

GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 10 (343) Октябрь 2023

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 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 ბაზებშიდან.

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. 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.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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ASSESSMENT OF THE QUALITY OF LIFE AND PREVALENCE OF POSSIBLE OSTEOPOROTIC CHANGES IN POSTMENOPAUSAL WOMEN IN YEREVAN BASED ON DATA OF THE ECOS-16 QUESTIONNAIRE

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Abstract.

Aim: The aim of the study was to conduct approximate assessment of the prevalence of osteoporotic changes and evaluate quality of life (QoL) in postmenopausal women using ECOS-16 questionnaire in Yerevan city.

Methodology: The cross-sectional survey was conducted for data collection among 196 postmenopausal women. The research material about QoL was collected using ECOS-16 questionnaire. The sample was randomly selected through a two-stage cluster sampling from the population of women served by five polyclinics of Yerevan.

Results: The majority of surveyed women (70.3%) were in age group under 60. Slightly more than half of the study participants (57.7%) had higher education and worked (59.2%). Almost two thirds of respondents were married (65.3%). Half of the respondents (51.0%) noted their income at the subsistence level.

71.9%±3.21 of women reported back pain for a long time. The scores of all the scales of ECOS-16, as well the total score were significantly higher in women who reported chronic back pain, indicating a lower quality of life for them.

Women in age group under 60 years old, as well as women indicating absence of risk factors at workplaces, had significantly higher quality of life. A statistically significant difference was also observed between groups of women based on such social and demographic characteristics, as marital status, and average monthly income level. Pairwise comparison of groups based on these characteristics revealed a higher quality of life among married women compared to widows ($p=0.043$) and among women with income higher and at the subsistence level compared to the group of women with income below the subsistence level ($p=0.010$).

Poor QoL was associated with low self-reported health status and presence of chronic diseases in women. Pairwise post-hoc analysis showed lower level of QoL in the study participants with a below average/low level of health compared to both, those with above average ($p<0.001$) and average ($p<0.001$) level of health. QoL was also lower in women with four or more chronic diseases compared to both, women without chronic diseases ($p=0.001$) and the group of women with 1-3 diseases ($p=0.001$).

Conclusion: The prevalence of chronic back pain, which was considered as one of the manifestations of undiagnosed osteoporosis in postmenopausal women, was quite high. The scores calculated for all dimensions of ECOS-16 questionnaire, as well the total score indicated lower quality of life among women reported chronic back pain compared to those who did not have such a health problem. Age older 60, spouse's demise, income below the subsistence level, smoking, presence of risk factors at workplace, as well as poor self-reported health status,

and presence of chronic diseases were the factors negatively affected the QoL of surveyed women.

Key words. Postmenopausal women, chronic back pain, osteoporosis, quality of life, ECOS-16.

Introduction.

The methodology of studying the quality of life (QoL) has opened a fundamentally new stage in public health and medicine, for the first time offering a simple, informative, and reliable method for determining the key parameters that constitute the quintessence of human well-being. It also justified the need for the development of a new direction in interdisciplinary research based on the WHO definition of health [1,2]. Today, the methodology for studying QoL is one of the important components of clinical researches and clinical practice [3].

The issue of QoL in postmenstrual women is insufficiently studied and remains actual. One of the diseases that is common among postmenopausal women is osteoporosis, the presence of which, negatively affects the health-related quality of women life. One of the diseases that is common among postmenopausal women and negatively affects their health-related quality of life (QoL) is osteoporosis, which initially very often manifests as back pain and can later lead to fractures [4].

Assessing the health related QoL has emerged as a significant concern in both public health researches and clinical practice. Different specific questionnaires related to QoL of patients with osteoporosis are available in the literature.

According to the data from conducted studies, at the age of 50-60, one in three individuals suffers from osteoporosis. Postmenopausal osteoporosis accounts for 85% of all types of the disease. According to the prognosis, by the year 2050, the number of individuals with osteoporosis (both women and men) worldwide will reach 6 million, with three-quarters of these cases occurring in developing countries [5-7].

