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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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

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

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

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.

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ASSESSMENT OF QUALITY OF LIFE IN BREAST CANCER PATIENTS BY USING EORTC QLQ-C30 QUESTIONNAIRE IN EAST KAZAKHSTAN REGION

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Abstract.

Background: Breast cancer (BC) is the most common cancer and the leading cause of cancer-related death among women worldwide. It represents about 30% of all new cancer diagnoses in women.

Aim: The aim of this investigation to assess the quality of life in breast cancer patients by using EORTC QLQ-C30 questionnaires in the East Kazakhstan. **Materials and methods:** A total of 150 patients diagnosed with BC participated in this one-stage cross-sectional study. The QLQ-C30 questionnaire was presented as mean ± standard deviation, 95% CI. ANOVA test used to assess differences in EORTC QLQ-C30 questionnaire by age, education, occupation, and stage of disease.

Results: The average global health score was 46.1±35.6, indicating moderate well-being. Common issues included fatigue (37.6±31.7), pain (30.4±24.9), and insomnia (35.1±37.0). Rural residents reported better global health (64.1±14.3 vs. 42.3±37.5, p=0.004). Higher education was associated with improved cognitive (77.6±29.9 vs. 62.5±25.5, p<0.001) and emotional functioning. Retirees had the highest global health (73.9±24.9), physical (94.2±6.4), and cognitive scores (89.6±14.7, p=0.044). Cancer stage influenced functioning domains but not overall health (p=0.067). **Conclusion:** Quality of life in breast cancer survivors varies by age, residence, education, profession, and cancer stage, highlighting the need for personalized support.

Key words. Breast cancer, quality of life, EORTC, QLQ-C30, East Kazakhstan.

Introduction.

Breast cancer (BC) is the most frequently diagnosed cancer and the leading cause of cancer-related mortality among women worldwide. It accounts for approximately 30% of all newly diagnosed cancer cases in women, and it is estimated that one in eight women will develop BC during her lifetime [1]. Globally, BC is responsible for 14% of all cancer-related deaths among women [2], and it ranks first in the structure of malignant tumors in women both globally and in Kazakhstan. Each year, over 1.3 million new BC cases are diagnosed worldwide [3]. In Kazakhstan, four women die from BC every day, and it demonstrates the fastest growth rate among malignant neoplasms of the female reproductive system [4]. Breast malignancies account for 19% to 30% of all female cancers in various countries [5].

Beyond its impact on survival, BC contributes significantly to temporary and permanent disability, reduces life expectancy, and imposes a considerable socioeconomic burden [6]. Given its profound effects on women's physical and psychosocial health, assessing quality of life (QoL) among BC patients has become a key aspect of comprehensive cancer care [7]. QoL evaluation not only serves as an indicator of treatment effectiveness and rehabilitation outcomes but also helps inform the development of patient-centered supportive care strategies [8].

Among the tools developed to assess QoL in oncology, the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30) is one of the most widely validated and commonly used instruments in clinical and research settings [9]. Its electronic version (ePRO) has shown comparable psychometric properties [10].

The literature indicates that a wide range of factors can influence the QoL of BC patients, including depression, fertility concerns, sexual dysfunction [11], financial difficulties [12], and social stressors such as divorce or family separation [13]. Studies have also shown that patients with metastatic disease or multiple tumors tend to report significantly lower QoL [14,15].

Despite the global attention to QoL assessment in BC patients, data from Kazakhstan remain scarce. Therefore, this study aimed to assess the quality of life in breast cancer patients in East Kazakhstan using the EORTC QLQ-C30 questionnaire. Although the EORTC QLQ-BR23 is a valuable breast cancer–specific module, it was not included in the present study due to limited resources and our intention to focus on global indicators of QoL provided by the core questionnaire.

Materials and Methods.

This study was conducted to assess of quality of life in BC survivors by using QLQ-C30 questionnaire. This study was carried out between January and June, 2024, in East Kazakhstan region. A total of 150 patients diagnosed with BC participated in this one-stage cross-sectional study. A convenience sampling method was used to recruit participants. Eligible patients were consecutively enrolled from the outpatient oncology departments of two major regional facilities: the Center for Nuclear Medicine and Oncology of the Abai Region Health Department (Semey), and the Multidisciplinary Center for Oncology and Surgery (Ust-Kamenogorsk). These two centers provide outpatient care for oncology patients residing in the East Kazakhstan region. Recruitment was conducted during routine follow-up visits between January and June 2024 and continued until the target sample size was reached. This approach was selected due to the accessibility of breast cancer survivors during the study period.

