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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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ASSESSMENT OF MELATONIN USE PATTERNS, SAFETY, AND ATTITUDES TOWARD ITS USE IN ADULT POPULATION

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Abstract.

Background: Melatonin is an important neurohormones that regulate sleep. It is also considered as a dietary supplement that gained approval to be used without prescription to manage insomnia and other sleep disorders. However, melatonin inappropriate use is increasing which may lead to various negative consequences. This study aims to assess the patterns of melatonin use, its safety, and to determine the attitudes regarding its effectiveness and safety.

Materials and Methods: A cross-sectional study included a convenient sample of adults who are using melatonin was conducted from September to December 2025 at community pharmacies in Baghdad, Iraq. The survey consisted of three parts to collect socio-demographic, to assess the patterns and attitudes of participants regarding melatonin use, and to investigate the possible adverse effects.

Results: Participants' mean age was 28.54±10.4 years with females constituted 59% of the sample. The most common dose used was 5mg (33.6%), with 56.5% of users consumed melatonin as needed. Several side effects were reported, mainly drowsiness (28.8%) and headache (25.1%), with only 1.5% of the participants with no side effects. A significant proportion of participants, 83.8% agreed that melatonin improved their sleep quality, 78.2% of users considered melatonin to be safe to use, and 75.6% recommended melatonin to others. Age had a significant association with relying on melatonin for sleep, meanwhile sex was correlated to the belief that melatonin is safe to use. Working and educational status was correlated with the willingness to recommend melatonin to others and reliance on melatonin.

Conclusion: Melatonin is widely used and generally perceived as a safe and effective sleep aid, though notable variations in dosing, reliance, and misuse exist across demographic groups. The results highlight that specified education and clearer guidance are required to warrant safe, informed, and appropriate melatonin use, particularly among older adults and students.

Key words. Melatonin, use patterns, safety, attitudes.

Introduction.

Insomnia is described as either falling asleep or staying asleep difficulty [1]. There is a global increase in sleep disorders, such as obstructive sleep apnea, restless leg syndrome, and insomnia specially within communities with a sedentary lifestyle [2,3]. Melatonin is established to enhance sleep quality in insomnia, and other sleep disorders [3]. Factors that influence the long-term stability of insomnia include the recurrence of stressful events, concerns about sleep, maladaptive sleep habits or an intrinsic flaw in the mechanism for regulating sleep [4].

Melatonin is an indole-structured moiety. It was not until the middle of the 1960s that the assumption had arisen concerning the synthesis of this hormone exclusively within the pineal gland. At present, it is already known that this occurs in various other organs and tissues: such as the retina, harderian glands, bone marrow, and skin. Apart from these, it is also synthesized by the enterochromaffin cells of the cerebellum, GI tract, and immune system. Due to such numerous organs of synthesis and the absence of a defined target organ, melatonin cannot be considered a hormone in the classical sense. The synthesis and release of melatonin are under the control of the suprachiasmatic nucleus (SCN). Melatonin itself controls this SCN as well as the other numerous peripheral clocks within the body; hence, it behaves as a resynchronizer of the cycle [5,6].

Melatonin is regarded as a dietary supplement and is approved and used as an over the counter (OTC) medication by the U.S. Food and Drug Administration (FDA) [7]. Although the Iraqi Ministry of Health (MOH) has a standard regulations for the use of OTC and prescription-only medications (POM), enforcement of these regulations in community pharmacies has been inconsistent. Previous research has shown that numerous medications can be purchased easily even if they were POM, contributing to the high rates of self-medication among Iraqi population [8]. Such easy access to medication may impact melatonin use without medical supervision and may increase the “as needed” pattern of melatonin use. The current practice involves the use of melatonin in managing insomnia, jet lag, and other secondary sleep disorders including obstructive sleep apnea. It can be administered exogenously by different routes of administration including oral, sublingual, and transdermal patches [9]. The typical available doses used in various studies have a range of 0.1–10 mg [10].

Exogenous melatonin safety and effectiveness in circadian rhythm regulation in adults and children older than 11 years is established [7]. Moreover, melatonin impacts on sleep quality in insomnia, and sleep-related movement disorders were positive [1,7,11]. The current study aims to evaluate the patterns of melatonin use, its safety by monitoring the incidence of side effects, and to determine the attitudes regarding its effectiveness and safety.