The development of osteoporosis occurs unnoticed. The condition is characterized by a slow, latent progression, and often, a decrease in bone mass may not manifest until a fracture occurs. Patients with minor fractures or those without any fractures may not realize they have such a problem. Fractures can lead to disability in women and deterioration in their QoL. According to literature data, vertebral body fractures occur in approximately 30-50% of patients with osteoporosis [8]. Unfortunately, in 70% of cases, these fractures remain undiagnosed. At the same time, for individuals with a history of vertebral fractures, the risk of subsequent osteoporotic fractures increases threefold, and the risk of vertebral fracture increases eleven-fold [9]. Vertebral body fractures occur in every fourth woman over the age of 50 and in every second woman over the age of 85 [10]. Despite the fact that vertebral body fractures are not always accompanied by severe pain, an increase in

the number of fractures leads to neurological disorders and a deterioration in the quality of life of women [11,12]. There were studies that showed that even in the absence of the fracture, osteoporosis affects the quality of life of the affected one [13-16].

In connection with this, we consider it possible to identify osteoporotic changes in women during postmenopausal period earlier through the assessment of their quality of life based on specific questionnaires. Early detection of these changes will allow for measures to be taken for effective management of the developing conditions.

Studies dedicated to the assessment of the prevalence of osteoporosis among Armenians have not been conducted. According to data from the Armenian Osteoporosis Association, there may be 150 000 women and 95 000 men aged 50 and older with osteoporosis in the Republic, and an additional 340 000 men and women have osteopenia [17].

The study conducted in the Ararat and Vayots Dzor provinces of Armenia in 2015 revealed that osteoporosis and associated low-energy fractures pose a significant healthcare issue in Armenia. According to the study, the incidence rate for proximal femur fractures in 2013 among women and men aged 50 and older was 201 and 136 cases per 100 000 population, respectively. This means that the ration of fractures in women to men was 1.5. Proximal humerus fractures occurred at a rate of 86 cases per 100 000 in women and 39 cases per 100 000 in men. The corresponding rates for distal forearm fractures in the same year were 176.4 and 56.1 per 100 000 population for women and men, respectively (the female-to-male ratio was 3.1) [18]. Overall, based on estimations, there are approximately 2000 proximal femur fractures, 1200 distal forearm fractures, and 640 proximal humerus fractures in Armenia each year among people aged 50 and older [19,20].

A significant healthcare issue in Armenia is the low level of population seeking medical attention for osteopenia and osteoporosis, resulting in delayed detection of the diseases. In addition to the population's low awareness of osteoporosis and its first symptoms and consequences, another reason for the low rate of healthcare-seeking behavior is that osteoporosis is not recognized as a priority healthcare problem at the state level in Armenia. Consequently, densitometry testing is not included in the state basic benefic package and must be paid for by patients themselves. The cost of the examination ranges from 10 to 30 euros, which is expensive for majority of Armenia citizens.

The aim of the present study was to evaluate the quality of life among postmenopausal women based on ECOS-16 questionnaire data, determine the approximate prevalence of osteoporotic changes among women in the Armenia population using data from the city of Yerevan, as well as compare the physical and mental aspects of QoL between groups of women with and without long-term back pain.

Materials and Methods.

The cross-sectional survey was conducted for data collection among 196 postmenopausal women. The research material was collected using ECOS-16 questionnaire from September 12, 2022, to October 14, 2022. The ECOS-16 questionnaire used because it is self-administered, short, simple, and easy to score. The sample was randomly selected through a two-stage

cluster sampling from the population of women served by five polyclinics of Yerevan.

The inclusion criteria were age 40-65 years old, being in post menopause, continuous residence in Yerevan for the past 5 years, and receiving health care from a single polyclinic. The exclusion criteria were presence in women the diagnosed herniated disc, osteoarthritis, rheumatoid arthritis, spondylolisthesis, spinal stenosis, ankylosing spondylitis.

The social and demographic characteristics of the surveyed group of women included information about their age, level of education, marital status, employment status, pension status, financial status, and lifestyle. To provide a detailed assessment of the quality of life among postmenopausal women and an approximate estimate of the prevalence of osteoporotic changes among them, a survey was conducted among 196 women using the ECOS-16 questionnaire.