Inclusion criteria were: voluntary consent to participate in the study, BC diagnose, age over 18 years, citizen of East Kazakhstan. Exclusion criteria: refusal to participate in the study, other diagnose of cancer, age under 18 years, participants with severe chronic illness or cognitive impairment, citizens of other region of Kazakhstan, individuals who have participated

in similar studies within the last six months.

All participants gave written informed consent after receiving comprehensive information about the study's purpose and the confidentiality of their personal data. Each participant's information was assigned a unique code. The link between the code and personal identifiers was kept in a separate file accessible only to the database custodian, while other users had access solely to the anonymized (coded) database. Prior to data collection, the study received approval from the Semey Medical University Ethics Committee (Protocol No.4 of December 20, 2021).

The sociodemographic form and the European Organization for Research and Treatment of Cancer quality of life questionnaire (EORTC QLQ-C30, version 3.0) were used for analysis [16,17]. Socio-demographic characteristics of respondents included age, residency, education, occupation, and stage of disease. EORTC QLQ-C30 is a widely used, validated instrument designed to assess the quality of life of cancer patients. It consists of 30 items that evaluate multiple dimensions of health-related quality of life, including five functional scales (physical, role, cognitive, emotional, and social functioning), three symptom scales (fatigue, pain, and nausea/vomiting), a global health status/ quality of life scale, and several single items assessing additional symptoms commonly reported by cancer patients (such as dyspnea, appetite loss, sleep disturbance, constipation, diarrhea) and financial difficulties. Responses are recorded using Likert-type scales, and all scores are linearly transformed to a 0–100 scale. Higher scores on functional scales and global health status indicate better functioning or quality of life, whereas higher scores on symptom scales reflect greater symptom burden. The QLQ-C30 is available in multiple languages and is extensively used in both clinical research and practice to monitor patient well-being and evaluate treatment outcomes [18]. The breast cancer-specific module EORTC QLQ-BR23 was not employed in this study due to resource limitations and the focus on core domains of health-related quality of life applicable to a broader oncological population. The questionnaire was translated to Kazakh language, and then back translated to English and compared with the initial version.... The questionnaire was validated through a pilot test with a group of 20 randomly selected participants who were interviewed to confirm the survey's reliability and appropriateness. Following the pilot test, minor adjustments were made, and the final re-vised version of the questionnaire was then used for the current study.

Statistical analysis.

Descriptive statistics were used to analyze the data. The choice of statistical criteria for data analysis depended on the type of variables analyzed. Socio demographic characteristics were presented in the form of frequencies and percentages. Pearson's chi-square was used for qualitative data. The QLQ-C30 questionnaire was presented as mean ± standard deviation, 95% CI, percent score <33.3, and percent score ≥66.7. Scores were calculated according to the EORTC QLQ-C30 assessment guidelines. ANOVA test used to assess differences in EORTC QLQ-C30 questionnaire by age, education, occupation, and stage of disease. t-test was used to assess differences between Residency. The analysis was performed at the 95% confidence interval using the Statistical Package for the Social Sciences (SPSS), version 20.0 (IBM Ireland Product Distribution Limited, Ireland) and a p value ≤0.05 was considered statistically significant.

Results and Discussion.

A total 150 patients with history of breast cancer took participation in this study 40.0% of was aged elder than 61-year-old, mostly they were from urban place (82.7%), had higher education (42.7%), worked as employees (58.7%) and had second stage of cancer (69.3%) (Table 1).

The mean score for global health status and quality of life was 46.1 ± 35.6, indicating a moderate level of overall well-being among breast cancer survivors. A total of 32.0% of participants scored below 33.3, suggesting significantly impaired quality of life, while 68.0% had scores above 66.7, indicating a higher level of well-being. The highest levels of functioning were observed in physical (75.9 ± 23.5), cognitive (77.1 ± 26.6), and social (77.1 ± 28.6) domains. Nearly all participants (>90%) scored above 66.7 in these categories, reflecting good physical, cognitive, and social abilities. Role functioning (72.0 ± 32.1) and emotional functioning (71.4 ± 25.3) were also relatively high; however, 13.3% and 10.7% of participants, respectively, experienced considerable difficulties (<33.3 scores) in these areas (Table 2).