Materials and Methods.

This study employs a clear and systematic approach to ensure the reliability and validity of the findings. Below are the components of the methodology:

Study site and design: A cross-sectional study implemented by direct interviews with adults of different ages was done from September to December 2025 using a data collection sheet. The study was conducted at community pharmacies in Al-Mansour and Al-Harthiya districts in Baghdad, Iraq

Population: A convenient sample of eligible adults who are using melatonin for at least one month duration and willing to participate and complete the research tool in a written format were included. A total of 271 adults of different age groups who agreed to participate in the study direct interviews on

weekdays were included. Interviews were administered, with the responses being recorded automatically. All participants provided informed consent to participate in this voluntary Endeavor.

Instrumentation: The questionnaire included socio-demographic information (age, gender, and working-educational status) as the first part. The second part, which is a pre-validated Arabic questionnaire adopted directly from literature [1], used to assess the patterns and the attitudes about using melatonin. No major modifications were made; however, two questions specifically related to the use of melatonin during exams periods were removed since the sample in the current study included participants from general population with different age groups. Since these deletions did not change the questionnaire's structure and the main domains, no additional revalidation was performed.

The survey is composed of 2 questions regarding pattern of use of melatonin such as how often it was used and the doses used. Another 5 close end questions to assess the attitudes of participants regarding its use. The term misuse was explained to participants according to the previously established indicators of misuse as the daily use of sleeping pills, their usage in larger amounts and above the recommended dosage, self-medication, and their use for recreational purposes [1]. The survey also includes a list of possible adverse effects including headache, dizziness, nightmares, mood changes, somnolence, constipation, appetite loss, and GI upset is the last part of the study instrument.

Statistical analysis: The data was entered, presented, and analysed by Statistical Packages for Social Science (IBM SPSS version 24, Chicago, IL, USA). Data is presented as frequencies, percentages, means, and standard deviation. The significance of difference in percentages (qualitative data) was tested using Chi-square test or Fisher Exact test whenever applicable. Statistical significance was considered whenever the P value was less than 0.05.

Ethical approval: The current study was approved by the Ethical Committee at the College of Pharmacy, University of Baghdad with the approval number (RECAUBCP99202506R) in 9/9/2025.

Results.

Overall, 340 students were requested to participate in the study, but only 271 individuals participated, which resulted in a response rate of 79.7%.

Demographic data of the participants: The participants' mean age of 28.54±10.4 years with ages ranged from 18 to 69 years. Age range of 20-29 years was the most common age group, meanwhile, females represented 59% of the study sample with most participants being college students (Table 1).

Patterns of melatonin use: The most commonly used melatonin dose was 5mg (33.6%), while only 14.8% used the higher dose of 10 mg. In terms of usage patterns, the majority of users reported consuming melatonin as needed (56.5%), (Table 2).

Side effects of melatonin use: Several side effects were reported by the participants, with the most common being drowsiness (28.8%). Followed by headache and fatigue. A very small percentage of participants reported experiencing no side effects (Table 3).

Attitudes to the safety and efficacy of melatonin use: A significant proportion of participants, 83.8%, agreed that melatonin improved their sleep quality. In terms of safety, 78.2% of individuals considered melatonin to be safe to use. Additionally, a large percentage, 75.6%, would recommend melatonin to others (Table 4).

Table 1. *Demographic Data of the Participants (n=271).*

Main Category	Subcategory	No.	%
Age (years)	18-19	13	4.8
	20-29	174	64.2
	30-39	47	17.3
	40-49	23	8.5
	50-59	6	2.2
	60-69	8	3.0
	Mean±SD: 28.54±10.4		
Sex	Male	111	41
	Female	160	59
Working/ Educational Status	Highschool student	2	0.7
	College student	141	52
	Graduate	36	13.3
	Worker	87	32.1
	Retired	5	1.9

Table 2. *Melatonin Use Patterns.*

Main Category	Subcategory	No.	%
The dosage of melatonin used (mg)	1	63	23.2
	3	77	28.4
	5	91	33.6
	10	40	14.8
Pattern of use among users	As needed	153	56.5
	Daily	118	43.5

Table 3. *Melatonin use side effects.*

Main Category	Subcategory	No.	%
Side effects*	Anxiety	16	5.9
	Fatigue	41	15.1
	Headache	68	25.1
	Nausea	32	11.8
	Drowsiness	78	28.8
	Dizziness	35	11.4
	Muscle pain	26	9.6
	Abdominal cramps	9	3.3
	Nightmares	16	5.9
	Depression	12	4.4
	Chills	12	4.4
	None	4	1.5
*Many participants experienced more than one side effect.			

