GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 9 (378) Сентябрь 2026

ТБИЛИСИ - NEW YORK



ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

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.

GEORGIAN MEDICAL NEWS
NO 9 (378) 2026

Содержание:

Vadatchkoria R, Dondoladze K, Tsintsadze N, Kaushik A, Singh H.
HEALTH-RELATED CHALLENGES, PSYCHO-EMOTIONAL WELLBEING, AND ADAPTATION EXPERIENCES OF INTERNATIONAL STUDENTS IN A FOREIGN ACADEMIC ENVIRONMENT……6-13

Tan Kaiyou, Zhang Zhaoying.
EPIDEMIOLOGY AND POST-EXPOSURE MANAGEMENT OF RABIES EXPOSURES AT A COMMUNITY HEALTH CENTER: A 2024–2025 RETROSPECTIVE ANALYSIS……14-19

Josue Andres Orozco Pilco, Ximena del Rocío Robalino Flores, Silvia Paola Monar Basantes, Luisa Carolina González Ramírez.
RETICULOCYTE COUNT AND HEMATOLOGICAL INDICES IN MICROCYTIC HYPOCHROMIC ANEMIA: PREVALENCE AND PATTERNS AMONG INFANTS UNDER 24 MONTHS IN ANDEAN ECUADOR……20-25

Mirgul Kapakova, Jamilya Mansurova, Anar Kozhabayeva, Beshimbayeva Zhuldyz, Zhanar Toktarova, Meiramgul Tokbulatova, Galiya Assanova, Bolat Ashirov, Dariga Nurgalieva.
INDEPENDENT PREDICTORS OF SHORT-TERM MORTALITY IN PATIENTS WITH CHRONIC HEART FAILURE AND ANEMIA……26-32

Aynur Isayeva, Yusif Aliyev, Nergiz İmanova.
BASIC PRINCIPLES OF THE CONCEPT OF ACCELERATED POSTOPERATIVE RECOVERY AFTER SUBTOTAL COLECTOMY……33-36

David Gogoberidze, Irine Bakhutashvili.
MAJOR ADVERSE CARDIOVASCULAR EVENTS AFTER ACUTE CORONARY SYNDROME: DEFINITION, TIMING, RATES, MAIN RISK FACTORS, AND WAYS TO IMPROVE……37-43

Nataliya Byelyayeva, Pavlo Velychko, Olha Savitska, Zhanna Bogdan, Nataliia Ivantsev.
THE EFFECTIVENESS OF PSYCHOLOGICAL INTERVENTIONS IN MANAGING ANXIETY AND STRESS FOLLOWING TRAUMATICEVENTS……44-53

Hayfa A. Al-Olayan.
THIRTY-DAY INCIDENCE OF SURGICAL SITE INFECTION AND PERIOPERATIVE PROCESS COMPLIANCE IN A UNIVERSITY HOSPITAL DAY-SURGERY UNIT: A RETROSPECTIVE COHORT STUDY OF 200 PATIENTS……54-66

Grigoryan A.A, Makinyan L.G, Podlesnaya A.A, Imankulov M.A, Abu Zaalan V.M.
FACTORS ASSOCIATED WITH FUNCTIONAL OUTCOME AND SELECTION OF SURGICAL STRATEGY IN FOOT DROP SYNDROME ASSOCIATED WITH COMMON PERONEAL NEUROPATHY……67-72

Norah Hadi Mohammed, Tala Mustafa Ezzat, Fatima Alzahra Mukhtar, Ahmed. L. Osman, Marwan Ismail, Areeg Khalfallah, Ghina Yazbek, Sara Mohammed Ali, Abdelgadir Elamin Eltom.
CORRELATION OF HBA1C WITH INFLAMMATORY MARKERS AND NEUTROPHIL-TO-HIGH-DENSITY LIPOPROTEIN RATIO IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A RETROSPECTIVE CROSS-SECTIONAL STUDY……73-75

Zainab Haitham Fathi, Ammar A.Y. Almulathanon.
ASSOCIATION BETWEEN INFERTILITY AND SERUM LEVELS OF ANTI-MÜLLERIAN HORMONE, FOLLICLE-STIMULATING HORMONE, LUTEINIZING HORMONE, AND PROLACTIN ACCORDING TO VITAMIN D SUPPLEMENTATION STATUS……76-82

Zhadra Kalbagayeva, Zaituna Khismetova, Nazym Iskakova, Aliya Atabayeva, Bakytkul Toktabayeva, Aigul Tugelbayeva, Sultan Seidumanov, Kamila Akhmetova, Bibinur Sydykova.
HEALTH-RELATED QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE: A CROSS-SECTIONAL STUDY……83-89

Tamta Chikobava, Ann Margvelashvili, Manana Kalandadze, Nino Tebidze, Vladimer Margvelashvili.
ASSESSMENT AND NONPHARMACOLOGICAL GUIDANCE OF CHILDREN'S BEHAVIOR AND DENTAL ANXIETY IN PEDIATRIC DENTISTRY: A STRUCTURED NARRATIVE REVIEW……90-97

Eglantina Bulica, Admir Sinamati, Alketa Tandili, Gentian Vyshka.
ETHICAL AND DEONTOLOGICAL DIMENSIONS OF RETINOPATHY OF PREMATURITY CARE: TOWARD A EUROPEAN PERSPECTIVE……98-103

Tingliang Tao, Yun Huang, Mengdan Xu, Shaoguo Wang, Lihong Bao.
MACHINE LEARNING-BASED IDENTIFICATION OF KEY GENES AND DEVELOPMENT OF A PREDICTIVE NOMOGRAM FOR PERIODONTITISDIAGNOSIS……104-111

Ahmed Abdelhadi Ahmed Nasr, Selma E. Hago Dawd, Ammar Abdelmola, Husham O. Elzein, Menna Ibrahim ALbader, Ezeldine K Abdalhabib, Elryah I Ali, Alneil Hamza, Mohammed Ibrahim Saeed, Salah Eldin Omar Hussein, Sara Mohammed Ali, Ayman H. Alfeel, Amar Mohamed Ismail, Omer Fadul Idris.
ASSOCIATION OF SER447TER, HINDIII AND PVUII LIPOPROTEIN LIPASE GENE POLYMORPHISMS WITH LIPID PROFILE IN CORONARY HEART DISEASE……112-120

Indira Adilbekova, Nishangul Bozhbanbayeva, Saule Issenova, Gulmira Altynbayeva, Dilfuza Sultanmuratova.
MATERNAL AND CORD-BLOOD HOMOCYSTEINE AND NEONATAL S100B IN PRETERM BIRTH: ASSOCIATIONS WITH IN-HOSPITAL NEONATAL OUTCOMES IN A PROSPECTIVE COHORT……121-130

Hayder G Oufi, Rana Hussein Kutaif, Ruaa E. Alabd, Hawraa Hussein Abd, Ranya Riyadh Hameed, Esraa Adnan Al-Muhanna, Dina Amer Abd, Riham Taha Yousif.
CLINICAL AND CULTURAL PERSPECTIVES ON POLYCYSTIC OVARY SYNDROME (PCOS) IN WOMEN BASED ON SYMPTOM CLUSTERING AND DIAGNOSTIC TRENDS…….131-141

Ferat Sallahu, Anamarija Jankulovska, Altin Sallahu.
LYMPHOVASCULAR AND PERINEURAL INVASION IN RELATION TO THE PRESENCE AND BURDEN OF NODAL METASTASIS IN RESECTED GASTRIC CANCER…….142-146

Toapanta Yugcha Iván, Toapanta Paredes Ximena, León Corrales Luis Sebastián, Maisincho Proaño Erika Fernanda, Alvarado Buenaño Marlon Andrés, Reinoso Molina Marcos Rubiño.
SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH SUICIDE RISK AMONG URBAN AND RURAL ADOLESCENTS IN AMBATO, ECUADOR…….147-151

