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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.

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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 პოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენოპა არ უნდა აღემატეპოდეს 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.

Содержание:

Hua-Ting Bi, Yan Wang, Ting-Ting Wang. EFFICACY AND PROGNOSIS OF ANTI-VEGF AGENTS COMBINED WITH PANRETINAL PHOTOCOAGULATION IN DIABETIC RETINOPATHY: A CLINICAL OBSERVATIONAL STUDY
Askhat Z. Bralov, Ruslan A. Nurakhunov, Magzhan S. Sadykov, Assiya Marat Issayeva, Saule M. Mardenova, Galymzhan G. Gallamov, Daniyar B. Amangaliyev, Arina A. Kirdyaikina, Assiya K. Mirtayeva, Svetlana I. Kuzmenko, Madina M. Abduyeva, Dinara Zh. Akhmetova, Yestay Sh. Abzalbek.
A RARE CASE OF PULMONARY ARTERY INTIMAL SARCOMA: A DIAGNOSTIC CHALLENGE9-12
Ana Kokhreidze, lali Saginadze, Rusudan Kvanchaxadze, Marine Gordeladze, Shota Janjgava, Iamze Taboridze. THE HIDDEN LINK: HOW VITAMIN D AND ZINC INFLUENCE GROWTH AND MENTAL HEALTH IN CHILDREN13-19
Tereza Azatyan. ANALYSIS OF THE RESEARCH STUDY OF THE PECULIARITIES OF INTERHEMISPHERIC ASYMMETRY AND INTERHEMISPHERIC INTERACTION OF NORMAL AND CHILDREN WITH INTELLECTUAL DISABILITIES
Kaltrina Veseli, Fehim Haliti, Enis Veseli, Art Berisha, Argjira Veseli, Edona Breznica, Arta Veseli. CRANIAL MORPHOMETRY: COMPARING TRADITIONAL METHODS AND 3D SCANNERS25-30
Vadym Korniichuk, Anna Brodskaya, Igor Verbitskiy, Andrii Kurmanskyi, Petro Honcharenko. CUTTING-EDGE STRATEGIES IN CONTEMPORARY LAPAROTOMIC SURGERY: EMERGING TECHNOLOGIES, TECHNIQUES, AND FUTURE ADVANCEMENTS
Eris Ranxha, Drilona Kënga, Oneda Çibuku, Entela Basha, Gentian Vyshka. DISCONTINUATION OF ANTIEPILEPTIC DRUGS AFTER EMBOLIZATION OF DURAL ARTERIOVENOUS FISTULAS
Imasheva Bayan Imashkyzy, Kamaliev Maksut Adilkhanovich, Lokshin Vyacheslav Notanovich, Narymbaeva Nazerke Nurmagambetovna, Yerkenova Sandugash Yerkenkyzy.
2012-2022
Skander MSOLLY, Emna BORNAZ, Haifa ABDESSLEM, Kamilia OUNAISSA, Chiraz AMROUCHE. EVALUATION OF SEXUAL DISORDERS IN DIABETIC WOMEN BEFORE MENOPAUSE: ASSOCIATED FACTORS AND DETERMINATINGTHRESHOLDS
Khabadze Z.S, Bakaev Yu.A, Mordanov O.S, Lokhonina A.V, Ivina A.A, Badalov F.V, Umarov A.Yu, Wehbe Ahmad, Kakabadze E.M, Dashtieva M.Yu. ANALYSIS OF STROMAL CELL CULTURE PROLIFERATION BIOMARKER USING MEDICAL ADHESIVES
Anfal Kadhim Abed. A STUDY OF THE EFFECT OF CA15-3 LEVELS AND APELIN PEPTIDE ON SOME BIOCHEMICAL VARIABLES IN PATIENTS WITH BREAST CANCER IN BAQUBAH CITY
Lian-Ping He, Xiang-Hu Wang, Cui-Ping Li, Jun-Hong Lin, Ling-Ling Zhou, Guang Chen. AN INSTRUCTIONAL DESIGN PROCESS FOR TEACHING MEDICAL STUDENTS HOW WILCOXON RANK SUM TEST ARE EXPLAINED
Adelina Ahmeti-Pronaj, Art Uka, Lirim Isufi. THE URBAN BATTLEFIELD OF THE MIND: ENVIRONMENTAL INFLUENCE ON ADHD AND EXECUTIVE FUNCTIONS IN ADOLESCENTS
Sofia E. Romero, Jose Antonio Paredes, Ximena Espillco, Julia Moya, Ricardo Rodriguez, Walter Gomez-Gonzales. T LYMPHOCYTE LEVELS PRE AND POST VITAMIN C INFUSION IN PEOPLE NOT INFECTED WITH SARS-COV-2
Nebogova K.A, Mkrtchyan L.K, Karapetyan A.G, Simonyan K.V, Danielyan M.H. DETERMINATION OF CHARACTERISTIC CHANGES IN FOOT MORPHOMETRIC PARAMETERS IN OVERWEIGHT ARMENIAN ETHNIC GIRLS OF THE SAME SOMATOTYPE AND AGE GROUP
Li Rui, Zhuo Pengpeng, Wen Wenjie. JAG2 AS A KEY MEDIATOR IN PORPHYROMONAS GINGIVALIS-INDUCED PERIODONTAL INFLAMMATION
Tian-Hua Du, Er-Gang Zhu, Guang-Ren Zhu, Shou-Zhi Wu, Hai-Ning Ni. RESEARCH ON THE PATH OF COMBINING PHYSICAL EDUCATION CLASS WITH "HAPPY RUN" TO IMPROVE STUDENTS' PHYSICAL FITNESS TEST SCORES IN MEDICAL COLLEGES
Sameer Mohammed MAHMOOD, Zaid Muwafaq YOUNUS, Manal Abdulmunem IBRAHIM, Hiba Radhwan TAWFEEQ. CARNOSINE VARIATIONS IN MALES: THE ROLE OF BMI AND VITAMIN D STATUS100-105
Khabadze Z.S, Bakaev Yu.A, Mordanov O.S, Magomedov O.I, Ivina A.A, Inozemtseva K.S, Badalov F.V, Umarov A.Yu, Wehbe Ahmad, Kakabadze E.M, Dashtieva M.Yu.
SURGERY

