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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии  
საქართველოს სამედიცინო სიახლენი

## GEORGIAN MEDICAL NEWS

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

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

**GMN: Медицинские новости Грузии** - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНТИ 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 ВИНТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

### WEBSITE

[www.geomednews.com](http://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](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. Корректур авторам не высылаются, 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 computer-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.nlm.nih.gov/bsd/uniform_requirements.html)  
[http://www.icmje.org/urm\\_full.pdf](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 საქურაღებოლ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დაიცვათ 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 შედეგის 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 ფხიხლებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

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

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

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

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

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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## EVALUATION OF SEXUAL FUNCTION IN TRANSGENDER AND GENDER DIVERSE INDIVIDUALS; A CALL FOR ACTION

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### Abstract.

Sexual function is a key factor impacting all individuals' wellbeing, including the transgender and gender diverse (TGGD) population. Lack of validated sexual function evaluation tools for this community contributes to gaps in medical knowledge, barriers to proper assessment, interventions, and an understanding of sexual function expectations pre and post gender-affirming surgery (GAS). Current studies indicate beneficial individualized treatments for management of sexual dysfunction in TGGD individuals, while demonstrating the importance of applicable and validated sexual function assessments. In the evaluation of sexual function for these patients, it is essential to consider the social, mental, and physical components experienced by this community as well as all variations of sexual practices and preferences. Currently, due to the general lack of an index of assessment, providers and/or researchers are left to adapt one of the validated cisgender tools or create non-validated evaluation tools when assessing TGGD patients. Through the creation of unique validated sexual function tools, providers will be able to improve affirming patient care, reduce stigma, and ensure accurate sexual function evaluation.

**Key words.** Sexual function, transgender, non-binary, gender diverse, questionnaire.

### Presentation.

Sound sexual function and satisfaction is a vital component of mental health and is positively correlated with an individual's quality of life [1,2]. Sexual function is a broad term involving emotional, mental, physical, and societal factors. Historically, sexual function and/or dysfunction has been evaluated using tools developed for cisgender individuals. Today, gender affirming providers serving transgender and gender diverse (TGGD) patients are identifying insufficiencies in the currently available validated sexual function assessment tools [3]. Gender dysphoria, desire, body image, self-esteem, ability to pursue partners, and domestic violence are just a few of the elements that need to be considered when evaluating sexual function in this population [4]. While some efforts have begun to fill this gap, such as Gender-Q which utilizes patient reported outcome measures of TGGD individuals who have undergone gender affirming care, there is currently no widely available index of assessment for this population [5]. Providers and/or researchers are left to adapt validated cisgender tools, such as the International Index of Erectile Function (IIEF) or the Female Sexual Function Index (FSFI), or create non-validated evaluation tools [6,7].

As the TGGD community continues to grow, more individuals than ever are making the decision to transition both socially and physically [8-10]. Physical transitions may include hormone therapy (HT) and/or gender affirming surgery (GAS). Gender

affirming surgeries encompass a spectrum of different operations such as facial feminization and masculinization, vocal cord surgery, breast augmentation, "top surgery" i.e., mastectomy, liposuction, and "bottom" surgery i.e., phalloplasty, metoidioplasty, and vaginoplasty. While many of these surgical options include physical alterations in organs that play roles in sexual function and satisfaction, they all impact the psychological aspects of sexual function as well as self-confidence, sexual expression, desire, and sexual practices.

As not previously designed nor validated for the TGGD population, the available assessment tools do not reflect all the components affecting these patients. The available evaluation tests do not include the parameters deemed sexually satisfying nor dissatisfying to the TGGD community either. They also fail to consider the complex interplay between various factors that may not be present in the cis-gender population. For example, individuals assigned male at birth who are undergoing hormonal treatment often report decreased sexual function, but also a decrease in sexual distress. In such cases, the cumulative effect that the treatment has on an individual's sexual experience may be positive [11]. To properly evaluate and measure sexual function, unique tools must be created and validated while taking these parameters into account and prioritize their importance based on the overall sexual wellbeing and experience of the patient.

When considering the components impacting this population and their sexual function, mental health professionals (MHP) and health care providers (HCP) must consider the increased risk factors this community faces, historical and present stigma, varying sexual practices, and the effects of physical (surgical and hormonal) transitioning.

Studies show that TGGD individuals are susceptible to an increased incidence of depression, anxiety, suicide, PTSD, sexual assault, and domestic violence [12]. These increased risks stem from overt discrimination, societal micro-aggressions, transphobia, abuse, and violence [13,14]. Exposure to these forms of trauma and coinciding mental health disorders can heavily impact sexual function. Patients experiencing depression are more likely to experience sexual dysfunction which may be further exacerbated by the adverse effects of antidepressant and antipsychotic treatments [15]. One of the major outcomes for the survivors of sexual assault is the occurrence of sexual dysfunction, including fear of sexual stimuli and intimacy, inability to orgasm, and an overall negative attitude towards sex. Sexual dysfunction affects individuals' ability to create and maintain intimate relationships which can further negatively impact wellbeing [16]. The vicious cycle of anxiety, depression, and sexual dysfunction may continue to propagate, becoming increasingly difficult to mitigate.