Elmira Amanova, Gaukhar Abassova, Gulnaz Kaishibayeva, Vitaliy Kovalchuk, Yessengeldi Ismailov, Marzhan Abdrazakova, Sandugash Alipbekova, Saule Tuktibayeva, Kanatzhan Kemelbekov, Adlet Yernazarov.
FREQUENCY OF NEUROPATHIC PAIN FEATURES AMONG NEUROLOGICAL OUTPATIENTS AND THEIR IMPACT ON QUALITY OF LIFE: A CROSS-SECTIONAL SCREENING STUDY OF 1,705 PATIENTS…….152-162

Shaikha Fatmah Al Sharqia, Magdy Ali Abdou Gouda, Praveen Kumar, Shima Ibrahim Ali.
PERCEIVED CAUSES AND CONSEQUENCES OF DIAGNOSTIC ERRORS IN THE SECOND-TRIMESTER FETAL ANOMALY SCAN…….163-171

Moldir Tleubayeva, Meyirbek Aimagambetov, Kirill Krylov, Yernar Mamyrov, Marat Syzdykbayev, Samatbek Abdrakhmanov, Gulshat Alimkhanova, Assel Tulebayeva, Roman Khripunov.
NUTRITIONAL SUPPORT IN SURGICAL PATIENTS. PROTEIN-ENERGY METABOLISM DISORDERS…….172-180

Eranov Sh. N, Urinbaev Payzilla, Khodjanov Iskandar Yunusovich, Eranov Nurali Fayziyevich, Khalimova Fariza Tursunbaevna.
COMPREHENSIVE INSTRUMENTAL AND FUNCTIONAL ASSESSMENT OF POST-TRAUMATIC ELBOW CONTRACTURE IN CHILDREN AT THE INITIAL STAGE OF REHABILITATION…….181-187

Diana Dzidziguri, Irakli Chkhikvishvili, Maka Mantskava, Eka Shekiladze, Ekaterine Bakuradze, Tornike Liverashvili, Nina Kipiani, Sophio Turabelidze-Robaqidze, Tamar Sanikidze.
PHYTOCHEMICAL CHARACTERISATION, RADICAL-SCAVENGING ACTIVITY AND EXPERIMENTAL MICROCIRCULATORY RESPONSES TO GEORGIAN CUCURBITA MOSCHATA FLESH-WITH-PEEL EXTRACT…….188-195

Tchernev G, Tchernev KG Jr, Kordeva S.
DERMATOLOGIC SURGERY PEARLS: KERATINOCYTE CANCER AFFECTING HIGH RISK FACIAL REGIONS - LOGARITHMIC SPIRAL FLAP FOR NASAL ALAR RECONSTRUCTION AND V-TO-T FLAP FOR LOWER LIP RECONSTRUCTION…….196-203

Yerzhan Khochshanov, Dulat Baltabayev, Svetlana Khan, Yelena Aisenova, Zhibek Dautbayeva, Zhanar Akhmetova, Viktoriya Nazarova, Assel Meiramova.
OCULAR SURFACE AND TEAR FILM CHANGES IN GRAVES' DISEASE ACCORDING TO THYROID EYE DISEASE STATUS…….204-209

Laktionova M, Barmanasheva Z, Onglas A, Kulzhanov M, Baimuratova M, Sarsenbaeva M.
PREVALENCE AND RISK FACTORS OF PELVIC ORGAN PROLAPSE AMONG WOMEN IN ALMATY: A HOSPITAL-BASED STU DY…….210-217

Ahmed Abdelhadi Ahmed Nasr, Tagwa Yousif Elsayed Yousif, Ravshanova Maftuna Zoxidjonovna, Husham O. Elzein, HabibAllaa Eldaw Mohamed, Ezeldine K Abdalhabib, Elryah I Ali, Alneil Hamza, Mohammed Ibrahim Saeed, Salah Eldin Omar Hussein, Ayman H. Alfeel, Amar Mohamed Ismail, Omer Fadul Idris.
LIPOPROTEIN LIPASE GENE POLYMORPHISMS AND THEIR ASSOCIATION WITH APOLIPOPROTEIN A-I AND B-100 CONCENTRATIONS IN PATIENTS WITH CORONARY HEART DISEASE: A CROSS-SECTIONAL GENETIC ASSOCIATION STUDY …….218-225

Khamdamova Muhayyoxon Tukhtasinovna, Khalilova Mekhriniso Tuymurodovna, Askarova Zebo Zafarjonovna, Yusupova Mekhribon, Kambarova Dildora Noxidovna, Khalimova Fariza Tursunbaevna.
MORPHOLOGICAL FEATURES OF THE CERVICAL EPITHELIUM AND STROMA IN CHRONIC RECURRENT CERVICITIS WITH AND WITHOUT SQUAMOUS INTRAEPITHELIAL LESIONS: A COMPARATIVE CROSS-SECTIONAL STUDY…….226-233

GEORGIAN MEDICAL NEWS
No 9 (378) 2026

THE EFFECTIVENESS OF PSYCHOLOGICAL INTERVENTIONS IN MANAGING ANXIETY AND STRESS FOLLOWING TRAUMATIC EVENTS

Nataliya Byelyayeva[1]*, Pavlo Velychko[2], Olha Savitska[3], Zhanna Bogdan[4], Nataliia Ivantsev[5].

[1]PhD, Associate Professor, Department of Psychology and Sociology, Simon Kuznets Kharkiv National University of Economics, Kharkiv, Ukraine.

[1]Lecturer, Department of Psychology, Pedagogy and Philology, Kharkiv State Academy of Culture, Kharkiv, Ukraine.

[2]PhD student of psychology, International Academy of Personnel Management, Kyiv, Ukraine.

[3]PhD, Associate Professor, Department of General and Practical Psychology, Faculty of Special Education, Psychology and Social Work, Kamianets-Podilskyi Ivan Ohiienko National University, Kamianets-Podilskyi, Ukraine.

[4]Dr. of Psychology, Associate Professor, Head of Department of Psychology and Sociology, Simon Kuznets Kharkiv National University of Economics; Kharkiv, Ukraine.

[5]PhD, Associate Professor, Department of Clinical and Rehabilitation Psychology, Vasyl Stefanyk Carpathian National University, Ivano-Frankivsk, Ukraine.

Abstract.

Background: Traumatic events significantly impair psychological well-being, leading to sustained anxiety, heightened perceived stress, and symptoms of post-traumatic stress disorder (PTSD), which require prolonged and evidence-based therapeutic interventions.

Purpose: The study aimed to determine the short- and long-term effectiveness and duration of action of Trauma-Focused Cognitive Behavioural Therapy (TF-CBT) and mindfulness-based approaches in managing anxiety, stress, and PTSD symptoms.

Method: The study sample comprised 240 participants (aged 37±12) divided into three equal groups of 80 individuals: a TF-CBT group, a mindfulness-based approach group, and a non-intervention control group. Assessment instruments included the World Health Organisation-5 Well-Being Index (WHO-5), Generalized Anxiety Disorder Scale (GAD-7), Perceived Stress Scale (PSS-10), and Post-traumatic Stress Disorder Checklist (PCL-5). We evaluated interventions for short-term outcomes and long-term stability over an 8-week follow-up period. We analysed data using regression and statistical significance modelling.

Results: Both TF-CBT ($p \leq 0.01$) and mindfulness-based approaches ($p \leq 0.01$) demonstrated statistically significant reductions in anxiety, stress, and PTSD, alongside improvements in overall well-being, whereas the control group showed no significant changes. The prolonged effect remained statistically significant ($p \leq 0.01$) at 8 weeks post-intervention. Overall therapeutic effectiveness depended heavily (55%) on therapy duration ($\beta = -0.62$, $p < 0.001$) and baseline symptom severity ($\beta = 0.49$, $p = 0.01$). TF-CBT yielded better outcomes than mindfulness.

