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

PERCEIVED CAUSES AND CONSEQUENCES OF DIAGNOSTIC ERRORS IN THE SECOND-TRIMESTER FETAL ANOMALY SCAN

Shaikha Fatmah Al Sharqia[1], Magdy Ali Abdou Gouda[1], Praveen Kumar[2], Shima Ibrahim Ali[1,3].

[1]*Medical Imaging Sciences, College of Health Sciences, Gulf Medical University, Ajman, United Arab Emirates.*

[2]*Department of Physiotherapy, Faculty of Health Sciences, Gulf Medical University, Ajman, United Arab Emirates*

[3]*Department of Diagnostic Radiologic Technology, Faculty of Radiology Science and Medical Imaging, Alzaiem Alazhari University, Khartoum, SDN.*

Abstract.

Introduction: Diagnostic errors in the second-trimester fetal anomaly scan matter because they can shape prenatal decision-making, patient safety, psychological wellbeing, and medico-legal outcomes. In the UAE, such errors may arise from a mix of maternal, technical, human, and institutional factors. This study aimed to determine the precervid main causes and effects of diagnostic failures in second-trimester fetal anomaly scans across the UAE healthcare system, as documented by ultrasound practioners.

Methods: This was cross-sectional survey involving 75 ultrasound practitioners (sonographers, radiologists, and obstetricians) drawn from governmental hospitals, private hospitals, private clinics, and university hospitals. A structured questionnaire captured demographic data, perceived causes of diagnostic error, the perceived consequences of these errors, and self-reported professional practice. Data were summarized descriptively and examined using inferential statistics. Descriptive and inferential statistics were applied using IBM SPSS 30 with non-parametric Kruskal Wallis H and Man Whitney U test to compared mean scores between participant groups. A p value < 0.05 was considered statistically significance.

Results: Among the 75 respondents, the causes cited most often were limited scan time, heavy workload, maternal obesity, fetal position, fatigue, and time pressure. The consequences reported most consistently were patient anxiety, unnecessary further investigation, inappropriate management, and medico-legal difficulties. Years of experience were strongly related to familiarity with the causes of error ($p= 0.020$), and adherence to guidelines tracked closely with stronger professional practice ($p=0.004$).

Conclusion: From the perspective of practitioners, diagnostic error in this setting is rarely the product of a single failure; it is perceived emerges from several factors acting together. Reducing it will require adequate scan time, ongoing training, standardized reporting, regular audit, clear guidance, and stronger institutional support across UAE prenatal services.

Key words. Diagnostic errors, second-trimester fetal anomaly scan, prenatal ultrasound.

Introduction.

The second-trimester fetal anomaly scan, performed between 18 and 22 weeks of pregnancy, is a cornerstone of routine antenatal care. It allows clinicians to track fetal development, identify structural birth defects, and plan appropriate care [1]. A timely, accurate diagnosis at this stage opens the door to prompt specialist referral, informed parental counselling, and considered planning around delivery and newborn care. Ultimately, maternal and infant outcomes hinge on how well this single scan is performed. Yet even with high-quality imaging equipment and well-established international guidelines, misdiagnosis still occurs. The recurring problems are missed conditions, delayed diagnosis, and misread images, each of which can carry serious clinical, emotional, and legal consequences [2]. Rarely does a single cause explain an error; more often, limitations in equipment, gaps in practitioner skill, maternal health factors, and workplace pressures combine. Because these scans carry real weight in clinical decision-making, even a small oversight can undermine pregnancy management and erode patient trust. Several strands of evidence point to what drives these errors. On the technical side, suboptimal image quality can obscure fetal anatomy and lower detection rates, and outcomes are further shaped by machine settings and how closely standard scanning protocols are followed. The skill of the practitioner performing the scan matters just as much [1], obtaining and correctly interpreting clear images calls for technical proficiency, sound anatomical knowledge, and good clinical judgement together. Human and organisational factors add another layer - stress, time constraints, heavy caseloads, and burnout can all erode concentration - while physical factors such as maternal obesity attenuate the ultrasound signal, and an unfavourable fetal position can simply hide the structures a sonographer needs to see [2]. Professional bodies such as the International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) have developed protocols intended to standardise scan quality [3]. These are widely adopted, but applied unevenly from one hospital or clinic to another. In the UAE, prenatal care spans governmental hospitals, private hospitals, university hospitals, and private clinics, and maintaining a single standard of practice across such a varied landscape is not straightforward. While international literature on ultrasound diagnostic error is reasonably well developed, very little of it speaks specifically to the UAE context. This study was therefore designed to identify the principal causes and consequences of diagnostic error in second-trimester scans within the UAE, drawing on the perspectives of practitioners across different healthcare sectors. It tested the hypothesis that heavy workload and inconsistent adherence to protocol are the main drivers of diagnostic inaccuracy, and, as a secondary aim, examined how these errors affect clinical follow-up and patient management in the region.

Materials and Methods.