Among symptoms, the most prominent issues were fatigue (37.6 ± 31.7), pain (30.4 ± 24.9), and insomnia (35.1 ± 37.0). Nearly half of the participants (46.7%–57.3%) reported significant problems in these areas (>66.7 scores). Substantial issues with appetite loss, constipation, and financial difficulties were observed in 40.0%–53.3% of participants, suggesting that these factors significantly impact their daily lives (Table 2).

Less severe symptoms included nausea and vomiting (14.2 ± 20.4) and diarrhea (8.0 ± 18.0), with 73.3% and 81.3% of participants, respectively, reporting minimal problems (<33.3 scores) in these domains. Overall, breast cancer survivors maintained relatively high levels of physical, cognitive, and social functioning. However, a significant proportion of patients experienced notable symptoms of fatigue, pain, insomnia, and financial difficulties, which could substantially affect their overall quality of life (Table 2).

Global health status and quality of life significantly declined with age (p=0.018). The highest mean score was observed in participants aged ≤50 years (54.9±33.2), while those >61 years reported the lowest (36.4±28.2). Emotional functioning also varied significantly across age groups (p=0.033), with participants aged 51-60 demonstrating lower scores (63.1±32.7) compared to younger and older groups. Social functioning was significantly lower in the 51-60 age group (p = 0.015), while other functional domains did not show significant differences (Table 3).

Participants from rural areas reported significantly better global health (64.1±14.3 vs. 42.3±37.5, p=0.004) and higher scores in physical (p=0.014), role (p < 0.001), emotional (p=0.012), and social functioning (p=0.001) compared to urban residents. Cognitive functioning did not show a significant difference

Table 1. *Distribution of the participants according to the sociodemographic and staging.*

Variable		**N (%)**
Age (yr)		
	≤50	48 (32.0)
	51-60	42 (28.0)
	>61	60 (40.0)
Residence		
	Urban	124 (82.7)
	Rural	26 (17.3)
Education		
	Higher	64 (42.7)
	Secondary	46 (30.7)
	Uncompleted secondary	40 (26.7)
Occupation		
	Employee	88 (58.7)
	Service sector	20 (13.3)
	Tradesperson	26 (17.3)
	Retired	16 (10.7)
Cancer staging		
	I	24 (16.0)
	II	104 (69.3)
	III- IV	22 (14.7)

Table 2. *Assessment of quality of life in breast cancer survivors by using QLQ-C30 questionnaire.*

Scales	**Mean±SD**	**95%CI**	**N (%) Scoring<33.3***	**N (%) Scoring>66.7***
Global health status/QoL	46.1±35.6	40.4-51.8	48 (32.0)	102 (68.0)
**Functional scales				
Physical functioning	75.9±23.5	72.1-79.7	6 (4.0)	144 (96.0)
Role functioning	72.0±32.1	66.8-77.2	20 (13.3)	130 (86.7)
Emotional functioning	71.4±25.3	67.4-75.5	16 (10.7)	134 (89.3)
Cognitive functioning	77.1±26.6	72.8-81.4	14 (9.3)	136 (90.7)
Social functioning	77.1±28.6	72.5-81.7	8 (5.3)	142 (94.7)
***Symptom scales				
Fatigue	37.6±31.7	32.5-42.7	70 (46.7)	80 (53.3)
Nausea and vomiting	14.2±20.4	10.9-17.5	110 (73.3)	40 (26.7)
Pain	30.4±24.9	26.4-34.5	70 (46.7)	80 (53.3)
Dyspnea	23.1±25.0	19.1-27.1	72 (48.0)	78 (52.0)
Insomnia	35.1±37.0	29.1-41.1	64 (42.7)	86 (57.3)
Appetite loss	22.2±32.5	17.0-27.5	90 (60.0)	60 (40.0)
Constipation	24.4±32.5	19.2-29.7	80 (53.3)	70 (46.7)
Diarrhea	8.0±18.0	5.1-10,9	122 (81.3)	28 (18.7)
Financial difficulties	30.2±33.7	24.8-35.7	70 (46.7)	80 (53.3)
*For functional scales, subjects scoring<33.3% have problems; those scoring>66.7% have good functioning. For symptom scales/symptoms, subjects scoring<33.3% have good functioning; those scoring>66.7% have problems. *Values equal to 33.3% were rounded down and included in the "<33.3%" group; values equal to 66.7% were rounded up and included in the ">66.7%" group to ensure complete categorical assignment.				
**For functional scales, higher scores indicate better functioning.				
***For symptom scales, higher scores indicate worse functioning				

(p=0.818). These results suggest a possible influence of lifestyle or social support in rural settings.