Table 4. *Attitude to the safety and effectiveness of exogenous melatonin use (n = 271).*

Attitude	Agree	Disagree
Melatonin has improved the sleep quality	227 (83.8%)	44 (16.2%)
Melatonin is safe to use	212 (78.2%)	59 (21.8%)
Recommend melatonin to other people	205 (75.6%)	66 (24.4%)
Ever misused melatonin	50 (18.5%)	221 (81.5%)
I rely on Melatonin to sleep	106 (39.1%)	165 (60.9%)

Table 5. *Associations of Demographic Characteristics with Melatonin Dose and Use Patterns.*

Main Category	Sub-category	Melatonin Dose Used				P-value	Pattern of use		P-value
		1 mg n(%)	3 mg n(%)	5 mg n(%)	10mg n(%)		As needed n(%)	Daily n(%)	
Age (years)	18-19	3(23)	4(30.8)	5(38.5)	1(7.7)	0.234†	8(61.5)	5(38.5)	0.558†
	20-29	49(28.2)	47(27)	59(33.9)	19(10.9)		91(52.3)	83(47.7)	
	30-39	8(17)	15(31.9)	15(31.9)	9(19.2)		31(66)	16(34)	
	40-49	3(13)	5(21.8)	8(34.8)	7(30.4)		15(65.2)	8(34.8)	
	50-59	0(0)	3(50)	2(33.3)	1(16.7)		3(50)	3(50)	
	60-69	0(0)	3(37.5)	2(25)	3(37.5)		5(62.5)	3(37.5)	
Sex	Male	17(15.3)	24(21.6)	43(38.8)	27(24.3)	<0.001#	58(52.25)	53(47.75)	0.245#
	Female	46(28.8)	53(33,1)	48(30)	13(8.1)		95(59.4)	65(40.6)	
Working/ Educational Status	Highschool student	0(0)	1(50)	1(50)	0(0)	<0.001†	1(50)	1(50)	<0.001†
	College student	42(29.8)	39(27.7)	43(30.5)	17(12)		67(47.5)	74(52.5)	
	Graduate	2(5.5)	14(38.9)	20(55.6)	0(0)		30(83.3)	6(16.7)	
	Worker	19(21.8)	19(21.8)	26(30)	23(26.4)		51(58.6)	36(41.4)	
	Retired	0(0)	4(80)	1(20)	0(0)		4(80)	1(20)	
#: Chi-square test was used. †: Fisher Exact Test was used									

Table 6. *Associations of Demographic Characteristics with Melatonin Use Attitudes.*

Main Category	Sub-category	Melatonin Improved Sleep Quality		P-value	Melatonin is Safe to Use		P-value	Recommend melatonin to other people		P-value
		Agree n(%)	Disagree n(%)		Agree n(%)	Disagree n(%)		Agree n(%)	Disagree n(%)	
Age (years)	18-19	11 (84.6)	2 (15.4)	0.128†	10 (76.9)	3 (23.1)	0.189†	8 (61.5)	5 (31.5)	0.730†
	20-29	150 (86.2)	24 (13.8)		130 (74.7)	44(25.3)		136 (78.2)	38 (21.8)	
	30-39	34 (72.3)	13 (27.7)		41 (87.2)	6(12.8)		34 (72.3)	13 (27.7)	
	40-49	18 (78.3)	5 (21.7)		20 (87)	3(13)		16(69.6)	7 (30.4)	
	50-59	6 (100)	0 (0)		6 (100)	0 (0)		5 (83.3)	1 (16.7)	
	60-69	8 (100)	0 (0)		5 (62.5)	3 (37.5)		6 (75)	2 (25)	
Sex	Male	90 (81.1)	21 (18.9)	0.319#	94 (84.7)	17 (15.3)	0.032#	83 (74.8)	28 (25.2)	0.781#
	Female	137 (85.6)	23 (14.4)		118 (73.75)	42 (26.25)		122 (76.25)	38(23.75)	
Working/ Educational Status	Highschool student	2 (100)	0 (0)	0.436†	2(100)	0 (0)	0.603†	2 (100)	0(0)	0.013†
	College student	120 (85.1)	21 (14.9)		110 (78)	31 (22)		115 (81.6)	26(18.4)	
	Graduate	27 (75)	9 (25)		30 (83.3)	6 (16.7)		20 (55.6)	16(44.4)	
	Worker	73 (83.9)	14 (16.1)		67 (77)	20 (23)		64 (73.6)	23(26.4)	
	Retired	5 (100)	0 (0)		3 (60)	2 (40)		4 (80)	1(20)	
#: Chi-square test was used. †: Fisher Exact Test was used										

