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MELATONIN GUMMY SELF-MEDICATION AMONG INDIAN YOUTH: A CROSS-SECTIONAL STUDY OF SLEEP QUALITY, LIFESTYLE FACTORS, AND THE IMPACT OF THE COVID-19 PANDEMIC

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ABSTRACT

Background: Sleep disturbances have become increasingly common among young people, especially after the COVID-19 pandemic, and the use of over-the-counter sleep aids has increased, especially melatonin. The palatable nature of melatonin gummies and their convenient accessibility have increased their popularity among the young, where the use of these substances is not regulated by a doctor.

Aim: The aim of the current research is to determine the rates and trends of self-medication using melatonin gummies among Indian youth and to determine the relationship between these factors and their sleep quality, lifestyle habits, and influencing factors of COVID-19.

Methods: An online Google Form using social media platforms administered a cross-sectional, questionnaire-based study to 1450 participants aged 18 years to 30 years. Sleep quality was assessed using a self-developed structured sleep assessment questionnaire including subjective sleep quality, sleep duration, sleep latency, sleep disturbances, and daytime dysfunction. Melatonin use, self-medication habits, lifestyle, and adverse effects were gathered. Statistical procedures were done by the use of SPSS where descriptive statistics and chi-square tests were applied with $p < 0.05$ taken to be significant.

Results: The prevalence of melatonin gummy use was 54.4%. Almost half (49.6%) of the respondents had mild sleep disturbance with 34.2% having poor sleep quality. There was a significant association between poor sleep quality and melatonin gummy use ($p <0.001$). Most users started taking melatonin during (42.0%), or following (38.0%), the COVID-19 pandemic. It was found that moderate to high levels of self-medication were used by 73% of the participants, with 48.5% saying that they experienced adverse effects. The most prevalent reasons of use were sleep disturbance (65.9%), stress (57.7%), and irregular schedules (50.9%) reasons. Stress and screen time were found to be significantly associated with poor sleep quality.

Conclusion: Melatonin gummy use was highly prevalent among Indian youth and was significantly associated with poor sleep quality, lifestyle factors, and post-pandemic behavioral changes. The high prevalence of self-medication and adverse effects highlights the need for greater awareness, regulation, and emphasis on non-pharmacological management of sleep disturbances.

KEYWORDS: COVID-19, Lifestyle Factors, Melatonin Gummies, Sleep Quality, Self-medication, Youth.

INTRODUCTION

Sleep is a biological process that is essential in the physical and psychological well-being. In recent years, the problem of sleep disorders has also been a significant concern in terms of population health particularly among young adults due to their academic demands, excessive exposure to screens and unbalanced ways of living. Coupled with the COVID-19 pandemic, these issues were further aggravated as people have been more uprooted concerning their daily routine, more psychologically affected, and more signs of insomnia, or what is often called a coronasomnia [1]. Being an over-the-counter hormone and being considered a safe and non-toxic compound, Melatonin has become a widely used sleep aid since its discovery as an endogenous hormone that controls the circadian rhythm. Melatonin is also being actively consumed in India in the form of gummies, a product being marketed as non-toxic and as a palatable sleep aid. It is this formulation that particularly appeals to the young generation, since it is like confectionery and being actively promoted on the internet [2]. Melatonin is a neurohormone that is endogenous in nature and is primarily synthesized in the pineal

gland and plays significant roles in the control of circadian rhythm as well as in the stimulation of sleep. Its exogenous form to be used typically in the synthetic forms is normally used as a chrono biotic agent to prevent jet lag, shift work disorder, or certain primary sleep onset insomnias [3]. However, its increased over-the-counter availability has also led to the increase of its unofficial usage particularly among the younger populations who are likely to seek easy solutions to sleeping disturbances [4]. The growing popularity of melatonin is becoming a cause of concern on the likelihood of misuse and adverse effects of melatonin, particularly due to the lack of stringent regulatory control of dietary supplements [5]. Another notable development which has defined the post-pandemic period is the shift in the attitude of health-seeking behavior whereby majority of the populace are more inclined towards self-medication, especially among the youth segments of the population [6]. The easy access, the heavy advertisement, and the influence of social media have prompted the non-prescription use of dietary supplements, and melatonin is one of them. Despite the fact that people tend to consider these gummies as harmless, the inappropriate use of melatonin, in particular its use in the absence of medical protection and in inappropriate sleep aid doses, may lead to certain side effects, daytime sleepiness, hormonal disorder, and post-use sleep improvement and the impact of the COVID-19 pandemic on the consumption of such gummies [7,8]. The given research will assist in identifying the popularity and tendencies of melatonin gummies self-medication in young Indians, its impact on their sleep and explore how COVID-19 pandemic influences this new practice.

