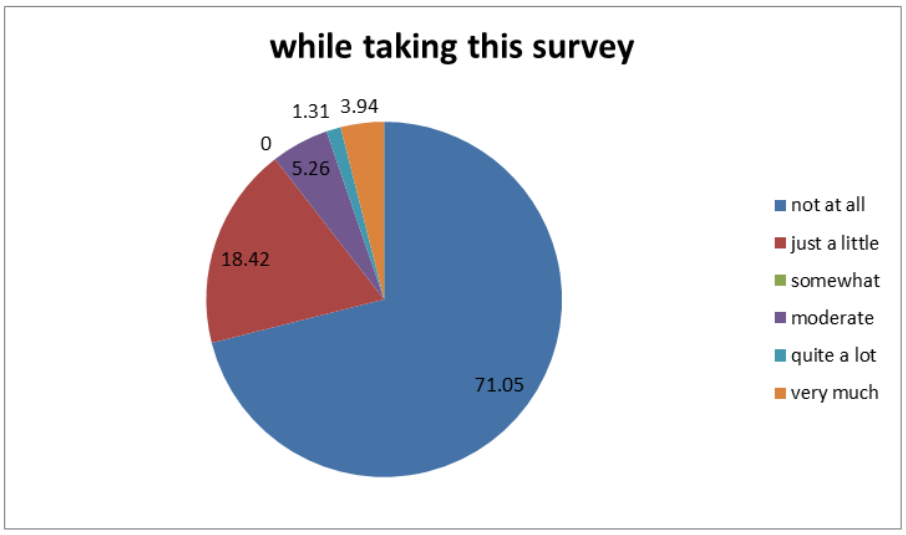
Graph-1: Percentage of Students Responding to Various Situations



Graph-2: Chart Showing Responses at Different Times



Graph-3: Yawning Behaviour of the Students While Taking This Survey



DISCUSSION

Yawning has traditionally been interpreted as a behavioral manifestation of fatigue or boredom. Despite its frequent occurrence in everyday life, scientific exploration of yawning remains relatively limited [9]. Contemporary research, however, suggests that yawning encompasses a broader physiological and psychological significance, extending beyond mere expressions of tiredness. It has been associated with mechanisms related to arousal regulation, social empathy, and cerebral thermoregulation. Smith JD, et al [10] provided experimental evidence supporting a potential association between yawning and middle ear pressure regulation, while other studies have demonstrated a correlation between yawning frequency and depressive states [11].

The present study aimed to examine yawning patterns among first-year dental students across different situational contexts. The findings indicate that, under most circumstances, the majority of students reported yawning only "just a little" or "somewhat." Notably, 73.68% of participants reported an absence of yawning during interviews, suggesting heightened alertness and engagement during socially interactive situations. In contrast, yawning frequency increased substantially in conditions of sleep deprivation, with 68.42% of students reporting yawning "very much" when they lacked adequate sleep.

A proportion of students also reported a higher tendency to yawn during morning hours compared to other periods of the day, which may reflect physiological transitions in arousal following sleep. Although yawning is widely regarded as a contagious behavior, only 23.68% of participants reported yawning frequently in response to observing others yawn. Furthermore, 71.05% of students indicated that they did not yawn while completing the questionnaire, reinforcing the

likelihood that the participants remained attentive and responsive throughout the study. Overall, the findings suggest that yawning in the present study population was predominantly influenced by physiological factors, particularly sleep deprivation, rather than social or situational triggers. The students appeared to maintain an adequate level of alertness and responsiveness, as evidenced by low baseline yawning frequency. Future research involving larger and more diverse populations, as well as comparative group analyses, may offer further insights into the determinants of yawning behavior. At the conclusion of the study, the participants were briefed on the findings, encouraged to maintain healthy sleep and lifestyle practices, and appreciated for their attentive participation.

CONCLUSION

The findings of this questionnaire-based study indicate that the majority of students exhibited minimal yawning behaviour, reporting yawning either "just a little" or "not at all" across most situations. Although yawning is commonly described as a contagious phenomenon, only approximately one-quarter of the participants reported yawning to a considerable extent upon observing others yawn. These observations suggest that yawning in the study population occurred at a low baseline level and was not strongly influenced by social contagion.

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