Table 6. *Associations of Demographic Characteristics with Melatonin Use Attitudes (Cont.)*

Main Category	Sub-category	Ever Misused Melatonin		P-value	I Rely on Melatonin to Sleep		P-value
		Agree n(%)	Disagree n(%)		Agree n(%)	Disagree n(%)	
Age (years)	18-19	3(23.1)	10(76.9)	0.360†	7(53.8)	6(46.2)	0.003†
	20-29	32(18.4)	142(81.6)		70(40.2)	104(59.8)	
	30-39	6(12.8)	41(87.2)		18(38.3)	29(61.7)	
	40-49	4(17.4)	19(82.6)		4(17.4)	19(82.6)	
	50-59	3(50)	3(50)		0(0)	6(100)	
	60-69	2(25)	6 (75)		7(87.5)	1(12.5)	
Sex	Male	24(21.6)	87 (78.4)	0.262#	37(33.3)	74(66.7)	0.104#
	Female	26(16.25)	134(83.75)		69(43.1)	91(56.9)	
Working/ Educational Status	High school student	1(50)	1(050)	0.847†	2(100)	0(0)	0.016†
	College student	28(19.9)	113(80.1)		63(44.7)	78(55.3)	
	Graduate	6(16.7)	30(83.3)		9(25)	27(75)	
	Worker	15(17.2)	72(82.8)		28(32.2)	59(67.8)	
	Retired	0(0)	5(100)		4(80)	1(20)	
#: Chi-square test was used. †: Fisher Exact Test was used							

Demographic characteristics and melatonin: Melatonin dose was significantly affected by sex and working/educational status. Moreover, there was a significant difference in melatonin use patterns across working status of the participants (Table 5).

Demographic characteristics and attitudes toward melatonin use: Table 6 showed a statistically significant associations throughout various demographic characteristics. Age showed a significant association with relying on melatonin for sleep (p-value = 0.004), with the highest reliance observed among individuals aged 60–69. Sex was significantly related to the belief that melatonin is safe to use (p-value=0.032), with males showing higher agreement than females. Working status was also significantly associated with willingness to recommend melatonin to others (p-value=0.022), as high-school students and retirees exhibited general positive attitudes compared with lower agreement among graduates. In addition, working- educational status was further associated with reliance on melatonin (p = 0.010), where high-school students again reported full agreement, while reliance was lowest among graduates and workers. No other demographic factors demonstrated statistically significant relationships with melatonin-related attitudes or behaviours.

Discussion.

The outcomes revealed by the current study gave important insights into the prevalence, use patterns, and perceptions toward melatonin among individuals suffering from sleep disorders.

The widespread melatonin self-medication, particularly on as needed basis, reflects its crucial role as a readily accessible sleep aid. This is consistent with prior studies that indicated melatonin growing popularity as a non-prescription supplement for managing sleep disorders [12,13]. Additionally, studies have demonstrated that melatonin is often used occasionally rather than as a long-term treatment, emphasizing the urge to understand its real-world consumption and potential consequences [14,15].

One important finding of this study is that 14,8% of participants consumed high doses of melatonin (10 mg), while average doses (1-5 mg) were the most used. Such distribution suggests awareness variability among users regarding the appropriate dose, which may be affected by many misconceptions about the dose-response association of melatonin. According to literature, lower doses (0.3-1 mg) are effective in regulating circadian rhythms, meanwhile, higher doses may not always improve sleep quality and could increase the risks of adverse effects such as drowsiness and headaches [9]. This disparity in doses highlights the necessity for targeted educational endeavour to ensure that the consumers are informed about the optimal dosing practice and potential risks associated with excessive intake.