Aim: To determine the frequency and trends of self-prescription of melatonin gummies in Indian youth and to examine its association with the quality of sleep, lifestyle variables, and the COVID-19 pandemic influence.

Objectives:
1. To identify the prevalence and frequency of using melatonin gummies in young people aged 18-30 years.
2. To evaluate sleep quality among respondents using a structured sleep assessment questionnaire.
3. To assess the relation between sleep quality and the use of melatonin gummies.
4. To determine the time of starting melatonin, use in connection with COVID-19 pandemic.
5. To determine the typical causes of melatonin gummies use.
6. To assess self-medication behaviors and how it correlates with negative outcome.
7. To examine how the lifestyle factors (stress levels and screen time before bedtime) relate to the quality of sleep.

MATERIAL AND METHODS

This was a cross-sectional and observational study that involved young people aged 18-30 years in India to determine the use of melatonin gummies, the quality of sleep, and other related variables. The research was conducted by the department of community medicine in a tertiary care hospital a 3-month period from November 2025 to January 2026 after getting approval from the Institutional Ethical Committee with reference no. ASCOMS/IEC/2025/Meeting-II/FM/29 dated 18/09/25 on the basis of online survey with the use of the Google Forms system, and the questionnaire was spread over a three-month period in a social network (WhatsApp, Instagram, email, etc.). Participants were recruited by means of convenience sampling. Participants with diagnosed sleep disorders undergoing treatment, those with severe psychiatric or neurological disorders, and those who did not complete the questionnaire were excluded from the study. The survey on Google Forms received a total of 1511 responses out of which 1450 were complete and met the inclusion criteria; the rest was incomplete and inconsistent, and was not included in the final analysis.

The self-administered, structured questionnaire was created by using literature previously published on sleep quality assessment, and some of the most commonly assessed domains were included: subjective sleep quality, sleep duration, sleep latency, sleep disturbances and daytime dysfunction. The questionnaire was pretested with 30 subjects for clarity and feasibility, and The questionnaire demonstrated satisfactory internal consistency (Cronbach's alpha = 0.84). Changes were made based on feedback obtained during pilot testing. The results of the pilot study were not used in the final analysis. The survey form was comprised of various sections. Electronic informed consent was obtained in the first part after which the socio-demographic information comprised of age, gender, education, and occupation. Sleep quality was assessed using a structured sleep assessment questionnaire that included subjective sleep quality, sleep duration, sleep latency, sleep disturbances, and daytime dysfunction. Each item was scored on a 4-point scale, and a composite sleep score ranging from 0–15 was calculated. Follow-up parts evaluated the use of melatonin gummies, prevalence, frequency, length, and time of initiation concerning the COVID-19 pandemic. A risk score was created by evaluating self-medication behavior using consultation practices, sources of information and awareness of dosage. Other sections addressed use reasons, self-reported adverse effects and lifestyle e.g., stress levels and screen time before sleep that were compared in relation to quality of sleep.

Statistical Analysis

Statistical analysis was performed by IBM SPSS 21. Categorical variables like age, gender, education, occupation, sleep quality, melatonin use, and self-medication practices were summarized using descriptive statistics which were summarized in frequencies and percentages and presented in tables and figures. Sleep quality was classified into good sleep, mild sleep disturbance, and poor sleep categories according to composite sleep scores obtained from the structured sleep assessment questionnaire. The Chi-square test was used in inferential analysis to identify the relationship between categorical variables, such as sleep quality and melatonin use, risk of self-medication and adverse effects, and lifestyle factors, i.e. the level of stress and screen time in relation to sleep quality. A p-value of below 0.05 was taken as statistically significant and results were interpreted accordingly without assuming any causality because the design of the study was cross-sectional.

RESULTS

A total of 1,450 participants were included in the study with overall mean age of 24 ± 2.63.