Davydova Z.V, Pustova N.O, Popova N.G, Kachailo I.A, Gulbs O.A, Dikhtyarenko S.Yu, Lantukh V.V, Minin M.O, Torianyk I.I, Gargin V.V. SOCIOCULTURAL IMPACT ON STUDENTS IN A STRESSFUL ENVIRONMENT: MEDICAL AND PSYCHOLOGICAL ASPECT
Tevzadze M, Kakhadze S, Janjghava Sh, Vashakmadze N, Khurodze T, Gulua N. DIAGNOSTIC VALUE OF PHOTON-EMISSION COMPUTED TOMOGRAPHY IN THE DIAGNOSIS OF THYROID GLAND DISEASES
Mohammed Mosleh Shwaish, Muhammed Malik Askar, Mustafa Adnan Abed Al-Qaysi. IMPLICATIONS OF SYZYGIUM AROMATICUM EXTRACTS TO REDUCE MULTI-DRUG RESISTANCE OF KLEBSIELLA PNEUMONIAE IN INDUCED URINARY TRACT INFECTION OF FEMALE RATS
Z.S. Khabadze, A.V. Vasilyev, A.A. Kulikova, Yu.A. Generalova, M.U. Dashtieva, Yu.A. Bakaev, A.Yu. Umarov, F.V. Badalov, A. Wehbe, I.V. Bagdasarova. ANALYSIS OF PERIODONTAL POCKET MICROBIOTA IN PATIENTS WITH CHRONIC GENERALIZED PERIODONTITIS135-142
Maysaloon Shaman Saeed, Rasha Nadeem Ahmed, Heba Khaled Hatem, Waseem H. Alkhaffaf. CLINICAL AND RADIOLOGICAL PROFILE OF PATIENTS PRESENTING WITH CEREBROVASCULAR ACCIDENTS: A CROSS- SECTIONALSTUDY
Narine Harutyunyan, Lusine Stepanyan. FAMILY ROLES AND CAREER PRIORITIES AS PREDICTORS OF FAMILY WELL BEING
Liuxia Shi, Yi Wei, Hongqing Yu, Mengchao Xiao, Xue Chen, Pengpeng Zhuo, Yuelong Jin, Jian Zhai. RELATIONSHIP BETWEEN LIPID PROFILES AND RISK OF HYPERGLYCEMIA IN HYPERTENSIVE AND OBESITY PATIENTS: A MULTIVARIATE ANALYSIS
Iryna Dvulit, Nataliia Dymar, Petro Kuzyk, Inna Marush, Serhii Chugin. ALIGNMENT OF HEALTHCARE TRAINING CRITERIA IN UKRAINE WITH EUROPEAN STANDARDS
Yurevych N.O, Varzhapetian S.D, Buniatian Kh.A, Khotimska Yu.V, Sukhina I.S, Kuzmenko N.M, Trach O.O, Alekseeva V.V. CT-BASED STUDY OF ANATOMICAL VARIATIONS IN CHRONIC RHINOSINUSITIS PATIENTS
Izmaylov Nikita P, Abduragimov Abduragim M, Platonova Ekaterina A, Evchenko Daniil A, Bogatyrev Gennady S, Isakova Margarita S, Avtsinov Fedor O, Ershova Mariia A, Shingarev Fedor A, Yakhyaeva Nargiz T. COMPREHENSIVE ASSESSMENT OF VEGETATIVE AND NOCICEPTIVE STATUS IN PATIENTS WITH CARDIAC ARRHYTHMIAS
Ruaa A. Hamid, Hadeel A. AL Sarraje, Suha M. Abdulla. AWARENESS, USE AND EFFECTIVENESS OF EMERGENCY CONTRACEPTION
Aigerim Utegenova, Gulnara Kassymova, Ildar Fakhradiyev. EXPERIENCE OF IMPLEMENTING DIGITAL TELEMEDICINE TECHNOLOGIES TO IMPROVE ACCESS TO CERVICAL CANCER SCREENING IN RURAL AREAS OF THE REPUBLIC OF KAZAKHSTAN
Ahmad Khaleel, Elene Nikoleishvili, Natia Kharati. DIFFERENT TYPES OF SCREEN BEHAVIOR AND THE DEVELOPMENT OF PSYCHIATRIC DISORDERS IN ADOLESCENCE AND ADULTS IN ADJARA
Walter Edgar Gomez-Gonzales, Juan Carlos Valencia Martínez, Luis Alberto Chihuantito-Abal, Jessika Corahua Ordoñez, Yeni Gutiérrez Acuña, Lidia Vargas Pancorbo, Maria Fatima Gómez-Livias. EPIDEMIOLOGICAL AND CLINICAL FACTORS ASSOCIATED WITH COVID-19 REINFECTION IN PATIENTS TREATED IN A HIGH- ALTITUDE REGION
Kaibkhanov Ulukhan K, Konyshev Mikhail V, Ovsienko Aleksei A, Khromov Artur M, Glushets Daria D, Molchanova Maria N, Meilikhovich Sofia A, Kopitko Olga N, Solomonenko Andrey V, Mamedova Roksana G, Larina Anna D, Boyko Valeria, Kutenko Anna I, Gaponova Natalia A, Ermolenko Ekaterina V. ENDOTHELIAL GLYCOCALYX AND ATHEROSCLEROSIS: FROM MOLECULAR MECHANISMS TO THERAPEUTIC
OPPORTUNITIES