Conclusion: TF-CBT is recommended as the primary first-line intervention for managing post-traumatic consequences due to its superior efficacy over mindfulness-based approaches. Both methods effectively secure long-term symptom reduction and psychological stabilization, offering practical utility for clinical implementation.

Key words. Cognitive behavioural therapy, mindfulness, well-being, post-traumatic stress disorder, mental health, psychological trauma.

Introduction.

One of the key aspects of healthcare today is the issue of the psychological consequences of traumatic events. Indeed, in most cases, traumatic experiences trigger the development of anxiety, stress, post-traumatic stress disorder (PTSD) and depression, which significantly reduce people's well-being and quality of life. Against this backdrop, adaptive capacities are reduced [1], and psychological well-being deteriorates [2]. All of this leads to a deterioration in quality of life, which is a priority and the primary focus of healthcare in modern society [3].

At the same time, there is now a scientific consensus regarding the effectiveness of psychotherapeutic interventions in treating the consequences of traumatic events. On the one hand, the existing evidence base from scientometric studies demonstrates the availability of a wide range of psychotherapeutic tools for addressing the consequences of traumatic experiences. On the other hand, their sheer number and the mixed results suggest that the mechanism underlying the effectiveness of such interventions requires consideration of a wide range of factors.

In particular, numerous reviews demonstrate that one of the most extensively studied approaches is the trauma-focused (TF) approach, which includes trauma-focused cognitive behavioural therapy (TF-CBT), eye movement desensitisation and reprocessing (EMDR), and mindfulness-based approaches. These approaches are effective in reducing symptoms of anxiety and stress compared to standard treatments. Mindfulness-based approaches have demonstrated high effectiveness in reducing anxiety and stress [4]. EMDR has also shown strong therapeutic effects in many cases [5-7]. However, some meta-analyses note that its effectiveness does not consistently exceed that of TF-CBT or other techniques, highlighting the need to investigate its specific mechanisms of action further [8,9]. Similarly, TF-CBT fails to produce the expected reduction in traumatic symptoms in half of the cases [3,10]. However, the influence of additional factors on the effectiveness of TF, such as early onset of trauma, traumatic experiences, self-regulation difficulties and health status, remains unexplored to date [11].

Despite the large number of studies, the long-term effects of therapeutic changes remain unclear. This highlights the lack of information on long-term treatment outcomes and the need for longitudinal studies.

© GMN

Thus, there are now sufficient tools available for psychological interventions aimed at overcoming anxiety and stress resulting from trauma; however, the key feature of this study is its comprehensive approach, which takes into account the multidimensional nature of associated factors. In our study, we combined TF-CBT and mindfulness-based approaches with an examination of respondents' clinical and individual psychological characteristics (the time of the traumatic event, its intensity, and general health).

This study aims to assess the effectiveness of psychological interventions in reducing levels of anxiety, stress and PTSD in adults who have experienced traumatic events, as well as to determine the relative effectiveness of TF-CBT and mindfulness-based approaches and the duration of their effects.

In line with this objective, the following tasks have been set.

1. To assess the levels of anxiety, stress and PTSD symptoms among respondents before the start of psychotherapy.
2. To investigate the effectiveness of TF-CBT and mindfulness-based approaches in reducing levels of anxiety, stress and PTSD symptoms compared with a control group.
3. To analyse changes in anxiety, stress and PTSD scores following the intervention and in the long term (after 8 weeks).
4. To determine the impact of gender, age, duration of the intervention and baseline symptom severity on treatment outcomes.

The main hypothesis of the study was that psychological interventions, specifically TF-CBT and mindfulness-based approaches, are effective in reducing levels of anxiety, stress and PTSD symptoms in individuals who have experienced traumatic events, compared with a control group.

Theoretical Framework.

Modern clinical psychology offers a range of approaches to managing anxiety and stress following traumatic events. The most effective approach has proven to be trauma-focused (TF) therapy. TF therapy is a set of treatment methods that include trauma-oriented elements, focusing on reliving memories of the trauma and processing the emotions associated with it [12]. The essence of this method lies in changing excessively negative thoughts about the trauma through cognitive restructuring therapy [10]. According to Van der Kolk [13], the first step in the intervention is to reduce emotional tension and stabilise the patient's condition.

The best-known TF method, widely used in clinical practice, is trauma-focused cognitive-behavioural therapy (TF-CBT). It has proven effective in treating the consequences of trauma in both the short and long term [14]. Recent studies have demonstrated the effectiveness of TF-CBT in reducing stress and anxiety levels resulting from PTSD [15-17]. Both group and individual forms of therapy proved effective. This indicates the wide applicability of TF-CBT in working with trauma and its consequences. Modified TF-CBT is feasible across age groups; however, because childhood requires a specific approach and adolescence involves moral biases in self-perception, young people are the most suitable age group for TF-CBT interventions [18,19]. A long-term effect in overcoming symptoms of PTSD and stress, as well as an improvement in well-being, is also noted as a result of TF-CBT interventions [20,21]. All this allows us to conclude that TF-CBT is a promising approach in psychological interventions aimed at overcoming the consequences of traumatic events.

Mindfulness techniques have proven effective within the context of TF. A study by Li [22] found a partial reduction in anxiety and PTSD symptoms. Liu reported similar results, showing that mindfulness interventions significantly reduced PTSD symptoms, although it is noted that their effectiveness is somewhat inferior to that of TF-CBT [23]. In other words, despite the evidence supporting mindfulness, it should still be used with caution as a primary intervention, as it is less effective than TF.

The techniques discussed are the most commonly used in alleviating the symptoms of traumatic experiences, though they are by no means the only ones. In the current era of digitalisation, digital technologies have demonstrated a certain degree of effectiveness in addressing the consequences of psychological trauma. With technological advances, AI opens vast opportunities to improve approaches across all areas of life, particularly by expanding the capabilities of psychotherapeutic tools [24]. In particular, it has been demonstrated that digital psychological interventions are effective in treating depression, anxiety and PTSD, and should be integrated into mental health care [25,26]. Consequently, digital interventions are being implemented to an increasing extent every year. We consider them highly promising and worthy of attention, warranting further in-depth study.

In the context of our study, it is worth noting the theory of post-traumatic growth (PTG). The Post-Traumatic Growth Inventory (PTGI), developed by Tedeschi and Calhoun, has opened opportunities to study the positive consequences of traumatic experiences [27]. Researchers have found that obsessive rumination about a traumatic event causes severe distress, but at the same time generates a need for cognitive restructuring and the reorganisation of cognitive schemas. This enables the development of more stress-resilient schemas and psychological growth.

The evidence supporting the approaches discussed demonstrates their effectiveness in addressing the consequences of trauma. However, a key issue in most studies is the failure to account for additional factors that may influence research outcomes [28]. Among the most significant factors, it is worth highlighting clients' individual characteristics (age, gender, prior therapy experience), the nature of the trauma (type, duration and number of traumas), the presence of comorbid conditions (depression, anxiety disorders), and the characteristics of the intervention itself (the therapist's experience and competence, the duration and intensity of therapy). Therefore, recent publications note that interventions are most effective when they are adapted to participants' cognitive level, age-appropriate, take gender perspectives into account, and reflect cultural characteristics [29,30].

Thus, this overview of the current state of psychotherapeutic interventions is based not only on evidence of their effectiveness, but also on the specific features and conditions of their use, as well as the potential for combining different types of interventions. With these considerations in mind, we selected

TF-CBT and mindfulness, allowing us to examine differences in effectiveness and long-term effects.

Materials and Methods.

Study procedure:

We used a randomised controlled trial design with a mixed-factorial structure (3×3) that combined within-group and between-group comparisons. The between-group factor was the type of psychological intervention (3 levels), while the within-group factor was measurement time (3 time points). The study lasted 16 weeks, comprising 8 weeks of active psychological intervention and an 8-week observation period. The study included three measurement phases: baseline, post-test (after the intervention) and a follow-up 8 weeks after completion.