Study Design:

This was a quantitative, cross-sectional study survey used to identify the preceived causes and consequences of diagnostic errors in second-trimester fetal anomaly scans within the UAE.

Study setting and Participants:

The study was conducted across governmental hospitals, private hospitals, university hospitals, and private clinics in the UAE. Participants were healthcare professionals directly involved in performing second-trimester fetal anomaly scans and at least two years of experience who are now working in the United Arab Emirates, and voluntary informed consent were included in the study. Professionals with no involvement in obstetric ultrasound, no experience with second-trimester anomaly scans, or an incomplete questionnaire were excluded.

Sample size and sampling:

Seventy-five ultrasound practitioners took part. Based on Cohen's recommendations for survey research [4], this sample size was judged sufficient to detect moderate relationships between study variables while retaining adequate statistical power. Participants were recruited from multiple institutions using stratified sampling, with strata defined by both professional role (sonographer, radiologist, obstetrician) and healthcare sector (governmental hospital, private hospital, university hospital, private clinic), so that the different professional groups and practice settings were all represented in the final sample.

Survey Administration:

A structured questionnaire was built using Google Forms. The survey was open and accessible to respondents from January to March 2026. Each participant provided written consent electronically after reading the study information provided on the opening page of the survey prior to accessing and completing the questionnaire.

It comprised five sections. The first recorded demographic details: age, gender, profession, years of experience, and type of healthcare institution. The second asked participants to rate, on a five-point Likert scale, how strongly a set of factors - image quality, operator experience, maternal obesity, fetal position, workload, fatigue, time pressure, and equipment-related issues – they perceived to contribute to diagnostic error.

The third section addressed the perceived consequences of diagnostic error, asking participants to rate its impact on patient anxiety, delayed diagnosis, unnecessary investigation, inappropriate clinical management, and medico-legal exposure. The fourth assessed professional practice, covering adherence to ISUOG guidelines, use of standardised reporting systems, adequacy of scan time, participation in continuing professional education, and involvement in quality assurance. The fifth and final section consisted of open-ended questions inviting comments and suggestions for improving diagnostic accuracy in fetal anomaly scanning.

Before the main study, the questionnaire was piloted with a small group of eligible practitioners to check its clarity, relevance, and readability; their feedback shaped the wording and layout of the final version.

Data analysis:

Data were analysed use IBM SPSS 30. Descriptive statistics summarised participant characteristics and questionnaire responses: categorical variables as frequencies and percentages, continuous variables as means and standard deviations. Associations between categorical variables with non-parametric Kruskal Wallis H and Man Whitney U, to compared mean scores between participant groups were tested using. Chi-square tests and one-way ANOVA compared mean scores between participant groups where appropriate, and correlation analysis examined relationships between selected continuous variables. A p value < 0.05 was considered statistically significance.

Ethical approval:

The study was approved by the Gulf Medical University Institutional Review Board (IRB-COHS-STD-107- Dec-2025). The study was conducted in accordance with the principles outlined in the Declaration of Helsinki. All participants were informed prior to the formal survey, and their consent was secured. All participants were directed to complete the questionnaire in full. The objectives and background of the research were elucidated to the participants. The participants were advised that they could withdraw from the study at any time without justification and that all information would remain confidential.

Results.

This section reports the findings on the causes and consequences of diagnostic error in second-trimester fetal anomaly scans among ultrasound practitioners in the UAE, organised around four areas: participant demographics, perceived causes of diagnostic error, perceived consequences of diagnostic error, and professional practice.

Demographic characteristics:

Table 1 summarises the sample. Women made up almost two-thirds of participants (64.0%), and just over a third were aged over 40 years (36.0%), with the remainder fairly evenly split between 20-30 and 31-40. Nearly half (45.3%) had five years of experience or less, while just under a third (30.7%) had more than ten. Sonographers were the largest professional group (44.0%), followed by radiologists (32.0%) and obstetricians (24.0%), and participants were drawn mainly from governmental hospitals (41.3%) and private hospitals (30.7%), with smaller contributions from private clinics and university hospitals. Most participants (56.0%) had completed specialised fetal anomaly training within the past three years, and almost three-quarters (73.3%) reported adhering to international or institutional guidelines such as ISUOG, although a further 17.3% were not sure whether they did.

Perceived causes of diagnostic error:

Table 2 sets out participants' perceived ratings of the factors contributing to diagnostic error. Restricted scan time (mean 3.36) and workload-related time pressure on scan thoroughness (mean 3.29) were rated highest, followed by maternal obesity (mean 3.27), fatigue or time pressure generally (mean 3.23), and fetal position (mean 3.13) — all reaching a 'high' decision threshold. Communication gaps, equipment maintenance issues, inadequate documentation, poor image quality, and inadequate operator training were all rated lower, in the 'low' category, with means clustered between 2.75 and 2.91. The weighted average across all ten items was 3.05 (median 3), indicating that, on balance, participants regarded these factors as moderate rather than dominant contributors individually, even though several were rated consistently high.