Education level was significantly associated with physical functioning (p=0.003), emotional functioning (p<0.001), and cognitive functioning (p<0.001). Participants with higher education had better cognitive functioning (77.6±29.9) compared to those with secondary (89.1±13.7) and incomplete secondary education (62.5±25.5). Those with secondary education had the highest emotional functioning scores (85.5 ±15.2), while those with incomplete secondary education had the lowest (61.7±24.7).

Global health status significantly varied by profession (p<0.001), with the lowest scores among tradespersons (23.7±32.3) and service sector workers (28.3±29.7), while retired individuals reported the highest (73.9 ± 24.9). Physical functioning was also significantly higher among retired individuals (94.2±6.4, p=0.001). Social functioning was significantly higher among retired participants (p=0.002).

Table 3. *Comparison of variables in global health and functional scales in QLQ-C30 (N=150).*

Variables	Global health / QoL Mean (SD)	Physical functioning Mean (SD)	Role functioning Mean (SD)	Emotional functioning Mean (SD)	Cognitive functioning Mean (SD)	Social functioning Mean (SD)
Age (yr)						
≤50	54.9 (33.2)	74.4 (22.7)	68.7 (32.4)	72.9 (20.5)	81.2 (15.6)	83.3 (22.8)
51-60	50.0 (44.2)	74.0 (27.1)	70.6 (30.7)	63.1 (32.7)	70.6 (34.1)	66.7 (29.4)
>61	36.4 (28.2)	78.4 (21.4)	75.5 (33.0)	76.1 (21.6)	78.3 (27.1)	79.4 (30.6)
P-value	0.018	0.559	0.524	0.033	0.151	0.015
Residence						
Urban	42.3 (37.5)	73.8 (22.5)	67.2 (32.8)	69.1 (25.9)	76.9 (25.9)	73.6 (29,8)
Rural	64.1 (14.3)	86.2 (25.8)	94.9 (13.9)	82.7 (18.7)	78.2 (15.5)	93.6 (12.5)
P-value	0.004	0.014	0.000	0.012	0.818	0.001
Education						
Higher	51.8 (37.8)	73.3 (22.4)	67.7 (31.4)	67.4 (27.4)	77.6 (29.9)	76.0 (28.5)
Secondary	47.5 (34.4)	85.2 (18.5)	75.4 (36.5)	85.5 (15.2)	89.1 (13.7)	83.3 (23.3)
Uncompleted secondary	35.4 (31.6)	69.3 (27.2)	75.0 (27.5)	61.7 (24.7)	62.5 (25.5)	71.7 (33.4)
P-value	0.069	0.003	0.371	0.000	0.000	0.156
Profession						
Employee	51.7 (34.2)	76.7 (22.9)	73.5 (29.5)	70.0 (26.2)	78.8 (27.3)	74.6 (28.7)
Service sector	28.3 (29.7)	66.7 (27.0)	65.0 (36.2)	66.7 (20.9)	66.7 (1.34)	85.0 (14.2)
Trades person	23.7 (32.3)	69.2 (23.5)	64.1 (42.1)	72.4 (30.6)	71.8 (35.5)	66,7 (37.1)
Retired	73.9 (24.9)	94.2 (6.4)	85.4 (13.4)	83.3 (8.6)	89.6 (14.7)	97.9 (5.7)
P-value	0.000	0.001	0.138	0.209	0.044	0.002
Cancer staging						
I	34.7 (33.5)	75.6 (7.5)	76.4 (42.0)	79.9 (17.5)	91.7 (11.0)	90.3 (12.9)
II	46.0 (38.8)	74.7 (25.2)	67.9 (31.3)	67.6 (27.8)	74.0 (29.3)	72.1 (31.3)
III- IV	59.1 (7.7)	81.8 (26,0)	86.4 (16.0)	80.3 (12.7)	75.7 (19.7)	86.4 (20.3)
P-value	0.067	0.440	0.037	0.020	0.012	0.005

Cognitive functioning also differed (p=0.044), with the highest scores in retired individuals (89.6±14.7).