Table 1. Socio-demographic Profile and Sleep Quality of Participants (N = 1450)

Variable	Category	N	%
Age (years)	18–21	492	33.9
	22–25	479	33.0
	26–30	479	33.0
Gender	Male	643	44.3
	Female	803	55.4
	Prefer not to say	04	0.3
Education	Undergraduate	369	25.4
	Graduate	361	24.9
	Postgraduate	356	24.6
	Other	364	25.1
Occupation	Student	366	25.2
	Employed	354	24.4
	Unemployed	370	25.5
	Other	360	24.8
Sleep Quality (Self-developed sleep assessment scale)	Good sleep (0–4)	235	16.2
	Mild disturbance (5–9)	719	49.6
	Poor sleep (10–15)	496	34.2
Melatonin Gummy Use	Yes	789	54.4
	No	661	45.6

Table 1. The age distribution was evenly divided among three groups: 18–21 years (n = 492, 33.9%), 22–25 years (n = 479, 33.0%), and 26–30 years (n = 479, 33.0%). The sample comprised males (n = 643, 44.3%) and females (n = 803, 55.4%), while a small proportion preferred not to disclose their gender (n = 4, 0.3%). Educational attainment was evenly distributed across undergraduate (n = 369, 25.4%), graduate (n = 361, 24.9%), postgraduate (n = 356, 24.6%), and other categories (n = 364, 25.1%). Similarly, occupational status included students (n = 366, 25.2%), employed individuals (n = 354, 24.4%), unemployed individuals (n = 370, 25.5%), and other categories (n = 360, 24.8%). Regarding sleep quality measured using the self-developed sleep assessment scale, the respondents rated their sleep as good (n = 235, 16.2%), mildly disturbed (n = 719, 49.6%), and poor (n = 496, 34.2%). Moreover, more than half of the participants (n = 789, 54.4%), and the rest (n = 661, 45.6) did not use melatonin gummies.

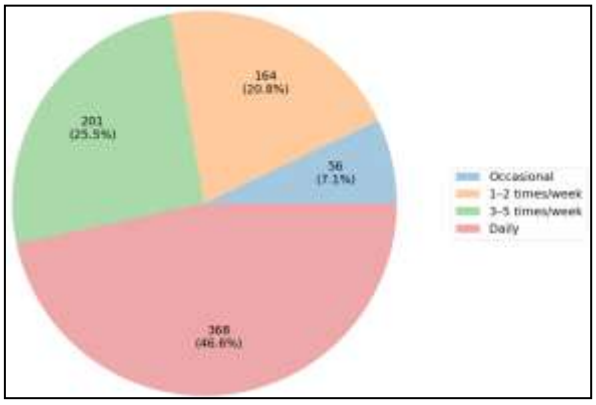

Figure 1. Frequency of Melatonin Gummy Use among Participants (n = 789)

The frequency of the use of melatonin gummies among the participants is shown in figure 1. Among users, the most common pattern was daily use (n = 368, 46.6%), followed by use 3–5 times per week (n = 201, 25.5%) and 1–2 times per week (n = 164, 20.8%). A lower percentage of the participants (n = 56, 7.1%) reported occasional use.

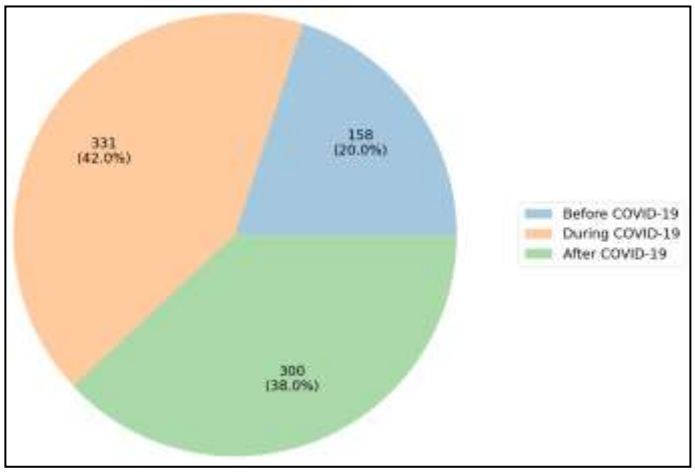

Figure 2. Timing of Initiation of Melatonin Gummy Use among Users (n = 789)

Figure 2 shows the initiation date of the use of melatonin gummies among the respondents who reported the use (n = 789). Most of the users started using melatonin during the COVID-19 period (n = 331, 42.0%), after COVID-19 (n = 300, 38.0%), and only a smaller percentage started using it before the COVID-19 period (n = 158, 20.0%).