The study ran from September 2025 to January 2026. In the first stage, diagnostic tools were selected based on reliability and validity criteria. We conducted the initial diagnosis, data processing, and preliminary interpretation. During the second stage, a course of psychological interventions was conducted using trauma-focused cognitive behavioural therapy (TF-CBT) techniques and mindfulness-based approaches. In the third stage, a repeat assessment of symptoms of anxiety, PTSD, stress and subjective well-being was carried out immediately after the interventions and after 8 weeks.

Sample:

The study involved 240 participants, recruited through online advertisements. Of these, 168 were female, and 72 were male. The inclusion criteria were an age range of 18 to 44 years, which corresponds to the 'young adult' category. This age classification aligns with D. Levinson's classification and the American Heart Association's definition of early adulthood. In particular, the upper age limit of the sample (44 years) was chosen to ensure homogeneity in terms of socio-professional activity and neurocognitive adaptability. The inclusion criteria also included a history of traumatic experiences within the last 3 months and symptoms of PTSD. The exclusion criterion was age under 18, to ensure full legal capacity to give informed consent and minimise the influence of developmental factors characteristic of childhood injuries. Exclusion criteria also included severe psychological and emotional conditions requiring individual treatment, as well as medication that could skew the results. At the initial stage of the study, participants were randomly allocated to three study groups in a 1:1:1 ratio using Microsoft Excel (a computer-generated randomisation procedure). This procedure helped to reduce the risk of selection bias.

Respondents were divided into three groups: trauma-focused cognitive-behavioural therapy (TF-CBT, n=80), mindfulness-based approaches (n=80), and a control group (n=80). Respondents in the control group did not participate systematically in psychological interventions during the study. They received only minimal informational and educational support (treatment as usual). This support included general recommendations for improving well-being and psychological health. Respondents in this group did not receive structured psychotherapeutic interventions, allowing this group to serve as a control group to assess the effectiveness of targeted therapeutic programmes.

Randomisation was carried out to ensure comparable groups with respect to demographic factors (age, gender, baseline symptom severity).

The study was conducted at the "Povernennia" Mental Health Centre and the "Kolo Sily" Centre for Social and Psychological Support. Participants were recruited via online advertisements. The interventions were delivered in a mixed format: partly online (via video conferencing) and partly offline (at the centres). Sessions took place once a week for 2–2.5 hours. All three groups of participants underwent initial and final assessments.

The TF-CBT psychotherapeutic intervention was conducted according to a standardised protocol. The intervention algorithm comprised the following steps (Table 1).

Mindfulness practices were introduced in line with the Mindfulness-Based Stress Reduction (MBSR) approach (Table 2).

The World Health Organisation Five Well-Being Index [31] was used to assess respondents' well-being. The scale consists of 5 questions rated on a 6-point scale: 5 points – always, 4 points – most of the time, 3 points – more than half the time, 2 points – less than half the time, 1 point – sometimes, 0 points – never. Add the scores to get a total from 0 to 25. To obtain a percentage score, multiply the total score by 4. A percentage score of zero indicates the poorest mental well-being, whilst a score of 100 indicates high mental well-being. A percentage score below 50 is defined as the threshold for poor mental well-being.

Anxiety was assessed using the Generalised Anxiety Disorder Scale (GAD-7) [32]. The test consists of 7 questions and 4 response options: absolutely no (0), sometimes (1), half the time (2), always (3). Anxiety is diagnosed according to the following levels: 0–4 points indicate minimal anxiety, 5–9 points indicate mild anxiety, 10–14 points indicate moderate anxiety, and 15 or more points indicate severe anxiety.

We measured stress levels using the Perceived Stress Scale (PSS-10) [33]. The PSS-10 scale comprises 10 statements that assess the participant's mental state. Items are rated on a 5-point scale: 0 – never, 1 – hardly ever, 2 – sometimes, 3 – quite often, and 4 – very often. The test is unidimensional. The total test score ranges from 0 to 40. Questions 4, 5, 7 and 8 are reverse-scored, so the answers to them must be swapped (i.e. 0 => 4; 1 => 3; 2 => 2; 3 => 1; 4 => 0). Interpret the results as follows: 0–13 low stress, 14–26 moderate stress, and 27–40 high stress.

The Post-traumatic Stress Disorder Checklist (PCL-5) [34] was used to identify symptoms of PTSD. The scale is designed for self-assessment and enables the diagnosis of the presence and severity of post-traumatic stress disorder (PTSD) symptoms. The PCL-5 questions correspond to the DSM-5 criteria for PTSD. The PCL-5 contains 20 questions, each scored from 0 to 4 points based on symptom severity. The scale ranges from 0 to 80.

Microsoft Excel and SPSS 22.0 were used for calculations. During the data analysis, repeated measures ANOVA was used to identify statistically significant ($p<0.05$) effects in changes in indicators; Tukey's Honestly Significant Difference (post-hoc test) and effect size calculation (Cohen's d, η^2) were also employed.

At the start of the study, participants provided informed consent to participate in the psychological interventions. They were informed of the aims and potential risks and made aware of the confidentiality safeguards.

Results.

Assessing respondents' well-being across the three groups using the WHO-5 scale revealed statistically significant differences in scores (ANOVA, $p \leq 0.01$) (Table 3).

Well-being scores improved significantly in the intervention groups. The TF-CBT group showed the greatest increase in well-being ($p<0.001$) and the largest effect size (0.95). The mindfulness group also showed a significant increase in the indicator ($p < 0.001$), with a large effect size (0.75). The results were maintained over 8 weeks, and the mean value even increased slightly. The control group showed no significant change ($p = 0.08$).

One-way analysis of variance (ANOVA) revealed statistically significant differences between the study groups after the interventions ($F(2.237)=52.3$, $p<0.001$) and after 8 weeks ($F(2.237)=52.7$, $p<0.001$). This confirms that intervention type significantly influenced the results.

Anxiety levels were assessed using the GAD-7 scale both before and after the psychological interventions. The results showed a statistically significant reduction in anxiety levels in the TF-CBT and mindfulness-based approaches groups compared with the control group (Table 4).

The analysis showed a significant anxiety reduction immediately after the intervention and 8 weeks later in the TF-CBT group ($p<0.001$, $d=0.90$) and the Mindfulness-based approaches group ($p<0.001$, $d=0.85$). No significant changes were observed in the control group ($p=0.12$, $d=0.15$). ANOVA revealed significant differences between the study groups after the interventions ($F(2.237)=48.4$, $p<0.001$) and 8 weeks later ($F(2.237)=42.8$, $p<0.001$). In other words, there was a significant reduction in anxiety both at the end of the interventions and 8 weeks later.

Stress levels, as measured by the PSS-10 scale, decreased significantly in both intervention groups, whereas the control group showed no change (Table 5).

The TF-CBT group showed a statistically significant stress reduction ($p<0.001$) with a large effect size (0.90), and the Mindfulness-based approaches group also showed a statistically significant reduction ($p<0.001$) with a large effect size (0.85). The effect persisted 8 weeks after the interventions. The control group showed no significant change ($p=0.12$), with a small effect size (0.15).

A between-groups analysis (ANOVA) revealed statistically significant changes in stress levels after the interventions ($F(2.237)=43.5$, $p<0.001$) and at 8 weeks ($F(2.237)=45.1$, $p<0.001$). The greatest reduction in anxiety was observed in the TF-CBT group.