Global health status did not significantly differ across cancer stages (p=0.067); however, role functioning (p=0.037), emotional functioning (p=0.020), cognitive functioning (p=0.012), and social functioning (p=0.005) were significantly affected. Patients with stage III-IV cancer had the highest global health status (59.1± 7.7), role functioning (86.4±16.0), and social functioning (86.4 ± 20.3), while patients with stage I cancer showed the highest cognitive functioning (91.7±11.0).

The quality of life (QoL) in long-term breast cancer survivors is strongly influenced by both socioeconomic status and the stage of disease progression. Social isolation and lower socioeconomic class are notably associated with poorer QoL. Another significant factor is the history of relapse; although QoL tends to gradually approach that of the general population over time, experiencing one or more relapses can seriously disrupt this improvement [19].

A breast cancer diagnosis is linked to long-term eating disturbances and reduced physical activity in women, with survivors showing twice the rate of eating issues compared to the general population. These findings highlight the importance of routinely assessing and addressing dysfunctional health behaviors in post treatment care through clinical evaluations and educational programs to improve survivors' quality of life [20].

In our study age, place of residence, education, profession, and cancer stage significantly influenced various aspects of global health and functional scales. Older individuals, urban residents, and those with lower education levels or in physically demanding jobs showed lower quality of life and functioning scores. Retired individuals reported the best overall scores, suggesting a potential protective effect of reduced workload and better social support.

Lavdaniti, M., et all found that breast cancer survivors generally experience a reduced quality of life. The lowest scores were observed in physical functioning, mental health, emotional well-being, and vitality. Several demographic and clinical factors - particularly age, menopausal status, and type of treatment - were found to significantly influence certain quality of life domains, specifically physical role, bodily pain, and vitality [21].

The study of Jackson, I. et all revealed racial and ethnic differences in HRQoL among breast cancer survivors, highlighting the need for age- and group-specific strategies to improve their quality of life [22].

The findings of the study indicate that a high prevalence of combined anxiety and depressive symptoms after breast cancer surgery is linked to poorer quality of life, underscoring the importance of pre-surgical mental health assessment [23]. The other study suggests that optimism helps patients better cope with disease. A general assessment of global QoL cannot replace

the more specific assessments of the functioning domains and symptoms [24].

The study revealed that income, hope, self-efficacy and social support are positive predictors, and cancer stage are negative predictors of quality of life [25]. In the study Leinert E. et all revealed only small or trivial differences in QoL in patients aged<65 years versus 65 to 70 years who were receiving adjuvant chemotherapy [26]. Other study showed that age and employment were found to be significant predictors for Global Health Status (GHS). The Quality of Life among breast cancer patients reflected by the GHS improves as age and employment increases [27].

In our investigation age was significantly associated with global health status and emotional functioning, with younger participants reporting better quality of life compared to older individuals. This decline in quality of life with aging is consistent with previous studies, which suggest that older breast cancer survivors may experience greater physical and psychological burdens due to comorbidities, reduced physiological resilience, and decreased social support. Interestingly, while emotional functioning was lowest in the 51–60 age group, participants aged >61 years reported better emotional well-being. This may be attributed to psychological adaptation over time, as older patients might develop coping strategies to manage their condition.

The study of Gangane, N. et all found that women with breast cancer in rural India had a moderate quality of life. Younger age, low education, and lack of a partner were linked to lower QOL, while casual/industrial employment, higher income, and strong self-efficacy were linked to better QOL [28].

A significant disparity was observed in our study between urban and rural residents, with rural participants reporting higher scores in global health status and most functional domains, except for cognitive functioning. This contradicts some prior research that suggests urban residents often have better access to healthcare services and psychological support. However, a possible explanation for this finding is the strong community and social support networks in rural areas, which may provide a sense of stability and well-being. Additionally, rural lifestyles may be less stressful and physically demanding, contributing to better overall health outcomes.