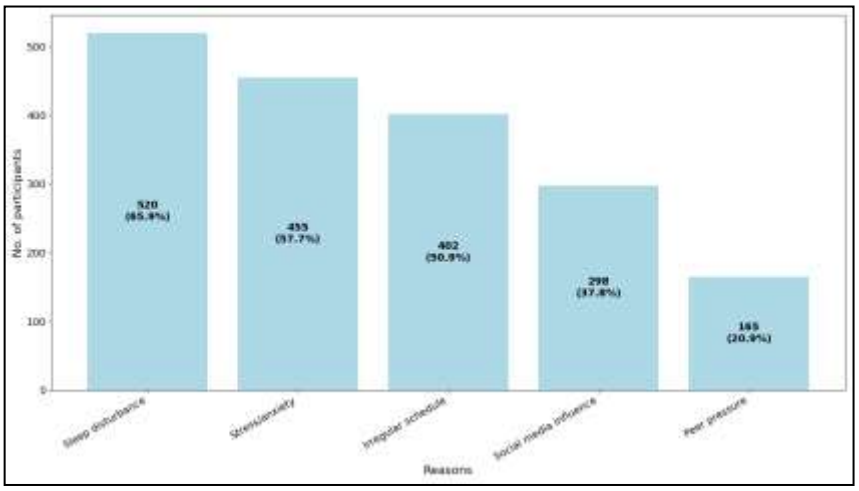

Figure 3. Reasons for melatonin gummy use (n = 789)

Figure 3 shows the reasons for melatonin gummy use among those respondents who reported the use (n = 789). The most commonly reported reason was sleep disturbance (n = 520, 65.9%), followed by stress or anxiety (n = 455, 57.7%), and irregular schedules (n = 402, 50.9%). A significant percentage of participants (n = 298, 37.8%), reported social media influence, which was the least reported reason (n = 165, 20.9%).

Table 2. Association between Sleep Quality and Melatonin Gummy Use (N = 1450)

Sleep Quality	Non-Users (n = 661)	Users (n = 789)	Total
Good sleep	210 (31.8%)	25 (3.2%)	235
Mild disturbance	365 (55.2%)	354 (44.9%)	719
Poor sleep	86 (13.0%)	410 (52.0%)	496
Chi-square (df)	412.6 (2)		
p-value	<0.001*		

Table 2 shows the association between sleep quality and use of melatonin gummy among the participants (N = 1,450). Among non-users (n = 661), the majority reported mild sleep disturbance (n = 365, 55.2%), followed by good sleep (n = 210, 31.8%) and poor sleep (n = 86, 13.0%). Conversely, among the users (n = 789), more than half reported having poor sleep quality (n = 410, 52.0%), then the mild disturbance (n = 354, 44.9%), with only a small percentage reporting the good sleep (n = 25, 3.2%). A chi-square test of independence revealed a statistically significant relationship between the quality of sleep and the use of melatonin gummies, (χ^2 (2) = 412.6, $p < 0.001$*), which showed that poor sleep quality had a statistically significant relationship with increased melatonin gummy use.

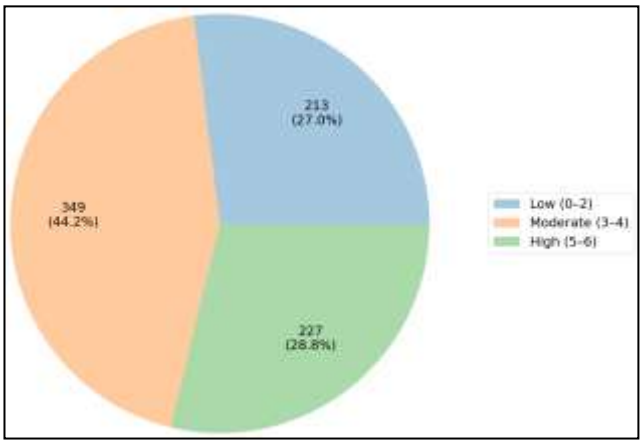

Figure 4. Distribution of Self-Medication Risk among Melatonin Users (n = 789)

Figure 4 shows the trend of self-medication risk among the users of melatonin gummies (n = 789). The highest percentage of respondents was in the moderate risk group (n = 349, 44.3%), then the high-risk group (n = 227, 28.7%), and lastly the low-risk group (n = 213, 27.0%). It shows that a significant percentage of the users were moderate to high-risk self-medication.