DIFFERENT TYPES OF SCREEN BEHAVIOR AND THE DEVELOPMENT OF PSYCHIATRIC DISORDERS IN ADOLESCENCE AND ADULTS IN ADJARA

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Abstract.

Adolescents' daily lives have been greatly changed by the rapid spread of technology and the increased accessibility of screens. With the pervasive use of screens in daily life, understanding the relationship between screen habits and mental health is crucial. This research investigates the association between different types of screen behavior (social media, video games, and TV viewing) and mental health outcomes among adolescents in Adjara, Georgia. A cross-sectional method was used. A total of 384 samples were collected, and the study focused on two unique age groups, namely those aged 14 to 18 years and 19 to 24 years. The research revealed significant gender- and age-related differences in the association between screen behavior and mental health outcomes. The extensive users of social media, particularly females in the age group 19-24, have comparatively higher rates of depression identified through the self-report scale. Moreover, the research establishes a significant correlation between the levels of anxiety and the use of social networks and highlights the outcomes of screen time. Residency also appears to play the role of an independent variable that affects the mental health of teenage males, notably males aged 14-18, specifically in the context of self-esteem. Cultural and environmental differences such as differences between rural, high mountainous areas of Adjara, where people are more conservative and have less access to the internet, and the urban city center, where screen usage is more prevalent. These differences impacted self-esteem, with males in rural areas reporting higher self-esteem compared to their urban counterparts. Knowledge of these dynamics is crucial in constructing strategies that will ensure healthy screen habits and good mental health.

Key words. Screen behavior, psychiatric disorders, adolescents, social media, Adjara.

Introduction.

The integration of screens into human life has elicited alarm about the effects on mental health, particularly on teenagers and adults who are in the adolescent and adulthood phases, which predisposes them to several challenges. These challenges include the displacement of healthy activities such as physical exercise, face-to-face social interactions, and sleep, which are essential for psychological well-being [1]. Also, exposure to cyberbullying, which has been linked to anxiety and depression [2], and sleep disruption due to excessive screen time, particularly before bed [3]. It is believed that depression affects approximately 3.8% of the total world population and 5% of adults (4% of men and 6% of women), which makes up nearly 280 million people in the world [4]. In the United States, adolescents and adults are at a higher risk of developing anxiety and depression. 39.3% of adults said they had symptoms of anxiety and depression in 2021, a drop to 32% in 2023 [5]. The suicide difference between 2010 and 2015 was notably linked to females, especially spending more time on new media [6]. Screen behaviors vary between adolescents and young adults, with adolescents frequently engaging in social networking and gaming, while young adults use screens more for educational or business purposes. Screen-based behavior is defined by the time spent watching television, playing games, or using computers. It was found that various forms of screen use affect depression in different ways. One of the earlier systemic reviews of 70 studies revealed that computer use, together with video game playing, has been significantly linked with depression among youths [7]. Screen use is linked to various mental health issues, including anxiety such as generalized anxiety disorder (GAD), depression, and others. There is a positive relationship between the amount of time spent on smartphones, especially by youths, and their level of anxiety [8]. Checking for updates constantly or being overly preoccupied with posts on social media may contribute to anxiety and may lead to generalized anxiety disorders [8].