Perceived consequences of diagnostic error:

Table 3 shows that participants rated the perceived consequences of diagnostic error considerably more strongly than the causes, with a domain mean of 4.18 (median 4). Patient anxiety was rated highest (mean 4.28), followed closely by medico-legal implications and inappropriate management (both mean 4.23-4.21), and unnecessary further investigation (mean 4.23). Items relating to institutional safeguards — audit systems, effective communication, and documentation as legal protection — were still rated positively (means 4.04-4.16) but fell into the 'low' decision category relative to the other items, suggesting participants saw these as somewhat less certain protective mechanisms than the direct clinical and emotional consequences of error.

Professional practice:

Table 4 summarises reported professional practice, which averaged 3.99 (median 4) across the five items. Use of a standardised reporting template (mean 4.01), routine image archiving for medico-legal protection (mean 4.01), and participation in refresher courses and continuing education (mean 4.04) were rated highest. Compliance with ISUOG or comparable requirements (mean 3.96) and allowing sufficient time per scan (mean 3.93) were rated somewhat lower, falling into the 'low' decision category, and echo the time-pressure concerns already evident in Table 2.

Distribution testing and inferential analyses:

Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that scores on all three domains departed significantly from a normal distribution ($p<0.05$ for all domains on both tests; Table 5), supporting the use of non-parametric methods for the group comparisons that follow.

Table 6 presents Kruskal-Wallis comparisons of the three domain scores across demographic and workplace variables. Years of experience showed a significant association with familiarity with the causes of diagnostic error ($\chi^2=7.814$, df=2, $p=.020$); pairwise comparison localised this to a significant difference between practitioners with 1-5 years and those with more than 10 years of experience ($p=.020$). Adherence to institutional guidelines was significantly associated with the professional practice score ($\chi^2=10.910$, df=2, $p=.004$), with pairwise comparison showing a significant difference between those who answered 'yes' and those who answered 'not sure' ($p=.003$). No other demographic variable — age group, profession, workplace, exams per day, or education level - reached significance for any of the three domains.

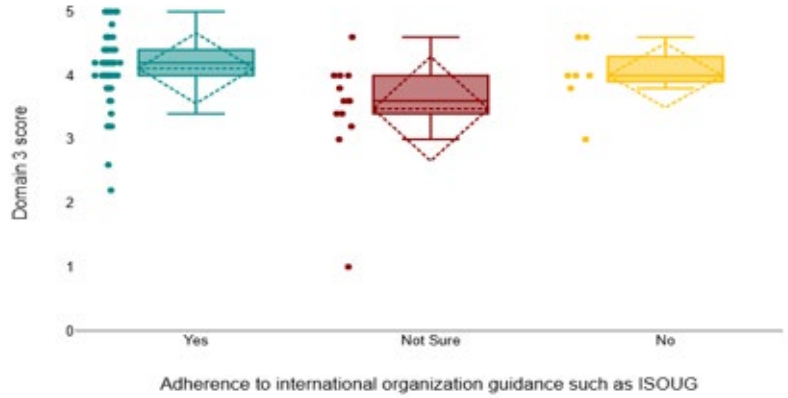


Figure 1. *Relationship between guideline adherence and professional-practice score.*

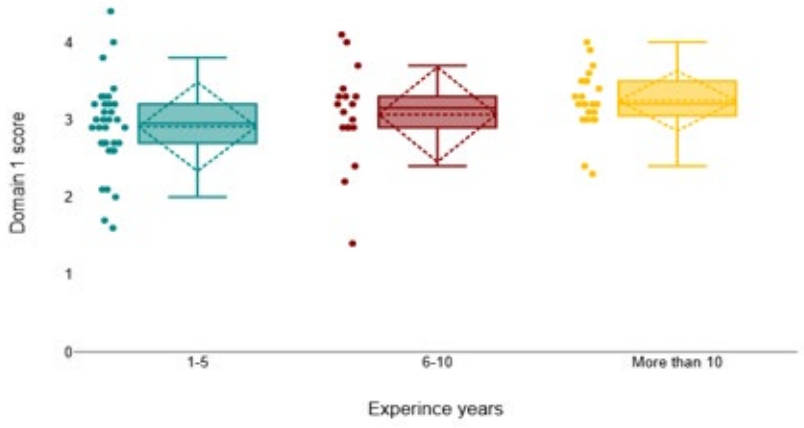


Figure 2. *Relationship between familiarity with diagnostic error and years of experience.*