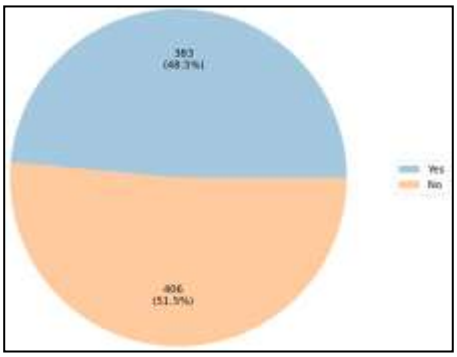

Figure 5. Prevalence of Adverse Effects among Melatonin Users (n = 789)

Figure 5 presents the prevalence of adverse effects among melatonin gummy users (n = 789). Nearly half of the participants reported experiencing adverse effects (n = 383, 48.5%), while a slightly higher proportion reported no adverse effects (n = 406, 51.5%).

Table 3. Association between Self-Medication Risk and Adverse Effects Among Melatonin Users (n = 789)

Self-Medication Risk	No Adverse Effects (n = 406)	Adverse Effects (n = 383)	Total
Low risk	150 (36.9%)	63 (16.4%)	213
Moderate risk	180 (44.3%)	169 (44.1%)	349
High risk	76 (18.7%)	151 (39.4%)	227
Chi-square (df)	137.5 (2)		
p-value	<0.001*		

Table 3 includes the association between the risk of self-medication and adverse effects of melatonin gummies users (n = 789). Among participants reporting no adverse effects (n = 406), the majority were in the moderate risk category (n = 180, 44.3%), followed by low risk (n = 150, 36.9%) and high risk (n = 76, 18.7%). Conversely, in the cases of those reporting adverse effects (n = 383, 48.5%) the highest percentage of the population was in the moderate risk group (n = 169, 44.1%), with the next highest proportion in the high-risk group (n = 151, 39.4%), and the lowest percentage was in the low-risk category (n = 63, 16.4%). A chi-square test of independence showed that self-medication risk and the prevalence of adverse effects were statistically significantly related, (χ^2 (2) = 137.5, $p < 0.001$*), and so the higher the self-medication risk, the higher the probability of experiencing adverse effects.

Table 4. Comparison of Lifestyle Factors between Melatonin Users and Non-Users (N = 1450)

General Stress Level	Melatonin		Chi-square (df)	p-value
	Non-Users (n = 661)	Users (n = 789)		
Low	210 (31.8%)	113 (14.3%)	96.4 (2)	<0.001*
Moderate	250 (37.8%)	261 (33.1%)		
High	201 (30.4%)	415 (52.6%)		
Screen time before bed				
<1 hour	210 (31.8%)	117 (14.8%)	121.7 (2)	<0.001*
1–2 hours	250 (37.8%)	230 (29.1%)		

>2 hours	201 (30.4%)	442 (56.0%)		

Table 4 shows the comparison of the lifestyle factors between melatonin users and non-users (N = 1,450). With respect to general stress levels, a greater percentage of melatonin users (n = 415, 52.6%) than non-users (n = 201, 30.4%) reported high levels of stress, and more non-users (n = 210, 31.8) than users (n = 113, 14.3%) reported low levels of stress. The relative moderate levels of stress were not much different between the two groups (non-users: n = 250, 37.8%, users: n = 261, 33.1%). The chi-square test showed that the level of stress and the use of melatonin were statistically related, (χ^2 (2) = 96.4, $p < 0.001$*).

Likewise, there were very strong variations in pre-bed screen time. A greater proportion of melatonin users reported more than 2 hours of screen time (n = 442, 56.0%) compared to non-users (n = 201, 30.4%), whereas shorter screen time (<1 hour) was more common among non-users (n = 210, 31.8%) than users (n = 117, 14.8%). The prevalence of participants with 1-2 hours of screen time also was higher among non-users (n = 250, 37.8%) as compared to users (n = 230, 29.1%). This was statistically significant, (χ^2 (2) = 121.7, $p < 0.001$*), which means that increased stress levels and increased screen time before bed were significantly related with the use of melatonin gummies.