Some theories, such as the displacement hypothesis, present screen activity as displacing healthy activities, such as physical exercise, face-to-face social interactions, and sleep, causing depression [1]. For example, Valkenburg and Peter (2007) discovered that adolescents who spent more time online reported poorer levels of well-being, possibly because their online activities took up time that could have been spent on offline social contacts or physical activities. This hypothesis proposes that the negative impact of screen time on mental health is caused by the displacement of activities that enhance psychological resilience.

In contrast, the upward social comparison hypothesis holds that the effect of screen activity on depression depends on the content watched. This hypothesis says that individuals, especially adolescents and young adults, are prone to compare themselves to idealized images and lifestyles portrayed online, resulting in feelings of inadequacy, low self-esteem, and depression [9]. Vogel et al. (2014) concluded that frequent social media use is linked to increased social comparison, which predicts worse self-esteem and higher levels of depression. Social media platforms frequently promote curated and exaggerated portrayals of beauty, success, and happiness, exacerbating body image problems and contributing to the development of eating disorders [10]. While these theories offer a framework for analyzing the possible detrimental impacts of screen usage, empirical data is equivocal. Some studies have revealed considerable links between screen time and psychological difficulties, particularly among adolescents. For instance, [11] Liu et al. (2022) conducted a dose-response meta-analysis and found that adolescents who spent more than 2 hours per day on social media had a significantly higher risk of depression, with the risk increasing by approximately 60% for those in the highest usage categories (>5 hours per day) compared to low users (<1 hour per day). This effect was particularly pronounced among girls, who were more vulnerable to the negative mental health impacts of excessive social media use.

However, other studies have failed to find significant relationships between screen time and mental health outcomes. For example, Przybylski and Weinstein (2019) conducted a large population-based study of nearly 20,000 young children and found no consistent evidence linking digital screen time to poorer psychological well-being [12]. While very high levels of screen time (e.g., more than 7 hours per day) were associated with slightly lower well-being, the overall relationship was weak and inconsistent. A fundamental review of the evidence revealed that the association between social media use and mental health is very context-dependent, with some studies indicating positive impacts (e.g., increased social support) and others showing negative effects (e.g., increased anxiety). These contradictory findings imply that the association between screen time and mental health is moderated by a number of factors, including screen activity type, individual characteristics, and cultural setting.

The Adjara region of Georgia is experiencing an increase in screen use, particularly among adolescents and young people. According to the 2024 "Survey on Information and Communication Technologies Usage in Households" conducted by the National Statistics Office of Georgia, 97.8% of households in Adjara have internet access, the highest rate among all regions in Georgia [13]. This rate is much higher than the national average of 91.5%, indicating the region's quick embrace of digital technologies. Furthermore, the survey reveals that 99.0% of individuals aged 15-29 in Georgia have used the internet within the last three months, with Adjara likely following this trend, given its high internet penetration rate. This age group, which includes adolescents and young adults, is the most active in terms of internet usage, emphasizing the importance of screens in their everyday life. The statistics show that Adjara is at the forefront of digital adoption in Georgia, with almost universal internet access and high rates of social media and mobile device use. This gives the region an ideal location for research into the influence of screen behavior on mental health, particularly among adolescents and young adults, who are the most active users of digital devices.

Furthermore, cultural and lifestyle differences between Adjara's urban and rural areas may influence screen behavior and mental health outcomes. Rural communities in Adjara, particularly in mountainous areas, tend to live more conservatively, with stronger traditional values and less exposure to globalized media. These communities are also more likely to participate in physical activities like farming, hiking, and sports, which may help to limit screen usage and its detrimental impacts on mental health. Individuals in rural settings, for example, may spend more time outside and less time on screens, potentially contributing to stronger self-esteem and lower rates of depression than their urban counterparts. In contrast, urban areas such as Batumi, Adjara's largest city, are more exposed to globalized media and have greater rates of screen use. Urban adolescents and young adults are more likely to engage in social media, online gaming, and other digital activities, which may increase their risk of mental health problems like anxiety, depression, and low self-esteem.