The ECOS-16 questionnaire is a specific tool designed for assessing the quality of life in postmenopausal women with osteoporosis. It was developed based on two questionnaires:

the Osteoporosis Quality of Life Questionnaire (OQLQ) [21] and the Quality of Life Questionnaire of the European Foundation for Osteoporosis (QUALEFFO) [22]. It was initially developed in English and has since been translated into many languages with assessment of validity and reliability. The questionnaire is designed for self-administration, comprising 16 questions, with 4 of them taken from the QOLQ and the remaining 12 from the QUALEFFO-41 questionnaire. The sixteen questions are divided into four dimensions: pain (5 questions), physical functioning (5 questions), fear of illness (2 questions), and psychosocial functioning (4 questions). The nature of these four dimensions suggests their further grouping into two ECOS-16 scales: physical (pain and physical functioning) and mental (fear of illness and psychosocial functioning) scales. The scores of these two summary scales are combined to calculate an overall score for the questionnaire. Each question has five response options, ranging from 1 to 5, although the response options may vary between different scales. The questionnaire allows to assess the women's quality of life based on the total score, as well as based on each of the mentioned scales. The arithmetic mean is calculated for the total score that ranges from 1 (the best quality of life) to 5 (the worst quality of life).

The questionnaire was translated from English into Armenian and adapted taking into account linguistic and cultural specificities. The assessment showed high reliability and validity of the Armenian version.

Data entry and analysis were performed using SPSS-23 statistical software package. The results obtained from processing the sample data are presented in descriptive statistics indicators.

Because of normal distribution of values, the independent samples t-test was used for comparison of two means, and one-way ANOVA followed by Tukey's post hoc test for comparison of more than two groups. The null hypothesis was rejected at a significance level of $p < 0.05$.

Results.

The social and demographic characteristics of the study participants are presented in Table 1. As it shown in the table,

majority of women participates in survey (70.3%) were in age group under 60. Slightly more than half of the study participants (57.7%) had higher education and worked (59.2%). Almost two thirds of respondents were married (65.3%). Half of the respondents (51.0%) noted their income at the subsistence level.

Of the 196 postmenopausal women surveyed, 71.9%±3.21 reported back pain for a long time. A comparative analysis of the quality of life of women depending on the presence of back pain using the ECOS-16 questionnaire revealed a statistically significant difference in these groups both between the total scores of the questionnaire and between the scores calculated for separate domains (Table 2). The scores of all the scales, as well the total score were significantly higher in women who reported frequent back pain, indicating a lower quality of life for them.

Table 1. Social and demographic characteristics of the study participants.

Characteristics	n (%)
Age groups	
40-44	2 (1.0)
45-49	14 (7.1)
50-44	53 (27.0)
55-59	69 (35.2)
60-64	48 (24.6)
65-69	6 (3.1)
≥ 70	4 (2.0)
Educational level	
secondary	25 (12.8)
secondary special	55 (28.1)
higher	113 (57.7)
did not answer	3 (1.4)
Employment status	
employed	116 (59.2)
housewife/ did not employed	18 (9.2)
did not answer	62 (31.6)
Pension status	
did not retire	156 (79.6)
retired but continued to work	26 (13.3)
retired	12 (6.1)
did not answer	2 (1.10)
Work experience	
≤ 10 years	19 (9.7)
11-19	31 (15.8)
20-29	79 (40.3)
30-39	42 (21.4)
40-49	17 (8.7)
≥ 50 years	2 (1.0)
did not answer	6 (3.1)
Marital status	
married	128 (65.3)
divorced	25 (12.8)
widows	35 (17.9)
single	3 (1.5)
did not answer	5 (2.5)
Income	
below the subsistence level	34 (17.3)
at the subsistence level	100 (51.0)
above the subsistence level	54 (27.6)
did not answer	8 (4.1)

As shown in Table 3, women in the age group under 60 years old, as well as women indicating absence of risk factors at workplaces, had significantly higher quality of life. A statistically significant difference was also observed between groups of women based on such social and demographic characteristics, as marital status, and average monthly income level. Pairwise comparison of groups based on these characteristics revealed a higher quality of life among married women compared to widows ($p=0.043$) and among women with income with high and at the subsistence level compared to the group of women with income below the subsistence level ($p=0.010$).

Poor QoL was also associated with low self-reported health status and presence of chronic diseases in women. Pairwise post-hoc analysis showed lower level of QoL in the study participants with a below average level of health compared to both, those with above average ($p<0.001$) and average ($p<0.001$) level of health. QoL was also lower in women with four or more chronic diseases compared to both, women without chronic diseases ($p=0.001$) and the group of women with 1-3 diseases ($p=0.001$).

Discussion.

The results showed that postmenopausal women with back pain that could be a symptom of osteoporosis, experienced an overall lower quality of life than those without pain. ECOS-16 scores were higher in patients with back pain in all dimensions of ECOS-16. These findings join that reported by other authors [13,14,23,24].