Table 1. *Demographic characteristics of the study participants (n=75).*

Demographic characteristic	Frequency (n)	Percent (%)
Gender		
Male	27	36
Female	48	64
Age group (year)		
20-30	26	34.7
31-40	22	29.3
More than 40	27	36
Experience (year)		
1- 5	34	45.3
6- 10	18	24
More than 10	23	30.7
Specialty		
Sonographer	33	44
Radiologist	24	32
Obstetrician	18	24
Area of work		
Governmental hospital	31	41.3
Private hospital	23	30.7
Private clinic	10	13.3
University hospital	11	14.7
Exams per day		
Less than 10	30	40
10-20	27	36
More than 20	18	24
Education level		
Higher Diploma	12	16
B.Sc.	16	21.3
M.Sc.	34	45.3
Ph.D.	13	17.3
Specialised fetal anomaly training in past 3 years		
Yes	42	56
No	33	44
Adherence to international/institutional rules (e.g., ISUOG)		
Yes	55	73.3
No	7	9.3
Not sure	13	17.3
Total	75	100

Table 2. *Frequency distribution of responses on perceived causes of diagnostic error.*

Item	Responses					Mean	Median	Decision
	Never	Rarely	Sometimes	Often	Always			
Inadequate operator training	5 (6.7%)	17 (22.7%)	37 (49.3%)	12 (16.0%)	4 (5.3%)	2.91	3	Low
Poor image quality	5 (6.7%)	17 (22.7%)	37 (49.3%)	12 (16.0%)	4 (5.3%)	2.91	3	Low
Fetal position	4 (5.3%)	8 (10.7%)	38 (50.7%)	24 (32.0%)	1 (1.3%)	3.13	3	High
Maternal obesity	4 (5.3%)	8 (10.7%)	31 (41.3%)	28 (37.3%)	4 (5.3%)	3.27	3	High
Inadequate documentation	4 (5.3%)	21 (28.0%)	38 (50.7%)	11 (14.7%)	1 (1.3%)	2.79	3	Low
Fatigue or time pressure	3 (4.0%)	13 (17.3%)	31 (41.3%)	20 (26.7%)	8 (10.7%)	3.23	3	High
Communication gap with referring physician	5 (6.7%)	14 (18.7%)	45 (60.0%)	8 (10.7%)	3 (4.0%)	2.87	3	Low
Equipment maintenance issues	3 (4.0%)	25 (33.3%)	38 (50.7%)	6 (8.0%)	3 (4.0%)	2.75	3	Low
Scan thoroughness is impacted by a heavy workload	3 (4.0%)	9 (12.0%)	36 (48.0%)	17 (22.7%)	10 (13.3%)	3.29	3	High
Time allowed is restricted (<30-40 min per anomaly scan)	2 (2.7%)	9 (12.0%)	34 (45.3%)	20 (26.7%)	10 (13.3%)	3.36	3	High

Table 3. *Frequency distribution of responses on perceived consequences of diagnostic error.*

Domain 1 (questions)	Responses					Mean	Median	Decision
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree			
Diagnostic errors cause patient anxiety	1 (1.3%)	2 (2.7%)	6 (8.0%)	32 (42.7%)	34 (45.3%)	4.28	4	High
Errors led to unnecessary further investigation	2 (2.7%)	0 (0.0%)	8 (10.7%)	34 (45.3%)	31 (41.3%)	4.23	4	High
Errors can result in inappropriate management	1 (1.3%)	3 (4.0%)	3 (4.0%)	40 (53.3%)	28 (37.3%)	4.21	4	High
Diagnostic errors lead to medico-legal implications	1 (1.3%)	2 (2.7%)	5 (6.7%)	38 (50.7%)	29 (38.7%)	4.23	4	High
Institutional audit systems reduce diagnostic errors	1 (1.3%)	2 (2.7%)	6 (8.0%)	41 (54.7%)	25 (33.3%)	4.16	4	Low
Malpractice is less likely with effective communication	1 (1.3%)	1 (1.3%)	7 (9.3%)	45 (60.0%)	21 (28.0%)	4.12	4	Low
Clinicians are protected in legal reviews by appropriate documentation	1 (1.3%)	3 (4.0%)	9 (12.0%)	41 (54.7%)	21 (28.0%)	4.04	4	Low

Table 4. *Professional practice related to the anomaly scan.*

Domain 1 (questions)	Responses					Mean	Median	Decision
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree			
Our establishment complies with ISUOG or comparable international requirements	1 (1.3%)	2 (2.7%)	12 (16.0%)	44 (58.7%)	16 (21.3%)	3.96	4	Low
Each anomaly scan uses a standardized reporting template	2 (2.7%)	1 (1.3%)	9 (12.0%)	45 (60.0%)	18 (24.0%)	4.01	4	High
I give each anomaly scan sufficient time (30-40 minutes)	1 (1.3%)	3 (4.0%)	12 (16.0%)	43 (57.3%)	16 (21.3%)	3.93	4	Low
Image archiving is frequently done for medico-legal protection	1 (1.3%)	4 (5.3%)	6 (8.0%)	46 (61.3%)	18 (24.0%)	4.01	4	High
Refresher courses and continuing education are frequently provided	1 (1.3%)	2 (2.7%)	12 (16.0%)	38 (50.7%)	22 (29.3%)	4.04	4	High