Given these findings and the lack of research in the Adjara region, the current study aims to investigate the relationship between different types of screen behavior (social media, video games, and TV viewing) and mental health outcomes among adolescents and young adults in Adjara, Georgia. At present, in the Adjara region of Georgia, there is rather a higher tendency toward the use of social media, especially among youths and teenagers. However, there has been no extensive study conducted in this area or the nearby regions that may reflect the factors affecting screen behavior and mental health. Filling these gaps can assist in the creation of specific actions and policies that are appropriate for the region.

Materials and Methods.

A cross-sectional research approach was used in this study to determine the correlation between various types of screen activity and the emergence of mental health problems in adolescents and adults in the Adjara region. The study focused on two distinct age groups: 14 to 18 years (adolescents) and 19 to 24 years (young adults). These groups were chosen to capture the distinct developmental stages of adolescence and early adulthood, which are characterized by different social, emotional, and cognitive challenges. These stages may also involve varying patterns of screen use and mental health outcomes. While age could be treated as a continuous variable, the dichotomous categorization allows for clearer comparisons between these two critical developmental periods.

The study used a random sampling method to recruit participants from schools, universities, and community organizations in the Adjara region. Random sampling was employed to ensure that the sample was representative of the target population, thereby enhancing the generalizability of the findings. In the first stage, 440 respondents were identified from educational facilities and community organizations in Adjara, but 56 samples were excluded from the analysis due to failure to meet the inclusion criteria.

Inclusion criteria:

• Participants must be aged 14-18 years or 19-24 years and originate from the Adjara region.

• Participants must be residents of the Adjara region of Georgia.

• Participants or their legal guardians must provide informed consent for voluntary participation. For participants aged 14–17 years, parental or guardian consent is required in addition to the participant's assent.

• Participants must be fluent in Georgian or English, the languages in which the questionnaires and interviews were administered.

• Participants should be able to comprehend and respond to the study questionnaires and interviews. This was assessed through a brief pre-screening interview, during which participants answered a few simple questions to confirm their comprehension and communication skills.

The following diagnostic criteria and evaluation tools were utilized in this study:

1. **Based on DSM criteria**, one of the most common self-rated questionnaires for depression is the Depression-PHQ-9 which aims at determining the presence and severity of symptoms such as mood disorders, loss of interest, sleeping disorders, and changes in eating habits. The scale demonstrated excellent internal consistency in this study, with a Cronbach's alpha of 0.88 [14].

2. **Social Anxiety:** The Liebowitz Social Anxiety Scale (LSAS) is a popular method of evaluating the intensity of social anxiety. An interview and a self-questionnaire are used to determine the presence and degree of social anxiety symptoms in participants. The scale showed strong internal consistency, with a Cronbach's alpha of 0.92 [15].

3. Eating disorder: The SCOFF questionnaire is commonly used for screening eating disorders and comprises five simple questions that focus on weight changes, thoughts about food control, and shape. The present study shows a high sensitivity of 88.2% and a specificity of 92.5% when at least two answers are positive. This is a helpful method for identifying potential signs of an eating disorder [10]. The SCOFF test is suggested by NICE guidelines as the primary screening method for eating disorders in primary care [10]. The scale demonstrated good reliability, with a Cronbach's alpha of 0.80.

4. The Rosenberg Self-Esteem Scale, or RSES, is used to measure self-esteem. Participants are required to indicate whether they agree with a sequence of statements to proceed. This measure assesses an individual's feeling of value and self-esteem. The scale showed high internal consistency, with a Cronbach's alpha of 0.87 [16].

The participants answered a questionnaire on adapted screen behavior and provided demographic information. self-reported questionnaire was designed to capture both the quantity and quality of screen use across three domains: social media, video games, and TV viewing. Participants were asked to report their daily screen time for each activity, with response options ranging from "Less than 30 minutes a day" to "More than 5 hours a day." The social media section was adapted from the Social Media Use Integration Scale (SMUIS) [17] and the Bergen Social Media Addiction Scale (BSMAS) [18]. These scales measure the extent to which social media use is integrated into daily life and the risk of social media addiction, respectively. Response sheets and collected data were strictly treated as confidential, and data protection was ensured throughout the work process. Informed consent was obtained from participants or participants' legal guardians before taking part in the study. Participation was emphasized as being based on free self-determination.

Statistical analyses were conducted using GraphPad Prism 8 for ANOVA and SPSS for other variables. For ANOVA, means and standard deviations were calculated for each group, and post-hoc tests were performed to identify significant differences between groups. Effect sizes were also reported to provide a measure of the magnitude of the observed effects. Scores for each instrument were calculated as follows: PHQ-9 scores range from 0 to 27, with higher scores indicating more severe depression; LSAS scores range from 0 to 144, with higher scores indicating greater social anxiety; SCOFF scores are based on the number of positive responses, with two or more indicating a potential eating disorder; and RSES scores range from 0 to 30, with higher scores indicating higher self-esteem. All statistical tests were conducted at a significance level of p < 0.05.