Significant associations were found between QoL of postmenopausal women with back pain and such demographic variables, as age, marital and financial status. According to the results of the study older age of women with back pain has negative impact on QoL. The similar results were indicated in several researchers [14,25-27].

The association between smoking and risk of development of osteoporosis, which in its turn negatively affects QoL, was proven in different studies [28-30]. The results of our study indicated the presence of a significant association between smoking and the QoL in women who reported experiencing chronic back pain.

Chronic back pain that could be a symptom of undiagnosed osteoporosis in the study participants had negative impact on their health related QoL. Poor health related QoL resulted in poor subjective health status. These findings are consistent with the results of several studies [31-34].

As it has been shown in our study, from clinical risk factors presence and number of chronic diseases (comorbidities) negatively affected the QoL of surveyed women. An association between QoL of women with osteoporosis and presence of chronic diseases in them was shown in several studies, including a prospective large cohort study of men and women [34-37].

Limitations.

One of the limitations of this study is the limited sample size. The potential limitations of the study are also due to absence of information about certain variables that showed significant impact on QoL of postmenopausal women, and first of all presence of fractures in the past. Another limitation could have been the presence of undiagnosed conditions, which were listed

Table 2. Results of assessing the quality of life of postmenopausal women depending on the presence of frequent back pain according to the ECOS-16 questionnaire (n=196).

Dimensions	All the postmenopausal women (196)	Women reported back pain (138)	Women who did not report back pain (58)	t, p
Pain	2.31 (0.07)	2,74 (0,07)	1,21 (0,03)	t=14,074, p<0,001
Physical function	1.77 (0.06)	1,99 (0,07)	1,23 (0,04)	t=6,956, p<0,001
Disease-related fear	2.37 (0,09)	2,57(0,10)	1,84 (0,15)	t=3,893, p<0,001
Psychosocial status	2.20 (0,06)	2,36(0,07)	1,79 (0,08)	t=4,823, p<0,001
General physical component	2.04 (0,06)	2,36 (0,06)	1,22(0,03)	t=11,331, p<0,001
General psychological component	2.25 (0,06)	2,42 (0,07)	1,81 (0,08)	t=5,220, p<0,001
Total score of ECOS-16	2.11(0,05)	2,38 (0,05)	1,44(0,04)	t=10,481, p<0,001

Table 3. The influence of social and demographic characteristics and lifestyle on the quality of life of women reporting back pain based on ECOS-16 data.

	Mean (SE)	Statistics, p
Age groups		
<60	2.27 (0,06)	t =2.863, p=0.005
≥ 60	2.59 (0,10)	
Educational level		
secondary	2.66 (0.16)	F= 2.401, p=0.095
secondary special	2.36 (0.11)	
higher	2.31 (0.07)	
Marital Status		
married	2.26(0,07)	F= 4.224, p= 0.017
divorced/ single	2.58(0,11)	
widow	2.58 (0,13)	
Employment status		
employed	2.28 (0.07)	t= 0.685, p=0.495
housewife/ did not employed	2.43 (0.23)	
Income		
below the subsistence level	2.56 (0,09)	F=4,428, p=0,014
at the subsistence level	2.21 (0,07)	
above the subsistence level	2.37(0,12)	
Health status (self-reported)		
Above average	1.99 (0,11)	F=25,275, p<0,001
Average	2.24(0,06)	
Below average	2.92 (0,09)	
Presence of chronic diseases (comorbidities)		
Absence	2.04 (0,10)	F= 10,606, p<0,001
1-3	2.34 (0,06)	
≥ 4	2.88 (0,16)	
Smoking status		
Did not smoke	2.31(0,06)	F= 5,643, p=0,004
Smoked infrequently	2.84(0,16)	
Smoked constantly	2.35 (0,19)	
Alcohol consumption		
Did not consume	2.32(0,11)	F= 0,229, p=0,796
Consumed infrequently	2.38 (0,06)	
Consumed constantly	2.52 (0,56)	
Morning physical exercises		
Did not do exercises	2.39 (0,07)	F= 0,127, p=0,881
Did exercise irregularly	2.33 (0,10)	
Did exercises regularly	2.41(0,28)	
Engaging in sports		
Did not engaged in sports	2.35 (0,06)	F=0,586, p=0,558
Engaged in sports irregularly	2.51 (0,14)	
Engaged in sport regularly	2.34 (0,47)	
Presence of risk factors at workplace		
Were absent	2.26 (0,07)	t= 2.283, p=0.024
Were present	2.50 (0,09)	

t- t- statistics, F- ANOVA test statistics

as exclusion criteria. They could be another cause of reduced muscle strength and back pain for a long time, which lead to altered QoL.