Particularly subject of debate in this study is melatonin safety, as the incidence of drowsiness and headache was relatively common in the study sample. According to former research, comparable findings were revealed as a systematic review of fifty clinical trials stated that the adverse effects of melatonin were short-lived, minor, and treatable [16]. Moreover, throughout thirty-seven randomized controlled trials in sleep disorders, common adverse events were daytime sleepiness, headache, dizziness, and other sleep related symptoms, with very few serious or life-threatening events which resolved after stopping melatonin [17]. However, the reported side effects in the current study may be attributable to the symptoms of the underlying sleep disorder therefore direct causal relationship cannot be conclusively established in terms of distinguishing melatonin-linked side effects from other confounding factors related to sleep disorders. Nevertheless, the relatively high incidence of adverse events dictates for more strict guidelines on melatonin use, particularly concerning its prolonged consumption and future impact on endogenous melatonin production.

Concerning the attitudes toward the safety and effectiveness of melatonin, the majority of participants stated that melatonin improved their sleep quality, and it is safe to use, also they denied misusing melatonin. These results align with a meta-analysis that investigated the use of melatonin in primary sleep disorders. The results demonstrated melatonin efficacy in managing insomnia and circadian rhythm disorders as it reduced sleep onset latency but had a modest effect on total sleep duration [18].

Moreover, nearly 75.6% of melatonin users involved in this study recommended its use to other people, as there are a scarcity of regulatory control and a perceived perception of melatonin being a natural and safe supplement which led to the unmonitored wide use. Additionally, high trust in the effectiveness and tolerability of melatonin may explain its increasing popularity. However, despite the positive perceptions, frequent self-medication without medical supervision raises concerns about insufficiently studied potential drug-drug interactions and long-term effects [11]. Poza et al, who investigated melatonin use, reported that its efficacy was largely dependent on individual chronotype and baseline melatonin secretion patterns [11], which emphasize the complexity of melatonin's role in sleep regulation and the need for further research into its mechanisms of action and optimal usage strategies. Moreover, concerns about misuse were evident, with 18.5 % of users admitting the improper use, a figure that underscores the importance of addressing misinformation about melatonin's safety profile and its role in sleep regulation.

Gender differences in the melatonin doses were also significantly observed, with females being more likely to use the lower doses of the supplement, while the males revealed to use higher doses of 10mg more than females. This finding is compatible with prior studies indicating that women are more prone to use sleep aids, possibly due to higher rates of insomnia, anxiety, and depression among females [19], because hormonal transitions (menstruation, pregnancy, and menopause) increase women's sleep disturbance risk [20]. However, some studies have reported contrasting findings, suggesting that sleep aid use among men may be more prevalent in high-stress occupations or among individuals with irregular work schedules [21]. Future research should explore gender-specific factors influencing melatonin use to develop targeted interventions for improving sleep health across different demographics.

Working and educational status showed a significant impact on the melatonin use patterns and doses. As the educational level increased, the participants pattern of use tends to be as needed not on daily basis, with graduate being the most common group to use melatonin as needed (83.3%). Similarly, workers and retired participants showed to use melatonin as needed rather

than daily (58.6% and 80% respectively). There is no direct research on how educational level shapes melatonin-specific use patterns. However, related evidence on education, medication use and health literacy suggests plausible links. Education improves skills such as information gathering and risk–benefit appraisal, which underlie appropriate medicine use [22]. Higher individual education is generally associated with lower overall medication count and less polypharmacy, likely via better health literacy, healthier behaviours, and more critical decision making about medicines [22].

When exploring the association between demographic characteristics and attitudes toward melatonin use, while highlighting how age, sex, and working/educational status relate to perceptions and behaviours surrounding melatonin. Overall, the findings suggest that while general attitudes toward melatonin are largely positive across demographic groups, certain aspects of melatonin use attitudes showed statistically significant differences.

When talking about age, a significant relation was found between age and reliance on melatonin to sleep. Older participants, particularly those aged 60–69 years, reported higher reliance on melatonin compared to younger age groups. This aligns with the results of a study included community-dwelling adults 65–79, that showed that about 30% of participants slept less than 7 hours daily, 13% reported frequent insomnia, 18% suffered from insomnia and poor sleep quality, and 9% have possible sleep apnoea symptoms [23]. This may reflect age-related sleep disturbances, which are more prevalent in older adults and carry important health risks; this may increase dependence on sleep aids such as melatonin which offers modest benefits with a relatively favourable safety profile in this age group but should not be the default solution or foster long-term dependence.