Results.

Gender, Age, and Different Types of Screen Behavior:

Sex and age are strong interactive factors that differentiate how users consume information, communicate, and move around digital spaces. Regarding reporting differences between males and females, gender predicts variable screen behaviors. This answer revealed that in this research, gender was found to be a predictor that allowed differentiation in the use of screens between males and females. The sample size used in the study had a population of 384 participants, with females at 59% and males at 41%. The study compared screen behavior across four demographic groups: males aged 14–18, females aged 14–18, males aged 19–24, and females aged 19–24. Significant differences in screen usage preferences were observed among these groups (Figure 1).

Gender, Age, and social media usage frequency:

The frequency of social media usage was defined by the time spent on it, namely using intervals such as less than 30 minutes a day, 30 minutes to 1 hour a day, 1-3 hours a day, 3-5 hours a day, and 5 hours and more a day. The statistical analysis that looked at the association between gender and social media usage frequency in two age groups (14–18 and 19–24) produced no statistically significant results (p = 0.0758, CI = 95%) (Figure 2).

Social Media Usage Frequency and Mental Health Indicators:

Examining the relationship between the frequency of social media usage and mental health indicators (e.g., PHQ9 depression, anxiety, self-esteem, and eating disorders) can help determine if excessive screen time is associated with psychiatric disorders.

Depression.

The findings of the study and the statistical analysis that evaluated the link between PHQ9 depressive scores and social media usage give vital insights into the potential relationships between these variables. Overall PHQ9 Depression and Social Media Usage Relationship: A significant association was found between PHQ9 depression scores and social media usage (F(1, 382) = 10.45, p = 0.001, η^2 = 0.03). The mean PHQ9 score for females aged 19–24 was 12.5 (SD = 3.2), compared to 8.7 (SD = 2.9) for males aged 14–18. Significant differences in PHQ9 scores were observed between: Males aged 14–18 and females aged 19–24 (p = 0.0075); Females aged 14–18 and females aged 19–24 (p = 0.0166); Males and females aged 19–24 (p = 0.0348) (Figure 3).



Figure 1. This chart shows the screen usage preferences among different age and gender groups in a sample of 384 individuals. The groups are males (14-18), females (14-18), males (19-24), and females (19-24), with their respective percentages.



Figure 2. The statistical analysis found no significant association between gender, age, and social media usage frequency (p = 0.0758, CI = 95%).



Figure 3. The graph illustrates the relationship between social media usage and depression levels across different age and gender demographics. (*p*-value 0.0075).

Self-esteem:

The findings from the study, together with the statistical analysis of the relation between self-esteem and social media usage, give some very important insights that may be used to identify possible relations between these variables. A strong correlation was found between self-esteem and social media usage (F(1, 382) = 12.30, p = 0.0001, $\eta^2 = 0.05$). Significant differences in self-esteem were observed between:

a) Males aged 14–18 and males aged 19–24 (p = 0.001, CI = 95%). The mean self-esteem score for males aged 14–18 was 18 (SD = 4.5), compared to 12 (SD = 3.8) for males aged 19–24.

b) Males aged 14–18 and females aged 19–24 (p = 0.001, CI = 95%).

c) Females aged 14–18 and males aged 19–24 (p = 0.001, CI =95%).

d) Females aged 14–18 and females aged 19–24 (p = 0.001, CI = 95%). The mean self-esteem score for females aged 19–24 was 11 (SD = 3.5), compared to 17 (SD = 4.2) for females aged 14–18 (Figure 4).

Residency and mental health relationships:

a) In the present study, it was shown that there is a significant difference in terms of the level of self-esteem among 14-to 18-year-old males residing in Batumi city in comparison with their counterparts residing in the municipality of Khulo (P = 0.003). In Batumi, 64% of males aged 14-18 reported lower self-esteem, compared to 29% in Khulo (Figure 5).

b) Females, 14-18 years old, vs. males, 19-24 years old, within Batumi (P = 0.016), there's a significant difference between the self-esteem of females, 14-18 years old, and males, 19-24 years old. The result implies that there might be differences in selfesteem between these two ages and genders (Figure 6).

Eating disorders:

The study found a low level of statistical significance (p =

0.0255, CI = 95%) in the association between eating disorders and social media usage, suggesting a potential link but with limited significance. There is a statistically significant difference in the prevalence of eating disorders between males aged 14-18 and females aged 19-24 (p = 0.0255, CI = 95%) (Figure 7), with 14% of males aged 14-18 and 33% of females aged 19-24 reporting eating disorders. This suggests that older females have a larger prevalence than younger males.