An assessment of PTSD symptoms using the PCL-5 test revealed a significant reduction in scores immediately following

Table 1. *Protocol for trauma-focused cognitive-behavioural intervention.*

№	Step title:	Duration	Summary
1.	Psychoeducation	1 week (in-person)	Understanding the nature of the trauma and its consequences; alleviation of symptoms;
2.	Acquiring emotional self-regulation skills	1 week (online)	the introduction of relaxation techniques (breathing exercises, muscle relaxation); the development of emotional intelligence skills;
3.	Cognitive restructuring	2 weeks (online/in-person)	examining dysfunctional beliefs; a diary of thoughts; cognitive-emotional reappraisal;
4.	Trauma-focused exposure	2 weeks (online)	re-experiencing the traumatic event in one's memories; emotional attachment (to people, places or events that remind one of the trauma); dividing the traumatic experience into "before" and "after";
5.	Integration	2 weeks (in-person)	Putting acquired skills into practice; Personal development plan.
6.	Group size: 8–10 people Facilitators: qualified psychologists Feedback at the end of each session		

Table 2. *Protocol for Mindfulness-Based Stress Reduction.*

№	Step title:	Duration	Summary of the work
1.	Introduction to mindfulness	1 week (offline)	learning the basic principles of mindfulness; the "here and now" principle;
2.	Breathing exercises and muscle relaxation	2 weeks (online/offline)	breathing meditation, body scan, walking meditation.
3.	Cognitive observation	2 weeks (online)	cognitive distancing; distancing oneself from thoughts.
4.	Reducing stress and anxiety	2 weeks (online/offline)	emotional relaxation, reduced anxiety; development of stress tolerance.
5.	Integration	1 week (offline)	daily practice; reinforcing skills in the independent use of techniques.
6.	Group size: 10 people Facilitators: qualified psychologists Feedback at the end of each session		

Table 3. *Changes in well-being (M ± SD).*

Group	Before intervention	After intervention	In 8 weeks	Effect size (Cohen's d)	p-value
TF-CBT (n=80)	38.2±9.4	77.4±10.5	78.7 ± 14.2	0.95	p<0.001
Mindfulness-based approaches (n=80)	39.3±8.5	70.6±10.9	72.5 ± 12.8	0.75	p<0.001
Control group (n=80)	37.2±7.7	40.9±7.3	40.5 ± 10.6	0.25	p=0.08
F between groups	1.95	52.3	53.6	0.85	p<0.001

Table 4. *Changes in anxiety levels (M ± SD).*

Group	Before intervention	After intervention	In 8 weeks	Effect size (Cohen's d)	p-value
TF-CBT (n=80)	15.2 ± 3.1	7.8 ± 2.9	6.1 ± 1.2	0.90	p < 0.001
Mindfulness-based approaches (n=80)	15.9 ± 3.4	8.5 ± 3.0	7.9 ± 1.8	0.85	p < 0.001
Control group (n=80)	15.0 ± 3.2	13.9 ± 3.1	13.5 ± 2.3	0.15	p = 0.12
F between groups	2.14	48.4	42.8	0.80	p<0.001

Table 5. *Changes in stress levels (M ± SD).*

Group	Before intervention	After intervention	In 8 weeks	Effect size (Cohen's d)	p-value
TF-CBT (n=80)	27.4 ± 12.2	12.4 ± 4.2	11.7 ± 4.8	0.90	p ≤0.001
Mindfulness-based approaches (n=80)	28.8 ± 13.7	14.6 ± 5.1	12.9 ± 5.2	0.85	p≤0.001
Control group (n=80)	25.5 ± 14.1	24.9 ± 5.6	26.5 ± 9.8	0.25	p=0.07
F between groups	1.64	43.5	45.1	0.85	p<0.001

Table 6. *Changes in the PTSD score (M ± SD).*

	Before intervention	After intervention	In 8 weeks	Effect size (Cohen's d)	p-value
TF-CBT (n=80)	58.6±17.1	17.4±5.6	16.1±5.2	0.95	p<0.001
Mindfulness-based approaches (n=80)	62.9±18.7	19.7±6.4	18.2±6.8	0.80	p<0.001
Control group (n=80)	59.5±16.2	55.4±14.3	53.7±12.6	0.20	p=0.32
F between groups	1.99	47.6	49.2	0.85	p<0.001