DISCUSSION

The present study has discussed the frequency and trend of melatonin gummy consumption among Indian youth and how it correlates with the sleep quality, self-medication, and lifestyle among participants in the present study, the socio-demographic profile was well balanced in terms of age, gender, education, and occupation. The balanced sociodemographic distribution improved the representativeness and generalizability of the findings while minimizing demographic bias of the findings. The same trend is reflected in other research works involving online surveys among the young adults [9]. The present research study discovered a high prevalence of sleep disturbances where approximately half of the participants reported mild disturbance and more than one-third of the participants reported poor sleep quality. It is in line with the literature that documented more insomnia and disturbed sleep patterns among young adults during and after the pandemic [10]. An important result of the current research is that over fifty percent of the interviewees said that they used melatonin gummies, indicating a high prevalence of use. The frequency distribution with a significant percentage of daily users indicates that people do not use it occasionally but frequently. This is in line with results by Al-Naggar RA, Chen R. who reported that over-the-counter supplements were used more by the youth during the post-pandemic period [11]. The issue of self-medication is also worrying as noted in the present study, with most of the respondents being in moderate and high-risk groups. Almost fifty percent of the participants had adverse effects. Even though melatonin is usually regarded as relatively safe, these results indicate that its use ought not to be uncontrolled as it could lead to an amplification of side effects. This finding is supported by previous research, which showed variability in the content of melatonin supplement and dangers of its misuse [12]. Moreover, the current research illustrates that there is a strong association between the quality of sleep and the use of melatonin, where participants with poor sleep quality are more inclined to use melatonin. This result is not surprising since patients with sleeping problems tend to resort to drugs or supplementary treatment [13]. The time when melatonin was initiated as revealed in the present study also highlights the effect of the pandemic where most participants indicated that they started using melatonin during or after the COVID-19 time. This finding supports the concept of coronasomnia, in which stress, anxiety, and the interruption of normal activities contributed to sleep disturbances and eventual consumption of sleep aids [14]. Regarding the causes of use, sleep disturbance, stress/anxiety and irregular schedules were the most widespread ones, with the impact of social media playing a significant role. This shows that the clinical requirement and the behavioral factors also contribute to the usage of melatonin. The increasing influence of social media on health-related behaviors, especially in the youth, has been a highly recognized issue in the recent studies [15]. Another finding of the current research was a strong relationship between increased risk of self-medication and the presence of adverse effects. The participants of the high-risk group also reported considerably more side effects than those of the low-risk group, which indicates that wrongful or unmonitored use leads to adverse outcomes [16]. Also, other lifestyle changes, including stress levels and time spent in front of the screen before sleeping, had a great effect on the quality of sleep. Poor sleep outcomes were associated with the increase in the levels of stress and long screen time. These results align with what has been found in past studies in which an association between screen time and sleep disturbance was established and literature reports stressful experiences as a major determinant of sleep quality [17]. Altogether, the results of the current research point at the presence of a complicated interconnection between sleeping problems, lifestyle habits and melatonin consumption in young people. The rise in the use of melatonin gummies, especially in the wake of the COVID-19 pandemic, highlights the fact that self-medication is becoming increasingly more of a trend that is driven by both social and psychological issues. Although the use of melatonin can have temporary positive effects, its unsupervised administration raises important concerns in terms of safety and necessity of raising awareness and regulation levels. [18,19]. A high prevalence of taking melatonin gummies without a professional medical recommendation requires a critical analysis of the labeling accuracy of the product and the possible consequences of taking it over the long term in this group of people [20]. All in all, this evidence supports the idea of the dire necessity of balanced awareness, responsible melatonin usage, and greater emphasis on underlying lifestyle factors that lead to sleep disorders in youth.

CONCLUSION

The current study showed a high prevalence of melatonin gummy use among youth in India and a significant number of them using these products for self-medication without any medical advice. Increased melatonin use was significantly associated with poor sleep quality, indicating that melatonin supplements are more likely to be used by persons with

existing sleep issues. The COVID-19 pandemic seemed to have had a significant effect as a catalyst for starting and boosting melatonin intake, which is consistent with the overall effect on sleep and mental health. Important safety concerns were identified, given the size of the self-medication groups of moderate and high risk, as well as the high proportion of participants stating that they had experienced adverse effects. Additionally, lifestyle factors like high levels of stress and extended hours of screen use prior to bedtime were significantly linked with melatonin use and poor sleep quality. The results highlight the importance of increasing public awareness of the potential risks of melatonin supplements and their appropriate use, as well as effective regulation of OTC supplements and the promotion of non-pharmaceutical interventions (NPIs) for sleep health that include better sleep hygiene, stress management and less screen time exposure for youth.