Facebook's Impact on Mental Health: Key Findings:

Females aged 14-18 and females aged 19-24 who use Facebook: There is a statistically significant difference in mental health outcomes, according to this analysis. The findings imply that as females transfer from adolescence to early adulthood and maintain the use of Facebook, their mental health outcomes may differ. This highlights the possible impact of age on the association between female Facebook usage and mental health (Figure 8).

Discussion.

Our findings contribute to the growing body of literature on the relationship between screen behavior and mental health. While previous studies have established a link between social media use and depression [11]. Our research highlights the moderating role of age and gender. Specifically, we found that females aged 19-24 were more likely to experience depression compared to males aged 14-18, which aligns with research suggesting that young women are particularly vulnerable to the negative effects of social media(6). This vulnerability may be exacerbated by societal pressures, body image concerns, and the transition to early adulthood, which are more pronounced in this demographic.

Depression:

Depression is defined as sustained sadness and a lack of interest, including disruptive mood dysregulation disorder, according to



Self-Esteem and Social Media Usage Frequency

Figure 4. This chart illustrates the percentages of individuals with low and normal self-esteem among different age and gender groups who use social media for more than 3 hours daily.



Figure 5. Males 14-18 in Batumi vs. males 14-18 in Khulo; males 14-18 from Khulo have higher self-esteem.



Figure 6. The data shows that 49% of females aged 14-18 have low self-esteem, while a significantly higher percentage (92%) of males aged 19-24 have low self-esteem.



Figure 7. This chart illustrates the prevalence of eating disorders (ED) among males aged 14-18 and females aged 19-24 who use social media for more than 3 hours per day.



Figure 8. This chart shows the percentage of females using Facebook who experience various mental health issues. The age groups are 14-18 and 19-24.

the DSM-5 [19]. In our research the higher depression rates observed in females aged 19–24 compared to males aged 14–18 are consistent with previous research showing that young women are more likely to experience depressive symptoms due to social media use [11].

The findings are supported by a meta-analysis indicating a 59.6% increased risk of depression in the setting of higher daily TSSM, especially in girls [11]. Higher rates observed in females as compared to males are accounted for by evidence suggesting coping mechanisms, including gender-specific features associated with cyberbullying and social dynamics. Stress coming from societal expectations, obligations, and relationship pressures also drove young females aged 19-24 to depression. The study suggests developing interventions for depression specifically aimed at young girls. Further research in this area can examine variables that may be connected to methods for enhancing mental health and, conversely, variables that may, in turn, reduce depression in this susceptible group. It is essential to comprehend the intricate correlations between depression and social media usage about age and gender to devise evidence-based interventions aimed at promoting mental health across diverse populations.

Self-esteem and social media use:

Self-esteem is highly sensitive to all ages and influences the resilience and mental health of all individuals, and it favors success in social and academic interactions and coping abilities in general [20]. High self-esteem reveals good outcomes, while usually bad outcomes are manifested by low self-esteem, characterized by depression, substance abuse, and other negative behaviors. The present research shows that self-esteem plays a protective role against psychiatric problems, thus supporting the vulnerability model to express low self-esteem as the most prevalent antecedent of depression [19]. Beck underlines that the role of self-relevant beliefs in depression is trans-diagnostic and transcends demographic factors. Neuroticism can heighten problems related to self-esteem and depression, leading to increased use of social media and emotional distress. Among the gender differences in self-esteem are the sociological pressures, especially beauty standards and societal expectations that females face. These are magnified by social media, as body image sharply affects females. Although males typically have higher self-esteem, they also encounter challenges from social media comparisons. The decline in self-esteem observed among males and females as they transition from adolescence to early adulthood is consistent with the vulnerability model, which posits that low self-esteem is a key antecedent of depression [19]. Our findings suggest that social media use may exacerbate this decline by fostering social comparison and promoting unrealistic beauty standards. Interventions aimed at promoting positive self-perception and reducing the impact of social comparison may be particularly beneficial for this population.

Residency and mental health relationships:

The significant differences in self-esteem between males residing in Batumi and Khulo highlight the role of cultural and environmental factors in shaping mental health outcomes. Males in Khulo municipality portray more self-esteem compared to their counterparts living in Batumi city. This may be explained by the reduced cases of social comparison in this insulated environment in Khulo. The boys in Batumi have diverse lifestyles. More societal stressors lower their selfesteem. The village setting of Khulo offers opportunities to engage in outdoor activities, connect with nature, and benefit mental health. It is a stable sense of self-evaluation about a person's abilities and qualities; it lies at the center of resilience in dealing with obstacles and criticism and in reaching out toward striving for personal development. Low self-esteem will hamper resilience to adversity and criticism. It is related to a wide array of mental health problems, including depression, anxiety, substance abuse, and eating disorders. These findings suggest that interventions should be tailored to the unique needs of urban and rural populations. For example, urban interventions could focus on reducing excessive screen time and promoting healthy social media habits, while rural interventions could leverage existing physical activity and community engagement to further support mental health.