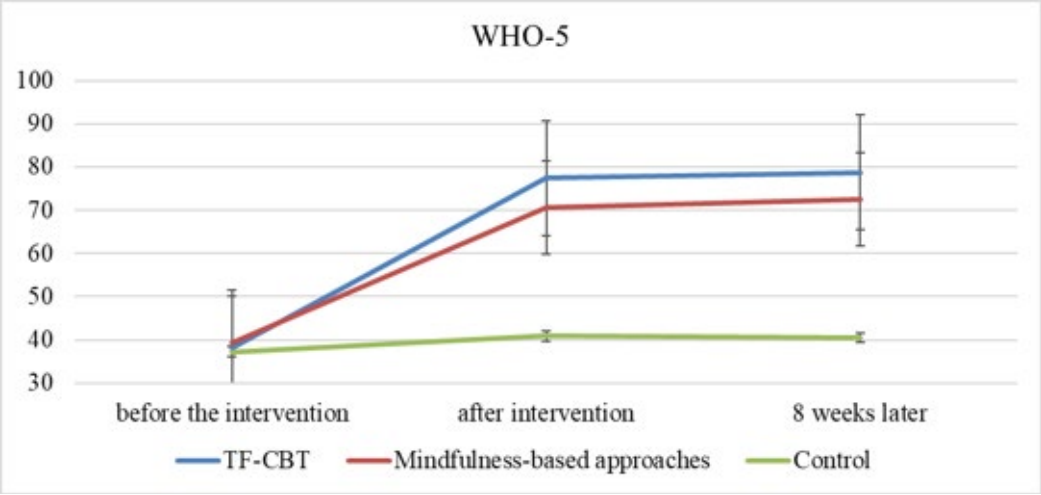


Figure 1. *Dynamics of changes in well-being indicators.*

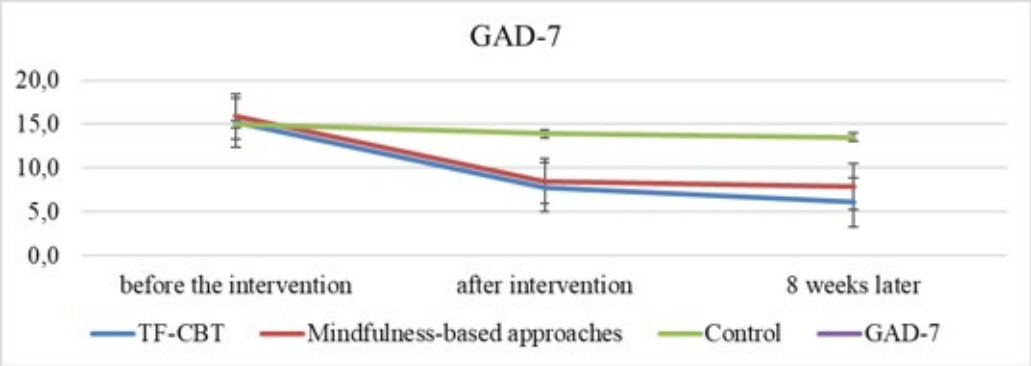


Figure 2. *Dynamics of changes in anxiety indicators.*

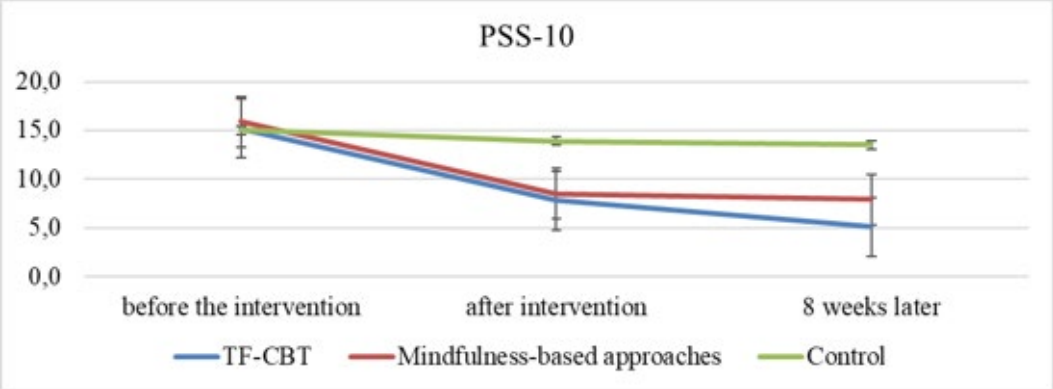


Figure 3. *Dynamics of changes in stress indicators.*

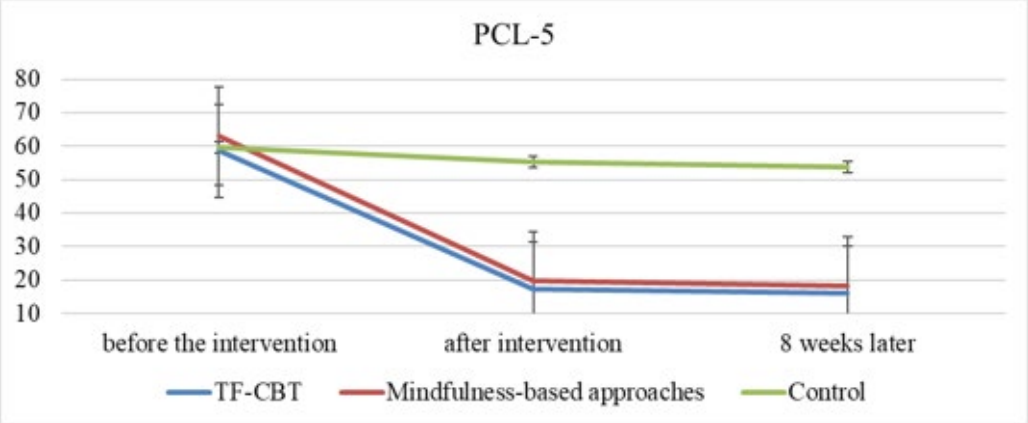


Figure 4. *Dynamics of changes in PTSD indicators.*

the interventions and again after 8 weeks. We evaluated the results for clinical significance and effect size (Table 6).

The TF-CBT group showed a statistically significant reduction in PTSD symptoms ($p<0.001$; effect size = 0.95), and the Mindfulness-based approaches group also showed a statistically significant reduction ($p<0.001$; effect size = 0.80). This indicates a level corresponding to low clinical symptoms. The control group showed no significant changes at post-test or after 8 weeks ($p=0.32$, $d=0.20$). The reduced scores of respondents in the TF-CBT group and the Mindfulness-based approaches group are fully consistent with low levels of PTSD symptoms.

ANOVA revealed a statistically significant reduction in PTSD symptoms in the TF-CBT and Mindfulness-based approaches groups immediately after the interventions ($F(2.237)=47.6$, $p<0.001$) and at the 8-week follow-up ($F(2.237)=49.2$, $p<0.001$).

In addition, we used multiple regression analysis to examine the impact of various factors on treatment effectiveness. The model is significant and explains 55% of the variance ($R^2 = 0.55$, $p < 0.001$). The following were statistically significant predictors: duration of treatment ($\beta = -0.62$, $p < 0.001$) and baseline symptom level ($\beta = 0.49$, $p = 0.01$). At the same time, gender and age were not predictors of therapeutic effect ($p\geq0.05$) and therefore did not influence treatment effectiveness.

The results revealed a clear trend in scores for the Mindfulness-based approaches group and the TF-CBT group after the psychological interventions and 8 weeks thereafter. The TF-CBT group showed the largest increase in well-being scores, whereas the control group showed no change (Figure 1).

We observe a significant decline in anxiety scores in the TF-CBT and mindfulness-based approaches groups. The results are evident immediately after the interventions and again at 8 weeks (Figure 2).

The psychological interventions significantly reduced stress levels among the study groups. A comparison of the results reveals a marked decrease in the average stress score in the TF-CBT and Mindfulness-based approaches groups (Figure 3).

Psychological interventions had a significant effect on reducing the severity of PTSD symptoms in the TF-CBT and mindfulness-based approaches groups. Mean scores after the interventions in these groups fell within the normal range, whereas the control group continued to show high levels (Figure 4).

The study thus identified a positive trend in the reduction of anxiety, stress and PTSD, and an improvement in well-being within the TF-CBT and mindfulness-based approaches intervention groups. The changes were statistically significant both immediately after the interventions and eight weeks later, confirming the effect's reliability.

Discussion.

The results showed that the psychotherapeutic interventions TF-CBT and mindfulness-based approaches were effective in reducing levels of stress, anxiety and PTSD, and in improving the personal well-being of individuals with traumatic experiences. Although both approaches proved highly effective, TF-CBT demonstrated slightly greater efficacy. The control group showed no statistically significant changes, demonstrating the effectiveness of the psychotherapeutic interventions. At the same time, the findings showed that eight sessions for each approach were sufficient to achieve the desired effect; in other words, therapy duration predicts the observed changes. Furthermore, the early onset of symptoms (1–3 months after the trauma) influences the effectiveness of therapy.

Many other studies have reported similar results [4,11,35]. In particular, the significant reduction in anxiety, stress and PTSD scores in the TF-CBT intervention group is consistent with the findings of many studies in which this approach is cited as the "gold standard" of treatment [36]. It is further emphasised that cognitive-behavioural approaches often demonstrate advantages in the treatment of post-traumatic symptoms compared to other forms of intervention [15]. At the same time, some studies highlight the absence of significant long-term differences among leading psychotherapeutic approaches, underscoring the importance of tailoring therapy to the individual [37-39]. These differences suggest that this approach requires further study, particularly regarding individual factors and contextual influences.

The consistency of our findings with those of meta-analyses [8,35] which report an effect that persists for 8 weeks underscores the durability of therapeutic changes following trauma-focused cognitive-behavioural interventions. The effect of reducing symptoms of PTSD, anxiety and stress has also been demonstrated in studies in which mindfulness interventions proved effective in alleviating anxiety and stress [39,40]. More broadly, the authors suggest incorporating repeated mindfulness practices to sustain the effects and consolidate skills in self-regulation and resilience to trauma [4,23]. The observed partial reduction in effect size 8 weeks after the intervention also supports Li's [30] findings that effectiveness depends on the regularity of practice.

However, what distinguishes the studies under review is their specific focus on the effect of TF-CBT in reducing symptoms of anxiety and stress. Alternatively, there are studies examining the effectiveness of mindfulness-based interventions alone in treating PTSD, stress and anxiety [39]. Our results, however, show that both approaches have a significant and long-lasting effect, with TF-CBT potentially serving as the primary psychological intervention and mindfulness as a subsequent supportive measure.

The discrepancies in current research findings are so contradictory that applying these approaches must take into account a wide range of individual factors. This will help us understand which interventions are effective for which groups and in which situations, and when other approaches should be chosen. In line with previous research, we note a need for individual, phased interventions that combine evidence-based approaches with the inclusion of various factors [11].

Limitations.

This study has certain limitations. Firstly, the types of traumatic events were not examined in detail, which may be a significant factor affecting the effectiveness of interventions. Secondly, the age range of the young people may limit the applicability of the results to studies involving younger or older age groups. Thirdly, the effectiveness of the interventions considered for individuals with more long-standing traumatic experiences remains unproven.

Conclusion.

This study evaluated the effectiveness of psychological interventions (TF-CBT and mindfulness-based approaches) in reducing symptoms of anxiety and stress resulting from traumatic experiences. The study implemented an integrated approach based on a factorial structure combining two intervention types and three measurement periods. This design allowed simultaneous comparison of two proven therapeutic approaches. A key finding was the role of recent traumatic experiences, demonstrating the potential for applying these results in the provision of first aid for trauma.