In terms of sex, a significant association was found between sex and perception of melatonin safety, with males more likely than females to agree that melatonin is safe to use. This difference may reflect variations in health risk perception or exposure to health information between sexes, as documented in previous health behaviour research. Multiple reviews and survey-based models report that men tend to underestimate their health risks and feel less worried about them, often linked to masculinity norms and identity protection motives [24,25]. Risk perception and acknowledging vulnerability can be seen as threatening to masculinity, which may dampen men's risk perception and information seeking [24].

For working and educational status, most attitudes did not differ significantly across groups. Notably, reliance on melatonin to sleep was significantly associated with working/educational status, with college students showing a higher tendency to rely on melatonin compared to other groups. This may be explained by irregular sleep schedules, academic stress, and lifestyle factors commonly experienced by students. Academic stress among university students is strongly associated with poor sleep quality, and students with higher stress levels are more likely to use melatonin [26]. Studies showed that melatonin users often report worse sleep and higher stress than non-users, implying that melatonin is used as a coping strategy rather than as a solution, and that stress varied according to academic workload, GPA and major; and is generally higher among female students [27]. Irregular sleep schedules, late bedtimes, screen use, and caffeine intake are common in college life and further disrupt sleep, together, all these factors create a pathway linking academic stress to sleep problems and increased reliance on melatonin [26,27].

Additionally, a significant association was observed between working/educational status and recommending melatonin to others, with college students being more likely to recommend melatonin compared to graduates. This may indicate greater peer influence or normalization of supplement use within student populations. Melatonin is widely viewed as a safe OTC aid for circadian disruption and insomnia, with meta-analysis showing modest improvement in sleep quality in adults as its non-prescription status and safety profile make it especially easy to share and recommend informally among peers [3,28].

Overall, these findings indicate that while melatonin is generally viewed positively across demographic groups, age, sex, and educational and occupational status influence specific attitudes, particularly reliance on melatonin, safety perceptions, and willingness to recommend its use. These results underscore the importance of tailoring educational and clinical guidance of melatonin use to specific demographic groups, especially older adults and students, to promote informed and appropriate use. Further studies using longitudinal designs are recommended to better understand causality and changes in attitudes over time.

The study has several limitations that should be acknowledged. Using a convenient sampling may not fully capture the diversity of target population. As a result, the age groups captured by this study might skew the results toward the most predominant group (college students) which might resulted in bias. Therefore, the results may not be fully generalizable to overall adult population. In addition, the study was conducted within two regions only, which may limit its applicability to individuals from different cultural, social, or healthcare backgrounds. The predominance of college students in the sample could also skew the results toward younger and more educated individuals.

Another limitation is the potential underreporting of melatonin misuse, as participants may have withheld information due to stigma or concerns about judgment, leading to an incomplete comprehension of improper usage patterns. Furthermore, although the study collected data on adverse effects, it did not assess the severity or duration in details, restricting the ability to evaluate their full impact on melatonin users' experiences. Lastly, the study relied on self-reported data rather than clinical assessments or objective sleep quality measures, which could result in discrepancies between perceived improvements and actual physiological outcomes.

These limitations highlight the need for further research incorporating broader sample, objective clinical measures, and more detailed assessments of adverse effects to enhance the validity and applicability of the findings. Future studies are required with larger sample size and involvement of multiple regions and governorates, together with focusing on the limitations of the current study to strengthen the results.

Conclusion.

The current study revealed the widespread use of melatonin as a readily accessible sleep aid, which was found to be mostly used

as needed, with a general positive perception of its effectiveness and safety. However, a notable variation in used doses and reported side effects were seen. Age, sex, and occupational or educational status significantly impacted use patterns, reliance and attitudes toward melatonin. Despite that most users reported perceived benefits, the presence of side effects and misuse underscores the knowledge gaps about appropriate dosing and prolonged use. To sum up, the results emphasize the need for targeted education and clearer guidance to improve informed, safe and proper melatonin use among different population groups.

Conflicts of interest: None to declare

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process:

During the preparation of this work, the author used [Quill Bot] to rephrase. After using this tool/service, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

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