Table 5. *Normality test results.*

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Domain 1	0.154	75	0.000	0.957	75	0.013
Domain 2	0.141	75	0.001	0.882	75	0.000
Domain 3	0.198	75	0.000	0.880	75	0.000
a. Lilliefors Significance Correction						

Table 6. *Kruskal-Wallis comparison of familiarity and practice scores across demographic variables.*

Demographic variable	Domain	χ^2	df	P value
Age group	Familiarity with causes of diagnostic errors	5.573	2	0.062
	Familiarity of consequence of diagnostic errors	0.399	2	0.819
	Score of professional practice related to anomaly scan	1.262	2	0.532
Experience	Familiarity with causes of diagnostic errors	7.814	2	0.020
	Familiarity of consequence of diagnostic errors	0.334	2	0.846
	Score of professional practice related to anomaly scan	0.652	2	0.722
Profession	Familiarity with causes of diagnostic errors	5.36	2	0.069
	Familiarity of consequence of diagnostic errors	2.40	2	0.300
	Score of professional practice related to anomaly scan	1.24	2	0.537
Workplace	Familiarity with causes of diagnostic errors	4.856	3	0.183
	Familiarity of consequence of diagnostic errors	1.080	3	0.782
	Score of professional practice related to anomaly scan	0.255	3	0.968
Exams per day	Familiarity with causes of diagnostic errors	2.49	2	0.288
	Familiarity of consequence of diagnostic errors	2.63	2	0.268
	Score of professional practice related to anomaly scan	1.56	2	0.459

Education level	Familiarity with causes of diagnostic errors	4.57	3	0.206
	Familiarity of consequence of diagnostic errors	5.22	3	0.156
	Score of professional practice related to anomaly scan	6.21	3	0.102
Adherence to institutional guideline	Familiarity with causes of diagnostic errors	0.265	2	0.876
	Familiarity of consequence of diagnostic errors	4.997	2	0.082
	Score of professional practice related to anomaly scan	10.910	2	0.004
Pairwise comparison shows sig difference between 1-5 and more than 10 years in domain 1 (p =0.020). Pairwise comparison shows sig difference between yes and not sure in domain 3 (p =0.003).				

Table 7. *Mann-Whitney U comparison of domain scores by gender and recent fetal anomaly training.*

Factors		Domains	n	Mean Rank	Sum of Ranks	U	P value
Gender	Female	Domain 1	48	38.71	1858	614	0.712
	Male		27	36.74	992		
	Female	Domain 2	48	36.07	1731.5	555.5	0.311
	Male		27	41.43	1118.5		
	Female	Domain 3	48	36.27	1741	565	0.364
	Male		27	41.07	1109		
Training	Yes	Domain 1	42	33.1	1390	487	0.029
	No		33	44.24	1460		
	Yes	Domain 2	42	39.69	1667	622	0.453
	No		33	35.85	1183		
	Yes	Domain 3	42	38.18	1603.5	685.5	0.941
	No		33	37.77	1246.5		

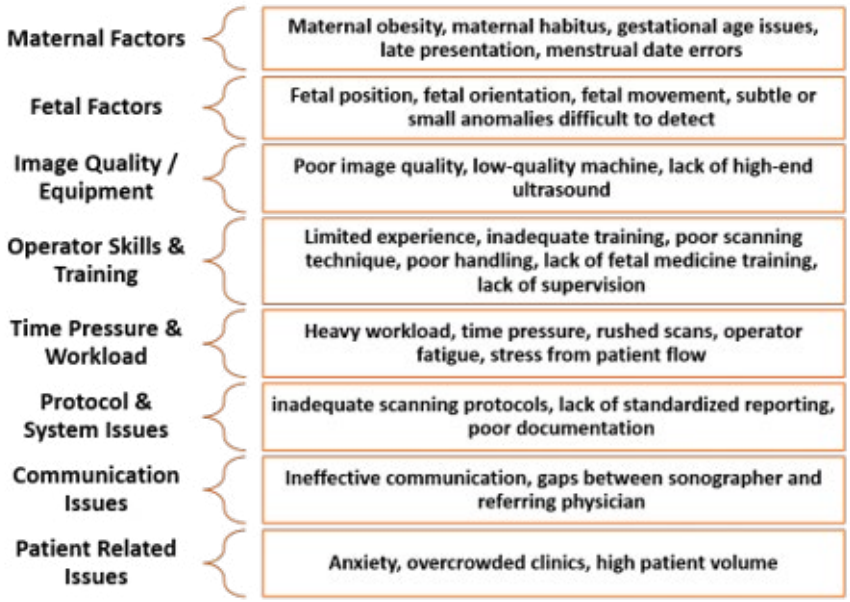
Mann-Whitney U comparisons by gender and by recent specialised training are shown in Table 7. Gender was not significantly associated with any of the three domain scores. Recent fetal anomaly training, however, was significantly associated with familiarity with the causes of diagnostic error (U=487.0, p=.029), with untrained practitioners showing a higher mean rank (44.24) than trained practitioners (33.10); training showed no significant association with the consequences or professional-practice domains.