A statistically and clinically significant reduction in anxiety ($p<0.001$, $d=0.85–0.90$), stress ($p<0.001$, $d=0.85–0.90$) and PTSD ($p<0.001$, $d=0.80–0.90$) in the TF-CBT and Mindfulness-based approaches groups compared with the control group ($p>0.05$, $d=0.15–0.20$). The results provide a new perspective on the use of trauma-focused therapy and mindfulness in managing anxiety, stress and PTSD resulting from trauma. These findings are useful for clinical practice in the field of mental health when working with individuals who have experienced traumatic events. Of particular significance is the maintenance of positive changes 8 weeks after the intervention ended, demonstrating the durability of the therapeutic effect. This demonstrates the long-term impact of the interventions and the maintenance of outcomes, reinforcing their effect and promoting mental well-being.

We see potential for further research examining the effects of TF-CBT and mindfulness-based approaches over a longer-term

perspective (6 months to 1 year). We also propose including participants with more prolonged traumatic experiences (6 months or longer) in the study to assess the sustainability of personal changes.

Conflict of interest.

No conflict of interest.

Funding sources.

The authors received no external funding.

Ethical Considerations.

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

REFERENCES

1. Ishchenko Y, Rusnak A, Artemov V, et al. Psychological and pedagogical aspects of adaptation of students who received temporary shelter to the educational environment of another country. Journal of Higher Education Theory and Practice. 2024;24.
2. Camargo A, Casiraghi LP, Vargas R, et al. Psychological resilience and post-traumatic stress disorder: A systematic review and meta-analysis of the effects of intentional and unintentional trauma. Middle East Current Psychiatry. 2025;32.
3. Wild J, Tyson G, Thew G, et al. Cognitive resilience training to prevent PTSD and major depressive disorder in paramedic recruits: A randomised clinical trial. JAMA Network Open. 2025;8:e2557241.
4. Fortes PP, Dos Santos-Ribeiro S, de Salles-Andrade JB, et al. Mindfulness interventions and quality of life in anxiety-related disorders: A systematic review and meta-analysis. Journal of Affective Disorders. 2025;373:383-93.
5. Torres-Giménez A, Garcia-Gibert C, Gelabert E, et al. Efficacy of EMDR for early intervention after a traumatic event: A systematic review and meta-analysis. Journal of Psychiatric Research. 2024;174:73-83.
6. Jernslett M, Kilmer RP, Avraam D, et al. Growing through adversity: A meta-analytic and conceptual elucidation of the relationship between posttraumatic stress and posttraumatic growth among youth. Clinical Psychology Review. 2025;120.
7. Haddad R, Alhusamiah B, Haddad R, et al. The Effectiveness of Using Eye Movement Desensitization and Reprocessing Therapy on Reducing the Severity of Symptoms among Individuals Diagnosed with Post-Traumatic Stress Disorder: A Systematic Review. Research Square. 2024.
8. Krüger-Gottschalk A, Kuck ST, Dyer A, et al. Effectiveness in routine care: trauma-focused treatment for PTSD. European Journal of Psychotraumatology. 2025;16:2452680.
9. Keeley JW, Cardin S, Gonzalez R. The influence of diagnosis on psychotherapy missed opportunities in a veteran population. Psychotherapy Research. 2016;26:120-130.
10. Keyan D, Garland N, Choi-Christou J, et al. A systematic review and meta-analysis of predictors of response to trauma-focused psychotherapy for PTSD. Psychological Bulletin. 2024;150:767-797.
11. Katalan C, Unterrainer HF, Gelo OCG. Psychotherapy for complex post traumatic stress disorder: Efficacy and therapeutic factors. Frontiers in Psychology. 2026;17:1684921.
12. Herman JL. Trauma and recovery. Basic Books; 2015.
13. Van der Kolk BA, McFarlane AC, Weisæth L. Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society. New York: Guilford Press; 1996.
14. Raievska Y, Kulbida S, Lavlinskyy R, et al. Psycho-Emotional Stability of the Individual in the Period of Societal Transformations. Insight: the psychological dimensions of society. 2025;13:519-543.
15. Chipalo E. Is Trauma Focused-Cognitive Behavioral Therapy (TF-CBT) Effective in Reducing Trauma Symptoms among Traumatized Refugee Children? A Systematic Review. Journal of Child & Adolescent Trauma. 2021;14:545-558.
16. Semmlinger V, Leithner C, Klöck LM, et al. Prevalence and Predictors of Nonresponse to Psychological Treatment for PTSD: A Meta-Analysis. Depression and Anxiety. 2024.
17. Shiel EV, Connor Z, Downes M, et al. What Evidence Exists on the Effectiveness of Psychotherapy for Trauma-Related Distress? A Scoping Review. Healthcare. 2025;13:3180.
18. Cuijpers P, Karyotaki E, Reijnders M, et al. Who benefits from psychotherapies for adult depression? A meta-analytic update. World Psychiatry. 2020;19:92-107.
19. Hrys A, Pavluk O, Hoi N, et al. Strategies of Student Youth's Self-Representations in Choosing Behavioral Tendencies. Insight: Psychological Dimensions of Society. 2024;11:184-203.
20. Bryant RA, Dawson KS, Yadav S, et al. Augmenting trauma-focused cognitive behavior therapy for post-traumatic stress disorder with memory specificity training: A randomized controlled trial. World Psychiatry. 2025;24.
21. Kaminer D, Simmons C, Seedat S, et al. Effectiveness of abbreviated trauma-focused cognitive behavioural therapy for South African adolescents: A randomized controlled trial. European Journal of Psychotraumatology. 2023;14:2181602.
22. Li W, Nannestad J, Leow T, et al. The effectiveness of mindfulness-based stress reduction (MBSR) on depression, PTSD, and mindfulness among military veterans: A systematic review and meta-analysis. Health Psychology Open. 2024;11.
23. Liu Q, Zhu J, Zhang W. The efficacy of mindfulness-based stress reduction intervention for post-traumatic stress disorder (PTSD) symptoms in patients with PTSD: A meta-analysis of four randomized controlled trials. Stress and Health. 2022;38:626-636.
24. Makarenko O, Borysenko O, Horokhivska T, et al. Embracing artificial intelligence in education: Shaping the learning path for future professionals. Multidisciplinary Science Journal. 2024;6.
25. Fu Z, Burger H, Arjadi R, et al. Effectiveness of digital psychological interventions for mental health problems in low-income and middle-income countries: a systematic review and meta-analysis. Lancet Psychiatry. 2020;7:851-64.
26. Baldin YC, Sanudo A, Sanchez ZM. Effectiveness of a web-based intervention in reducing binge drinking among nightclub patrons. Revista de Saude Publica. 2018;52.
27. Tedeschi RG, Calhoun LG. Posttraumatic Growth: Conceptual Foundations and Empirical Evidence. Psychological Inquiry. 2004;15:1-18.

28. Cohen JA, Mannarino AP, Deblinger E. Treating Trauma and Traumatic Grief in Children and Adolescents. 2nd ed. Guilford Press; 2017.
29. Jokinen T, Abassi M, Hodsoll J, et al. Group psychosocial interventions for anxiety, depression, and post-traumatic stress disorder in children and adolescents in low- and middle-income countries. PLOS Mental Health. 2026;3:e0000533.
30. Li J, Yuan L, Zhou Y, et al. Cultural adaptation of trauma-focused cognitive behavioral therapy for trauma-affected children in China. Psychological Trauma: Theory, Research, Practice, and Policy. 2024;16:472-482.
31. World Health Organization. Well-Being Measures in Primary Health Care/The Depcare Project. Copenhagen: WHO Regional Office for Europe; 1998.
32. Spitzer RL, Kroenke K, Williams JB, et al. A brief measure for assessing generalized anxiety disorder: the GAD-7. Archives of Internal Medicine. 2006;166:1092-7.
33. Lee EH. Review of the psychometric evidence of the Perceived Stress Scale. Asian Nursing Research. 2012;6:121-127.
34. Blevins CA, Weathers FW, Davis MT, et al. The Posttraumatic Stress Disorder Checklist for DSM 5 (PCL 5): Development and initial psychometric evaluation. Journal of Traumatic Stress. 2015;28:489-498.
35. Kip A, Ritter L, Hoppen TH, et al. Psychological interventions for post-traumatic stress disorder: A systematic review of meta-analyses. Clinical Psychology Review. 2025.
36. Foa EB, Hembree EA, Rothbaum BO. Prolonged Exposure Therapy for PTSD: Emotional Processing of Traumatic Experiences. Oxford University Press; 2019.
37. Krause K, Zhang XC, Schneider S. Long-term effectiveness of cognitive behavioral therapy in routine outpatient care for youth with anxiety disorders. Psychotherapy and Psychosomatics. 2024;93:181-190.
38. Weber M, Schumacher S, Hannig W, et al. Long-term outcomes of psychological treatment for posttraumatic stress disorder: a systematic review and meta-analysis. Psychological Medicine. 2021;51:1420-1430.
39. Jovanovic B, Garfin DR. Mindfulness-based interventions for PTSD: An umbrella review. Journal of Traumatic Stress. 2024.
40. Alvarado-García PAA, Soto-Vásquez MR, Infantes Gomez FM, et al. Effect of a mindfulness program on stress, anxiety, depression, sleep quality, social support, and life satisfaction: a quasi-experimental study in college students. Frontiers in Psychology. 2025;16.