Improved health literacy and access to health information enhance quality of life in women with breast cancer by reducing depression and anxiety, which may mediate this positive effect [29]. Self-care measures significantly help improve the physical and mental well-being of breast cancer patients undergoing chemotherapy, contributing to better quality of life [30]. Education level played a critical role in physical, emotional, and cognitive functioning. Participants with higher education demonstrated better cognitive functioning, likely due to greater health literacy, problem-solving skills, and more effective engagement with healthcare resources. Interestingly, emotional functioning was highest among participants with secondary education, which may reflect lower psychological stress, reduced professional pressure, or greater integration in local social support networks. In the context of East Kazakhstan, individuals with higher education often occupy positions of greater responsibility and may face increased work-related and societal expectations, which can negatively affect emotional well-being. Meanwhile, those with secondary education may experience a more balanced lifestyle and stronger community ties, contributing to higher emotional resilience. This highlights the importance of considering both educational background and the sociocultural environment when interpreting quality of life outcomes.

Changes in quality of life and fatigue - particularly in cognitive functioning and mental fatigue - are significant predictors of return to work among women with breast cancer. The study findings highlight the need for multidisciplinary cancer care and support the development of a theoretical psychological framework for understanding the return-to-work process [31].

In our study profession was strongly associated with global health status, physical functioning, and social functioning. Retired individuals reported significantly higher scores across these domains, suggesting that cessation of professional duties may alleviate stress and improve quality of life. Conversely, those working in the service sector and trade professions had the lowest global health scores. This may be attributed to physically demanding work conditions, financial stress, and limited access to healthcare benefits. Employees in office-based jobs reported intermediate scores, indicating that job type and workload play a role in determining functional well-being among breast cancer survivors.

The study Howes, B. H et all defined that women who undergo total mastectomy and breast reconstruction for cancer achieve a quality-of-life outcome that is at least as good as that following breast-conserving surgery. Furthermore, breast conservation has been found to be associated with lower physical well-being (i.e., more pain and discomfort) in the chest area and poorer sexual well-being outcomes [32].

Radiation therapy applied to breast cancer patients did not affect comfort and quality of life, On the contrary, the quality of life of patients increased along with their comfort levels and that comfort levels decreased as the experienced symptoms increased [33]. Breast cancer stage or treatments did not have an impact on HRQOL of young long-term BC survivors. Fertility, sexuality and professional reintegration remained the main concerns for survivors. Specific interventions in these population should focus on these issues [34]

Our study showed that contrary to expectations, global health status did not significantly differ between cancer stages, though role, emotional, cognitive, and social functioning were notably affected. Patients with stage III-IV cancer surprisingly reported higher scores in some functional domains compared to those with stage I or II cancer. One possible explanation is that survivors in later stages receive more intensive medical support, including palliative care and psychological counselling, which may improve their perceived quality of life despite disease progression. Additionally, patients with advanced cancer may undergo psychological adaptation and develop a greater appreciation for life, leading to relatively higher emotional well-being.

This study has some limitations. First, the sample size is relatively small, which may limit the generalizability of

the findings. Second, factors such as treatment modalities, socioeconomic status, and psychological interventions were not analyzed in detail, which could provide further insights into quality-of-life determinants. Future research should focus on longitudinal studies to assess how quality of life evolves over time and how targeted interventions can improve functional well-being in breast cancer survivors.

Conclusion.

Overall, this study underscores the multifaceted nature of quality of life among breast cancer survivors, emphasizing the role of age, residence, education, profession, and cancer stage in shaping health outcomes. The findings highlight the importance of personalized rehabilitation strategies, particularly for older patients, urban residents, and individuals in physically demanding professions. Providing targeted psychological support and socioeconomic interventions could help improve the overall well-being of breast cancer survivors.

Conflicts of Interest.

The authors declare no conflicts of interest.

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ანოტაცია

შესავალი: ძუძუს კიბო (ძკ) ყველაზე გავრცელებული და კიბოთი გამოწვეული სიკვდილის მთავარი მიზეზია ქალებში მთელ მსოფლიოში. იგი წარმოადგენს ქალებში დიაგნოსტირებული ყველა ახალი კიბოს შემთხვევის დაახლოებით 30%-ს. კვლევის მიზანია ძუძუს კიბოთი დაავადებული პაციენტების ცხოვრების ხარისხის შეფასება EORTC QLQ-C30 კითხვარის მეშვეობით აღმოსავლეთ ყაზახეთში.