Figures 1 and 2 present the relationship between guideline adherence and professional-practice scores, and between familiarity with diagnostic error and years of experience, respectively.

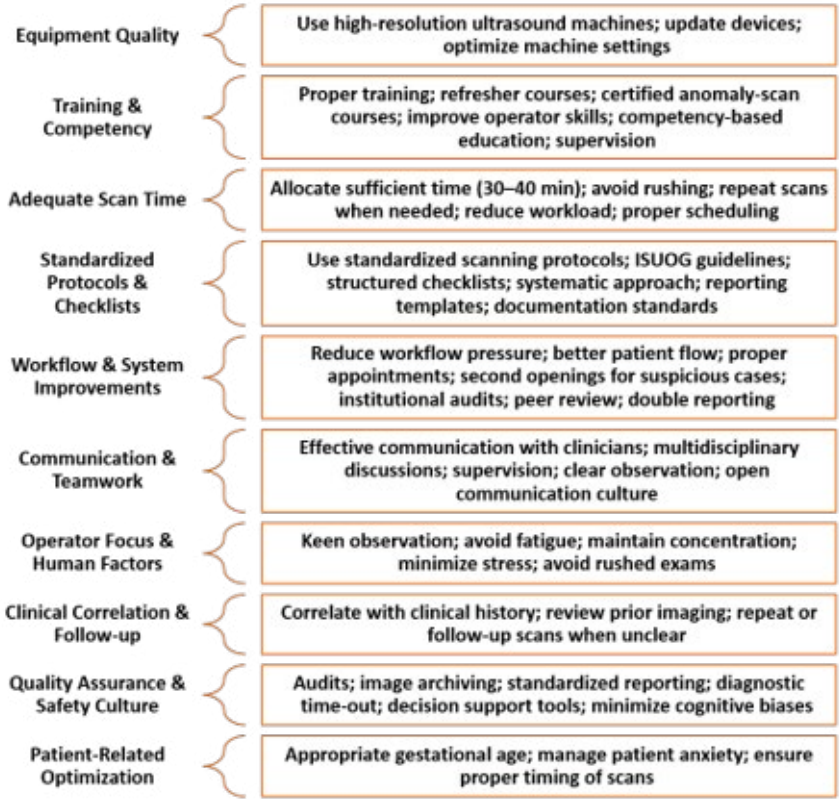
Open-ended responses:

The final section of the questionnaire invited free-text responses on the perceived contributing factors behind errors or suboptimal scans, on strategies to reduce these errors, and on the additional resources practitioners felt were needed to improve scan quality. These qualitative responses are summarised thematically below.

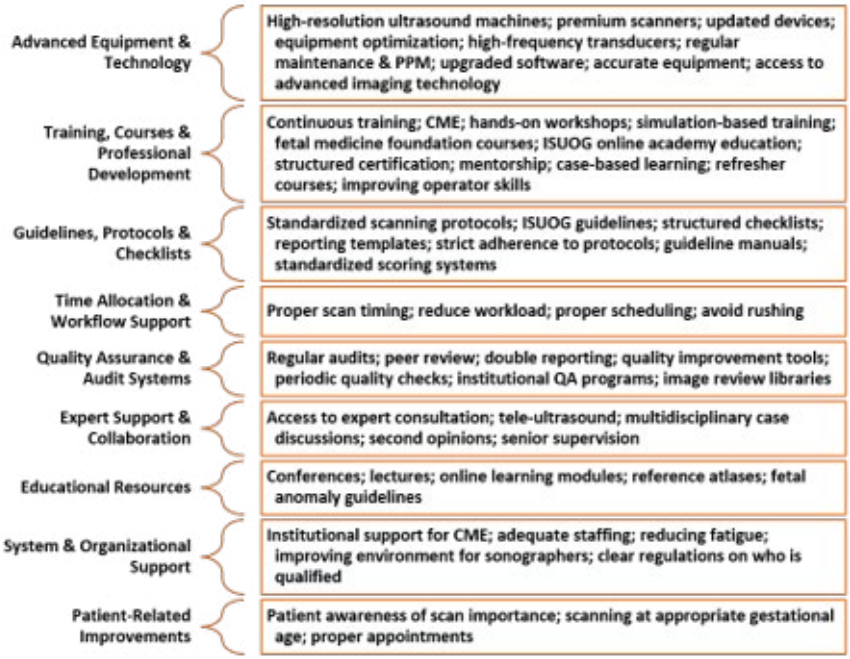
Contributing factors to errors / suboptimal anomaly scans.



Strategies to reduce errors in anomaly scans.



Additional resources needed to improve anomaly scan quality.



Discussion.

Ultrasound practitioners in the UAE do not see diagnostic error in second-trimester fetal anomaly scanning as the product of any single failing. Rather, they describe it as something that emerges where organizational pressures workload, scan time - meet maternal and fetal factors that are largely outside anyone's control. The consequences they describe, in turn, extend well past the scan room itself, touching patient wellbeing, healthcare resource use, and professional liability. Below, we set these findings alongside the wider literature.