Эффективность психологических интервенций в преодолении тревожности и стресса после травматических событий

Введение: Травматические события существенно ухудшают психологическое благополучие, приводя к устойчивой тревожности, повышенному воспринимаемому стрессу и симптомам посттравматического стрессового расстройства (ПТСР), что требует длительных доказательных терапевтических интервенций. **Цель:** Исследование было направлено на определение краткосрочной и долгосрочной эффективности, а также продолжительности действия травма-фокусированной когнитивно-поведенческой терапии (TF-CBT) и подходов на основе осознанности (mindfulness) в преодолении симптомов тревожности, стресса и ПТСР. **Методы:** Выборка исследования составила 240 участников (возраст 37±12 лет), разделенных на три равные группы по 80 человек: группа TF-CBT, группа подходов на основе осознанности и контрольная группа без вмешательства. В качестве инструментов оценки использовались: Индекс благополучия Всемирной организации здравоохранения-5 (WHO-5), Шкала генерализованного тревожного расстройства (GAD-7), Шкала воспринимаемого стресса (PSS-10) и Чек-лист посттравматического стрессового расстройства (PCL-5). Интервенции оценивались как по краткосрочным результатам, так и по долгосрочной стабильности в течение 8-недельного периода наблюдения. Данные анализировались с использованием регрессионного анализа и моделирования статистической значимости. **Результаты:** Как TF-CBT ($p \leq 0,01$), так и подходы на основе осознанности ($p \leq 0,01$) продемонстрировали статистически значимое снижение уровня тревожности, стресса и ПТСР, а также улучшение общего благополучия респондентов, в то время как в контрольной группе значимых изменений не наблюдалось. Пролонгированный эффект оставался статистически значимым ($p \leq 0,01$) через 8 недель после завершения участия. Общая эффективность терапии существенным образом (на 55%) зависела от продолжительности терапии ($\beta = -0,62$, $p < 0,001$) и исходного уровня симптоматики ($\beta = 0,49$, $p = 0,01$). TF-CBT показала более высокие результаты по сравнению с майндфулнесс. **Заключение:** TF-CBT рекомендуется в качестве первой линии вмешательства при работе с последствиями травматических событий благодаря её более высокой эффективности по сравнению с подходами на основе осознанности. Оба метода эффективно обеспечивают долгосрочное снижение симптоматики и психологическую стабилизацию, что представляет практическую ценность для внедрения в клиническую практику.

Ключевые слова: когнитивно-поведенческая терапия, осознанность, психологическое благополучие, посттравматическое стрессовое расстройство, mental health, психологическая травма.

ფსიქოლოგიური ინტერვენციების ეფექტურობა შფოთვისა და სტრესის მართვაში ტრავმული მოვლენების შემდეგ

შესავალი: ტრავმული მოვლენები მნიშვნელოვნად აქვეითებს ფსიქოლოგიურ კეთილდღეობას, იწვევს ხანგრძლივ შფოთვას, აღქმული სტრესის მაღალ დონესა და პოსტტრავმული სტრესული აშლილობის (PTSD) სიმპტომებს, რაც მოითხოვს ხანგრძლივ და მტკიცებულებებზე დაფუძნებულ თერაპიულ ინტერვენციებს. მიზანი: კვლევის მიზანს წარმოადგენდა ტრავმაზე ფოკუსირებული კოგნიტურ-ბიჰევიორალური თერაპიისა (TF-CBT) და ცნობიერებაზე დაფუძნებული (mindfulness)

მიდგომების მოკლევადიანი და გრძელვადიანი ეფექტურობისა და მოქმედების ხანგრძლივობის დადგენა შფოთვის, სტრესისა და PTSD სიმპტომების მართვაში. მეთოდი: კვლევის შერჩევა მოიცავდა 240 მონაწილეს (ასაკი 37±12), რომლებიც დაიყვნენ სამ თანაბარ ჯგუფად (80-80 მონაწილე): TF-CBT ჯგუფი, mindfulness-ზე დაფუძნებული მიდგომების ჯგუფი და საკონტროლო ჯგუფი. შეფასების ინსტრუმენტებად გამოყენებულ იქნა: ჯანდაცვის მსოფლიო ორგანიზაციის კეთილდღეობის ინდექსი (WHO-5), გენერალიზებული შფოთვითი აშლილობის სკალა (GAD-7), აღქმული სტრესის სკალა (PSS-10) და პოსტტრავმული სტრესული აშლილობის კითხვარი (PCL-5). ინტერვენციები შეფასდა როგორც მოკლევადიანი შედეგების, ისე გრძელვადიანი სტაბილურობის მიხედვით 8-კვირიანი დაკვირვების პერიოდში. მონაცემები გაანალიზდა რეგრესიული და სტატისტიკური მნიშვნელოვნების მოდელირების გამოყენებით. შედეგები: როგორც TF-CBT-მ ($p \le 0.01$), ისე mindfulness-ზე დაფუძნებულმა მიდგომებმა ($p \le 0.01$) აჩვენეს შფოთვის, სტრესისა და PTSD-ს სტატისტიკურად მნიშვნელოვანი შემცირება, ასევე ზოგადი კეთილდღეობის გაუმჯობესება, მაშინ როდესაც საკონტროლო ჯგუფში მნიშვნელოვანი ცვლილებები არ დაფიქსირებულა. ხანგრძლივი ეფექტი სტატისტიკურად მნიშვნელოვანი დარჩა ($p \le 0.01$) მონაწილეობიდან 8 კვირის შემდეგაც. თერაპიის საერთო ეფექტურობა მნიშვნელოვნად (55%-ით) იყო დამოკიდებული თერაპიის ხანგრძლივობაზე ($\beta = -0.62$, $p < 0.001$) და სიმპტომების საწყის დონეზე ($\beta = 0.49$, $p = 0.01$). TF-CBT-მ აჩვენა უკეთესი შედეგები mindfulness-თან შედარებით. დასკვნა: TF-CBT რეკომენდებულია, როგორც პირველი რიგის ძირითადი ინტერვენცია პოსტტრავმული შედეგების მართვისას, mindfulness-ზე დაფუძნებულ მიდგომებთან შედარებით მისი მაღალი ეფექტურობის გამო. ორივე მეთოდი ეფექტურად უზრუნველყოფს სიმპტომების გრძელვადიან შემცირებასა და ფსიქოლოგიურ სტაბილიზაციას, რაც პრაქტიკულად ღირებულია კლინიკურ პრაქტიკაში დასანერგად.

საკვანძო სიტყვები: კოგნიტურ-ბიჰევიორალური თერაპია, ცნობიერება (mindfulness), კეთილდღეობა, პოსტტრავმული სტრესული აშლილობა, ფსიქიკური ჯანმრთელობა, ფსიქოლოგიური ტრავმა.