მასალები და მეთოდები: კვლევაში მონაწილეობა მიიღო 150 პაციენტმა ძუძუს კიბოს დიაგნოზით. გამოყენებული იქნა ერთეტაპიანი წარდაჭრილი კვლევის დიზაინი. QLQ-C30-ის მონაცემები წარმოდგენილია საშუალო მნიშვნელობით ± სტანდარტული გადახრა, 95% სარწმუნო ინტერვალით. ANOVA ტესტი გამოყენებულ იქნა ასაკის, განათლების, პროფესიისა და დაავადების სტადიის მიხედვით ფუნქციური მაჩვენებლების შესაფასებლად.

შედეგები: გლობალური ჯანმრთელობის საშუალო ქულა იყო 46.1±35.6, რაც საშუალო დონის კეთილდღეობას მიუთითებს. ყველაზე გავრცელებული პრობლემები იყო დაღლილობა (37.6±31.7), ტკივილი (30.4±24.9) და უძილობა (35.1±37.0). სოფლის მაცხოვრებლებს ჰქონდათ უკეთესი გლობალური ჯანმრთელობა (64.1±14.3 წინააღმდეგ 42.3±37.5, p=0.004). მაღალი განათლება ასოცირებული იყო გაუმჯობესებულ კოგნიტურ (77.6±29.9 წინააღმდეგ 62.5±25.5, p<0.001) და ემოციურ ფუნქციონირებასთან. პენსიონერებს ჰქონდათ ყველაზე მაღალი გლობალური ჯანმრთელობა (73.9±24.9), ფიზიკური (94.2±6.4) და კოგნიტური ქულები (89.6±14.7, p=0.044). დაავადების სტადიამ იმოქმედა ფუნქციურ მაჩვენებლებზე, მაგრამ არა საერთო ჯანმრთელობაზე (p=0.067).

დასკვნა: ძუძუს კიბოს მქონე პაციენტების ცხოვრების ხარისხი განსხვავდება ასაკის, საცხოვრებელი ადგილის, განათლების, პროფესიისა და დაავადების სტადიის მიხედვით, რაც საჭიროებს ინდივიდუალურ მხარდაჭერას.

საკვანძო სიტყვები: ძუძუს კიბო, ცხოვრების ხარისხი, EORTC, QLQ-C30, აღმოსავლეთ ყაზახეთი.

Аннотация

Введение: Рак молочной железы (РМЖ) является самым распространённым онкологическим заболеванием и ведущей причиной смертности от рака среди женщин во всём мире. Он составляет около 30% всех новых случаев рака у женщин. Цель данного исследования - оценить качество жизни пациенток с РМЖ с использованием опросника EORTC QLQ-C30 в Восточном Казахстане. **Материалы и методы**: Одномоментное поперечное исследование, в котором приняли участие 150 пациенток с диагнозом РМЖ. Данные по опроснику QLQ-C30 представлены как среднее значение, стандартное отклонение, 95%ДИ. Для оценки различий по возрасту, образованию, профессии и стадии заболевания использовался критерий ANOVA. **Результаты**: Средний показатель глобального здоровья составил 46.1±35.6, что свидетельствует о среднем уровне благополучия. Наиболее частые жалобы - утомляемость (37.6±31.7), боль (30.4±24.9) и бессонница (35.1±37.0). Жительницы сельской местности сообщили о более высоком уровне глобального здоровья (64.1±14.3 против 42.3±37.5, p=0.004). Более высокий уровень образования был связан с лучшими когнитивными (77.6±29.9 против 62.5±25.5, p<0.001) и эмоциональными функциями. Пенсионеры продемонстрировали наивысшие показатели глобального здоровья (73.9±24.9), физического (94.2±6.4) и когнитивного функционирования (89.6±14.7, p=0.044). Стадия рака оказывала влияние на функциональные домены, но не на общий уровень здоровья (p=0.067).

Выводы: Качество жизни у пациенток с РМЖ зависит от возраста, места проживания, уровня образования, профессии и стадии заболевания, что подчёркивает необходимость персонализированной поддержки.

Ключевые слова*:* рак молочной железы, качество жизни, EORTC, QLQ-C30, Восточный Казахстан.