Limitations

The findings of the present study are subject to several limitations: First, the cross-sectional nature of the study does not permit the establishment of cause-and-effect relations among the use of melatonin gummies, sleep quality, various lifestyle factors, and self-medication behaviors. Second, the data was self-administered online questionnaire and may be vulnerable to recall bias, reporting bias and social desirability bias. Thirdly, the use of convenience sampling using social media could have skewed towards selection bias and restricted the findings to Indian youth population and not the wider population, especially those with limited internet access and digital literacy.

Although the questionnaire demonstrated acceptable internal consistency and was pilot tested prior to the study, it was not a formally validated psychometric instrument, which may limit comparability with standardized sleep assessment tools. In addition, information on precise melatonin concentration, differences in formulation, long-term usage and the potential for simultaneous administration of other sleep drugs was not evaluated. Lastly, psychological factors (anxiety, depression and academic stress) were not assessed separately, and this can also affect sleep quality and melatonin consumption.

Declarations

Ethics approval and consent to participate

This study was approved by Acharya Shri Chander College of Medical Sciences and Hospital, Jammu, India, Institutional Independent Ethics Committee, ASCOMS/IEC/2025/Meeting-II/FM/29 dated 18/09/2025. All participants gave informed consent electronically before participating in the study.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed in the current study are available, upon reasonable request, from the corresponding author.

Competing interests

The authors declare that there are no competing interests.

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Questionnaire with Scoring System
Title: Self-medication with Melatonin Gummies among Indian Youth

Section	Question/Domain	Response Options	Scoring
Section 1: Consent	Participation consent	Yes / No	Non-scoring
Section 2: Socio-demographic Details	Age	18–21 / 22–25 / 26–30	Non-scoring
	Gender	Male / Female / Prefer not to say	Non-scoring
	Education	Undergraduate / Graduate / Postgraduate / Other	Non-scoring
	Occupation	Student / Employed / Unemployed / Other	Non-scoring
Section 3: Sleep Quality Assessment Questionnaire	Subjective sleep quality	Very good / Fairly good / Fairly bad / Very bad	0–3
	Sleep duration	≥7 h / 6–7 h / 5–6 h / <5 h	0–3
	Sleep latency	<15 min / 15–30 min / 30–60 min / >60 min	0–3
	Sleep disturbance	None / Once weekly / 2–3 times weekly / ≥4 times weekly	0–3
	Daytime dysfunction	None / Mild / Moderate / Severe	0–3
	Total Sleep Score	Range: 0–15	0–4 Good, 5–9 Mild, 10–15 Poor
Section 4: Melatonin Gummy Use	Ever used melatonin gummies	Yes / No	1 / 0
	Initiation of use	Before COVID-19 / During COVID-19 / After COVID-19	0–2
	Frequency of use	Occasional / 1–2 times weekly / 3–5 times weekly / Daily	0–3
	Duration of use	<1 month / 1–3 months / 3–6 months / >6 months	0–3
Section 5: Self-Medication Score	Consulted a doctor before using melatonin	Yes / No	0 / 1
	Source of information	Doctor / Social media / Friends / Pharmacy / Internet	0–4
	Awareness of dosage	Yes / No	0 / 1

	Total Self-Medication Score	Range: 0–6	0–2 Low, 3–4 Moderate, 5–6 High
Section 6: Reasons for Use	Main reasons	Sleep disturbance / Stress / Irregular schedule / Social media / Peer pressure / Other	Non-scoring
Section 7: Adverse Effects Score	Any side effects	Yes / No	1 / 0
	Number of reported adverse effects	Drowsiness / Headache / Dizziness / Nausea	0–4
	Adverse Effect Score	Range: 0–4	Higher score = more adverse effects
Section 8: COVID-19 Impact	Sleep pattern after COVID-19	Improved / No change / Worsened	0–2
	Melatonin initiated due to COVID-related sleep problems	Yes / No	1 / 0

Final Scoring Summary

Domain	Score Range	Interpretation
Sleep Quality Score	0–15	Higher = worse sleep
Self-medication	0–6	Higher = risky behavior
Adverse effects	0–4	Higher = more side effects