Workload and scan time:

Restricted scan time and heavy workload were the two most

frequently perceived causes of error in our sample (means 3.36 and 3.29), and this result agree with study done by Li and Wu [5] found that time constraints materially affected first-trimester ultrasound screening for structural anomalies in twin pregnancies, and the ISUOG practice guideline on invasive prenatal procedures produced by Ghi et al [6] recommends protected, adequate time for detailed fetal assessment as a precondition for accuracy, not an optional extra. Study done by Kearin M et al [7] linked constrained examination conditions to reduced diagnostic accuracy in obstetric ultrasound. Our finding that only 57.3% of participants agreed they personally give each anomaly scan the recommended 30-40 minutes (Table 4) suggests this is not merely a perception but a description of everyday practice, and it points toward appointment scheduling as one of the more tractable levers available to UAE institutions.

Fatigue emerged as a related concern (mean 3.23), which is unsurprising given how much a fetal anomaly scan depends on sustained visual attention and pattern recognition. The study done by Miceli [8], reviewing fetal cardiac anomaly detection, similarly noted that diagnostic performance is not fixed but varies with the circumstances of the individual examination. The workload supports the view that a busy list and a tired practitioner are not two separate problems, but the same problem seen from two angles.

Maternal obesity:

Maternal obesity was rated as a perceived cause of diagnostic error (mean 3.27). This result matched with study done by Dude et al [9], documented the reduction in ultrasound sensitivity and increase in the need for repeat scanning during fetal growth assessment in obese nulliparous women. Al Suwaidi et al [10], writing on the fetal anomaly screening scan from an international perspective, note that detection rates for major structural malformations vary widely (from roughly 15% to over 90%) because of factors like, equipment settings and sonographer experience.

Fetal position:

Unfavorable fetal position (mean 3.13) was the least perceived factors identified diagnostic error - no amount of operator skill can force a fetus to present its spine, face, or four-chamber cardiac view on demand. This matches with review done by Buijtendijk et al [11] identified fetal position among the recurring technical obstacles to detect fetal abnormalities, our findings also consistent with other studies done by Qi Yet al. [12] and Dewi et al [13], cited fetal position as one of the practical constraints that must work around. Repeat scanning, or scheduling a follow-up appointment once the fetus has had time to change position, remains the most realistic response to this obstacle.

Experience and awareness of error:

Years of professional experience were significantly associated with familiarity with the perceived causes of diagnostic error in our data (p=.020), with the clearest contrast between practitioners with 1-5 years of experience and those with more than 10. This is entirely consistent with study done by Al Suwaidi et al [10] identifying sonographer experience as a key factor behind the wide range of reported detection rates for major fetal anomalies. Meservy D et al [14] made the point that ongoing education, not just years on the job, is what sustains quality of care.

Guideline adherence and professional practice:

Adherence to institutional guidelines was significantly associated with stronger professional practice scores (p=.004), and the comparison was informative that the gap between practitioners who reported adhering to guidelines and those who were not sure whether they did (p=.003). This is consistent with study done by Ghi et al [6], whose ISUOG guidelines were designed precisely to reduce this kind of ambiguity by giving practitioners an explicit, structured standard to work against, and also agree with Combs et al. study (2024) [17], who developed a quantitative approach to reviewing the quality of prenatal ultrasound examinations, combining practice-wide review of fetal biometry measurements with focused image review for personnel whose measurements were outliers. Taken together, such structured standards and audit processes may help reduce the uncertainty about guideline application that some respondents reported.

Consequences of error: patients, systems, and liability:

Patient anxiety was the most strongly endorsed perceived consequence in our data (mean 4.28), and this is well supported study done by Nakic Radoš et al. [15] found that diagnostic uncertainty during pregnancy is reliably associated with elevated maternal anxiety, both before and after the examination. Unnecessary further investigation (mean 4.23) is the practical corollary of that anxiety. Once a finding is uncertain, clinical response is to seek confirmation - repeat scanning, referral for specialist imaging.

Inappropriate clinical management (mean 4.21) highlights that a fetal anomaly scan is not an isolated procedure-it directly informs decisions regarding antenatal surveillance, delivery timing and location, specialist referrals, and neonatal preparedness. As Dewi et al [13] both emphasize, accurate and timely prenatal diagnosis is the essential foundation that enables effective multidisciplinary planning. Finally, medico-legal implications were rated among the top perceived consequences (mean 4.23). This result is consistent with study done by Brady AP et al [16], described diagnostic imaging as an area of medicine carrying substantial medico-legal exposure precisely.

Limitations.

This study has two main limitations. First, it relies on self-reported perceptions rather than documented clinical data, so the findings reflect perceived—not measured—causes and consequences and. Second, the small sample (n = 75) limits generalizability. Future research should pair surveys with audits of documented antenatal–postnatal discrepancies to test whether perceived factors relate to actual diagnostic errors.