HCPs and MHPs must take into consideration the issue of medical stigma the TGGD community faces. From a historical standpoint, being TGGD was once considered a pathological diagnosis, “gender identity disorder”. This diagnosis contributed to discrimination and invalidation, furthering the distrust of medical providers by this community [17]. Lack of trust leads to a decreased pursuit of care and an inability to build patient rapport. Both issues contribute to poor health outcomes and the enhanced inequities experienced by this community [18]. In addition, these patients may not feel comfortable raising their sexual function concerns leading to otherwise treatable sexual dysfunction or a decrease in sexual dysfunction awareness. Conversely, TGGD individuals may not prioritize their sexual dysfunction amongst other stressors such as gender dysphoria or social stigmatization during visits with MHPs or HPCs. Other situations contributing to barriers of care include providers feeling unequipped to handle or discuss sexual dysfunction with their patients or clients [19].

Although sexual orientation and gender identity are separate qualifiers, many times gender diversity is societally misunderstood as being associated with certain sexualities or sexual practices [20]. For example, transgender men are frequently assumed to be sexually attracted exclusively to women [21]. Literature highlighting this assumption overlooks variation in this population creating negative implications. Assessment of sexual function must consider all varying sexualities that do not fit the binary understanding of female-male intercourse or attraction. Another consideration is the fluctuation of sexuality over time, especially in those who have chosen to transition (socially, hormonally, or surgically) [22]. For example, a transgender man may begin his transition identify as being attracted to women, but over time experience a change in sexuality, such as homosexual (individuals who are attracted to those of the same sex), bisexual, or pansexual. This fluidity has the potential to continue to change across any individual’s life span, therefore making cross-sectional measurements potentially inaccurate at a later time point. Similarly, a binary understanding of sexuality and sexual satisfaction may not encompass practices or reflect personal beliefs [23]. As an example, a transgender woman may have the goal of having only partial or non-receptive penetration. This highlights the necessity of individualized considerations in the circumstances of surgery and postoperative sexual satisfaction assessment.

Physical transitioning, including HT and GAS, has an extensive impact on sexual function. This impact may be positive or negative depending on hormonal modulation, type of surgery, recovery time, presence of procedural complications, or patient expectations. HT is important for treating gender dysphoria and is found to lower stress in TGGD patients. The concept and protocols for TGGD HT is derived from hormone replacement therapy for hypogonadism in cisgender men and women. In addition, the hormonal dosing levels may be much higher based on the amount of masculinity or femininity the patient is pursuing [24]. As HT is unable to completely mimic the circadian release of hormones, as is seen in cisgender individuals, there may be artificial peaks and valleys of serum

hormone levels. Studies have shown decreased sexual function and desire in transgender women who are receiving HT [25]. It is therefore important to assess hormone management with regard to sexual function or dysfunction. In the case of GAS, there is the possibility of iatrogenic changes and complications including scar formation and loss of sensation, either erotic, tactile or both, along with loss of function. These factors could potentially impact the sexual stimuli perception and/or sexual function. For example, patients undergoing vaginoplasty are at risk for loss of vaginal depth, narrowing, granulation tissue and scar formation, loss of sensory nerves or local glandular tissues. Complications such as these lead to an increased occurrence of post-operative pain, regret, lack of satisfaction, and the need for revision surgeries [26]. Even with optimal surgical results, the neovagina lacks the capability for arousal phase lubrication, the hygienic autoregulation of the cis-vagina, and requires lifelong douching and dilatation. Moreover, when depilation of the donor skin is not complete, some individuals may experience hair growth inside their neovagina following penile inversion vaginoplasty. In terms of expectations there may be a variety of preferences requested by TGGD patients. For instance, a patient undergoing phalloplasty may opt to not have erectile function. Rather they may prefer to have the ability to urinate while standing or request a variety of aesthetic appearances (appearance of flaccid penis plus glansplasty, scrotoplasty and possible insertion of testicular implants).

It is also important to recognize that TGGD individuals are not the only group that experience unique barriers when it comes to sexual satisfaction. One example of such a community are veterans who have experienced sexual trauma in the military. A study has found that these individuals report lower levels of sexual satisfaction and may benefit from unique and targeted assessments and treatments [27]. The development of more inclusive sexual function and wellbeing assessment tools has the potential to not only benefit the TGGD community, but also those whose needs are not currently being met by the current assessments.

In conclusion, sexual function is a complex multifactorial concept as well as a key component of wellbeing. Its evaluation requires sophisticated tests evaluating emotional, mental, physical, and societal factors. Historically, sexual dysfunction in TGGD patients has been evaluated using tools developed for the cis gender population. We currently lack an assessment tool for evaluation of sexual function in the TGGD community.

To properly assess sexual function in this population, providers must acknowledge the factors impacting each patient and recognize the binary restrictions current tools contain. Gender dysphoria, sexual desire, body image, self-esteem, anxiety, depression, ability to pursue partners, and domestic/sexual violence are some of the key considerations that need to be assessed when evaluating TGGD sexual function. The development of new sexual function assessment tools for TGGD individuals will promote positive patient outcomes, improve provider awareness, and enhance rapport with HCPs and MHPs.

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