Conclusion.

Thus, the prevalence of back pain for a long time among the surveyed women based on their self-assessment, was quite high (71.9%±3.21). The scores calculated for all dimensions of ECOS-16 questionnaire, as well the total score indicated lower quality of life among women reported frequent back pain, compared to those who did not such a health problem. Age older 60, smoking, presence of risk factors at workplace, as well as income below the subsistence level, lose of spouse, poor self-reported health status, and presence of chronic diseases were the factors negatively affected the quality of life of surveyed women.

Further research is needed to assess the prevalence of osteoporosis among postmenopausal women in the Republic of Armenia based on diagnostic data obtained through densitometry, as well as study to study the quality of life of women with diagnosed osteoporosis. The information obtained via application of ECOS-16 questionnaire could be a tool for healthcare providers in the comprehensive management of osteoporosis.

Competing interests.

The authors declare that they have no competing interests.

Ethics approval and consent to participate.

Ethical approval was given by the Tambov State University named after G.R. Derzhavin, ethical approval N 2/2023 from 16th September 2023.

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Абстракт

Цель данного исследования заключалась в приблизительной оценке уровня распространенности остеопоротических изменений и оценке качества жизни женщин в постменопаузе, проживающих в г.Ереван, на основе данных опросника ECOS-16.

Материал и методы. Поперечное исследование посредством опроса было проведено среди 196 женщин в постменопаузе. Данные о качестве жизни женщин собирались с помощью опросника ECOS-16. Выборка была отобрана случайным образом с использованием

двухэтапного кластерного отбора из числа женщин, обслуживаемых пятью поликлиниками г. Ереван.

Результаты. Большинство опрошенных женщин (70.3%) находились в возрастной группе до 60 лет. Немного больше половины участниц исследования (57.7%) имели высшее образование и работали (59.2%). Почти две трети опрошенных были замужем (65.3%). Половина респонденток (51.0%) указали доход на уровне прожиточного минимума.

71.9%±3.21 женщин сообщили о наличии хронической боли в спине. Оценки всех шкал опросника ECOS-16, также как и общая оценка были значительно выше у женщин, указавших наличие хронической боли в спине, что свидетельствует о более низком качестве их жизни по сравнению с женщинами, не отмечавшими боли.

Женщины в возрастной группе до 60 лет, а также те, которые не указывали наличие факторов риска на рабочем месте, имели существенно более высокое качество жизни. Выявлена также значимая разница между группами женщин по таким демографическим и социальным признакам, как семейное положение и уровень среднемесячного дохода. Парные сравнения групп по указанным характеристикам выявили более высокое качество жизни среди замужних женщин по сравнению с вдовами ($p=0.043$) и среди женщин с доходом выше и на уровне прожиточного минимума по сравнению с группой женщин с доходом ниже прожиточного минимума ($p=0.01$).

Низкое качество жизни было связано с низким самооценочным статусом здоровья и наличием и числом хронических заболеваний у женщин. Апостериорный тест проведенный для парного сравнения групп выявил более низкое качество жизни у участниц исследования с уровнем здоровья ниже среднего по сравнению с теми, кто отмечал отличное состояние здоровья ($p<0.001$), а также теми, у кого оно было на среднем уровне ($p=0.001$). Худшее качество жизни было также у женщин с 4 и более хроническими заболеваниями по сравнению как со здоровыми женщинами ($p=0.001$), так и с группой женщин, отмечавших 1-3 хронических заболеваний ($p=0.001$).

Заключение. Распространенность хронической боли в спине, которая рассматривалась как одно из проявлений не диагностированного у женщин в постменопаузе остеопороза, была достаточно высока. Баллы, рассчитанные для всех измерений опросника ECOS-16, а также общая оценка указывали на более низкое качество жизни у женщин с хронической болью в спине по сравнению с теми, кто ее не отмечал. Возраст старше 60 лет, вдовство, доход ниже прожиточного минимума, курение, наличие факторов риска на работе, а также низкая самооценка состояния здоровья и наличие, а также количество хронических заболеваний оказывали значимо негативное влияние на качество жизни участниц исследования.

Ключевые слова: женщины в постменопаузе, хроническая боль в спине, остеопороз, качество жизни, ECOS-16