Conclusion.

From the perspective noted by ultrasound practioiner, diagnostic error in the second-trimester fetal anomaly scan reflects a combination of human, maternal, technical, and organisational factors rather than any single failure. Heavy workload, limited scan time, fatigue, maternal obesity, and fetal position stood out as the leading perceived contributors, while patient anxiety, unnecessary investigation, inappropriate

clinical management, and medico-legal exposure were the perceived consequences reported most often. Greater experience and stronger guideline adherence were both associated with better awareness and more consistent professional practice. These findings reflect what practitioners think and say they do, not measured error rates. Treat them as a springboard for future research that objectively tracks diagnostic accuracy and error rates in this setting. Collectively, these findings point to continuing professional education, adequate institutional support, standardised protocols, and regular quality assurance as the practical levers most likely to improve diagnostic accuracy and strengthen prenatal ultrasound services across the UAE.

Declarations.

Artificial intelligence tools were used merely for language refinement, grammar correction, and enhancing readability during the formulation of this manuscript. No AI tool contributed to the study design, data analysis, interpretation of results, or generation of scientific content. All AI assisted text was reviewed, edited, and verified by the authors, who take full responsibility for the final manuscript.

Conflict of Interest Statement.

The authors have no conflicts of interest to declare.

Funding Sources.

This study was not supported by any sponsor or funder.

Author Contributions.

Conceptualization, methodology, and writing – original draft preparation: S.I.A. Formal analysis, data curation, and writing – review and editing: S.F.A. and S.I.A. All authors have read and agreed to the published version of the manuscript.

Data Availability Statement.

All data generated or analyzed during this study are included in this article. Further inquiries can be directed to the corresponding author.

REFERENCES

1. Salomon LJ, Alfirevic Z, Berghella V, et al. Practice guidelines for performance of the routine mid-trimester fetal ultrasound scan. Ultrasound Obstet Gynecol. 2011;37:116-26.
2. Kern-Goldberger A, Haeri S, Lindsley W, et al. Examining ultrasound diagnostic performance improvement with utilization of maternal-fetal medicine tele-interpretation. Am J Obstet Gynecol MFM. 2021;3:100389.
3. Berner ES, Graber ML. Overconfidence as a cause of diagnostic error in medicine. Am J Med. 2008;121:S2-23.
4. Cohen L, Manion L, Morrison K. Surveys, longitudinal, cross-sectional and trend studies. In: Research Methods in Education. 8th ed. London: Routledge; 2017.
5. Li X, Wu Q. VP44.04: Factors that affect first trimester ultrasound screening for detecting fetal structural anomalies in twin pregnancies. Ultrasound Obstet Gynecol. 2020;56:251.
6. Ghi T, Sotiriadis A, Calda P, et al. ISUOG practice guidelines: invasive procedures for prenatal diagnosis. Ultrasound Obstet Gynecol. 2016;48:256-68.
7. Kearin M, Pollard K, Garbett I. Accuracy of sonographic fetal gender determination: predictions made by sonographers during routine obstetric ultrasound scans. Australas J Ultrasound Med. 2014;17:125-30.
8. Miceli F. A review of the diagnostic accuracy of fetal cardiac anomalies. Australas J Ultrasound Med. 2015;18:3-9.
9. Dude A, Davis B, Delaney K, et al. Identifying fetal growth disorders using ultrasound in obese nulliparous women. J Matern Fetal Neonatal Med. 2019;34:1956-61.
10. Suwaidi H, Abdelhalem R, Agten A. The fetal anomaly screening scan: an international perspective. Obstet Gynaecol Reprod Med. 2024;34:201-8.
11. Buijtendijk MF, Bet BB, Leeflang MM, et al. Diagnostic accuracy of ultrasound screening for fetal structural abnormalities during the first and second trimester of pregnancy in low-risk and unselected populations. Cochrane Database Syst Rev. 2024;5:CD014715.
12. Qi Y, Cai J, Lu J, et al. Multi-center study on deep learning-assisted detection and classification of fetal central nervous system anomalies using ultrasound imaging. arXiv. 2025.
13. Dewi A, Kartasurya M, Purnami C. Challenges and opportunities of ultrasound in pregnancy at primary care in low-middle income countries. Journal Kebidanan. 2025;14:1-7.
14. Meservy D, Monson M. Impact of continuing education on nursing practice and quality of patient care. J Contin Educ Nurs. 1987;18:214-20.
15. Nakić Radoš S, Košec V, Gall V. The psychological effects of prenatal diagnostic procedures: maternal anxiety before and after invasive and noninvasive procedures. Prenat Diagn. 2013;33:1194-200.
16. Brady AP. Error and discrepancy in radiology: inevitable or avoidable? Insights Imaging. 2016;8:171-82.
17. Combs CA, Amara S, Kline C, et al. Quantitative approach to quality review of prenatal ultrasound examinations: fetal biometry. J Clin Med. 2024;13:4860.