Eating disorders and social media use:

The study defines eating disorders as severe mental illnesses characterized by major disturbances in eating behavior that predominantly affect young teenagers and young adults. According to this paper, there is a statistically significant difference in the prevalence of eating disorders between males aged 14–18 and females aged 19–24. It is seen that literature has shown prolonged exposure to media, which directly increases the risk of developing eating disorders. The findings of this research prove that using social media raises concerns about body image, weight, food intake, and amount of exercise. This is very common, especially among adolescents and young adults who care about what others see of them online.

Social platforms and mental health:

The effects of Facebook and related social media on mental health are twofold. Evidence supports that there has been a sharp rise in youth psychological problems caused by Facebook from 2008 to 2020. However, studies also find that from 2008 to 2019, the depression rate of 18- to 23-year-olds had radically grown to 15% by 2019 [21]. More serious negative consequences, however, are primarily mediated through social comparison and work-life balance disturbances. In this process of social comparison-that is, when people base their evaluations of themselves on comparisons with others-there are assimilation and contrast influences on mental health. Comparative studies of women between 14 and 18 and 19 and 24 years old using Facebook show the former to have more severe symptoms of depression, anxiety, eating disorders, and low self-esteem. Social media presents unrealistic beauty standards and promotes social comparison, to which young adults fall prey-very frequently comparing each other on these websites. These challenges are further compounded by exposure to media espousing unrealistic beauty ideals in the young adult group.

Reverse Causation: A Critical Consideration:

While our findings indicate that excessive screen usage is related with an increased risk of depression, anxiety, and low self-esteem, it is vital to examine the possibility of reverse causation. For example, Individuals who are already depressed may be more inclined to engage in prolonged screen time as a form of escapism or to seek social connection online [22]. Similarly, those with low self-esteem or social anxiety may turn to social media as a way to cope with their feelings of inadequacy or to avoid face-to-face interactions [9]. This possibility is supported by longitudinal studies that have found evidence of bidirectional relationships between screen time and mental health. For example, Hartanto et al. (2021) discovered that, while excessive social media use can lead to greater depressive symptoms, people who already have depression are more inclined to spend more time on social media. This implies that the relationship between screen usage and mental health is complex, with potential reciprocal influences.

To address the issue of reverse causation, future studies should use longitudinal designs that monitor screen behavior and mental health outcomes over time. This would allow researchers to separate the temporal correlations between these factors and identify whether screen time is a cause, a cause, a consequence, or both, of mental health issues. Furthermore, experimental research might be carried out to vary screen usage and evaluate its impacts on mental health, providing more evidence for causal relationships.

Limitations.

This study has several limitations that should be acknowledged. First, the cross-sectional design limits our ability to establish causal relationships between screen behavior and mental health outcomes and reverse causation cannot be ruled out. Second, the sample was drawn exclusively from the Adjara region, which may limit the generalizability of our findings to other cultural or geographic contexts. Third, the dichotomous treatment of age (14–18 vs. 19–24) may have obscured more nuanced developmental changes that could be captured by treating age as a continuous variable. Finally, self-reported data on screen behavior and mental health outcomes may be subject to bias, as participants may underreport or overreport their experiences. Future research should address these limitations by using longitudinal designs, diverse samples, and objective measures of screen behavior.

Conclusion.

This study investigated the relationship between screen behavior and mental health outcomes among adolescents and young adults in the Adjara region. Key findings include significant associations between social media use and depression, particularly among females aged 19–24, as well as a decline in self-esteem among both males and females as they transition from adolescence to early adulthood. Additionally, residency was found to play a significant role in shaping selfesteem, with males in rural areas reporting higher self-esteem compared to their urban counterparts.

These findings have important implications for mental health interventions and public health policies. The higher rates of depression and low self-esteem observed among females aged 19–24 highlight the need for targeted interventions that address the unique challenges faced by young women, such as promoting healthy social media habits and fostering resilience. Additionally, the protective effect of rural residency on selfesteem suggests that cultural and environmental factors should be considered when designing mental health programs.

Future research should address the limitations of this study by using longitudinal designs to establish causal relationships between screen behavior and mental health outcomes. Additionally, studies should explore the mechanisms through which cultural and environmental factors influence mental health, particularly in diverse geographic and cultural contexts. Finally, research should investigate the effectiveness of interventions aimed at promoting healthy screen habits and reducing the negative mental health impacts of social media use.

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