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# THE QUALITY OF LIFE OF WOMEN WITH BREAST CANCER: A LITERATURE REVIEW

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## **АННОТАЦИЯ**

Relevance: Breast cancer (BC) is the most common type of cancer among women, with a steady increase in cases. In recent decades, more attention has been given to studying the quality of life of women with this diagnosis. Quality of life is assessed across four health aspects: physical, psychological, social, and sexual. Considering all these aspects is crucial when studying the quality of life of women with breast cancer. These assessments are important in modern medicine as they evaluate patient conditions before treatment and track changes during therapy.

The study aimed to examine scientific studies on the quality of physical life of women with breast cancer, considering psychological, social, and sexual health aspects to thoroughly understand the disease's impact on women's lives, which will help identify existing problems and needs.

Methods: An analytical review of sources from Scopus, PubMed, ScienceDirect, Web of Science, and eLibrary was conducted. Out of 185 analyzed sources, 46 were included in the review, comprising open full-text articles in English and Russian.

**Results:** Patients who had reconstructive surgery for BC reported a higher quality of life than those who had a radical mastectomy, with better physical and psychological health and less pain. However, all women experienced a general decrease in quality of life post-treatment, especially in emotional and sexual areas, due to psychological stress, body image changes, and altered sexual identity.

Conclusions: The study highlights the impact of different treatments on the quality of life of women with breast cancer, enabling measures to enhance their physical, psychological, social, and sexual health. This supports developing effective rehabilitation and support programs to improve their overall quality of life.

Keywords: woman, breast cancer (BC), quality of life, physical health, psychological health, social health, sexual health.

Introduction: Breast cancer (BC) is the leading oncological disease in women, and according to statistics, its prevalence is increasing every year [1] (Figure 1). In developed countries, this type of cancer occurs in at least one in ten women [2]. It is a serious and multifaceted disease that has a physical, emotional, and practical impact. According to the GLOBOCAN 2020 estimate, 2.3 million new cases are registered each year, and the mortality rate from BC is 7%. This type of cancer accounts for a quarter of all cancer cases and one-sixth of all cancer deaths. It is the leading cause of cancer in countries with both highly developed and transitional economies [3].

According to GLOBOCAN 2022 data, the incidence of breast cancer in Kazakhstan is 12.6% of new cases and occupies a leading position (Figure 2). The mortality rate from breast cancer is 10.9%, and the 5-year prevalence rate per 100,000 population is 17.9 [4].

In medicine, one of the important areas is the study of a patient's quality of life, that is, an assessment of how satisfied a person is with his life from a physical, social, psychological, and spiritual point of view. In other words, this is an assessment of the general well-being of a person in various aspects of his life based on their perception [5]. The World Health Organization (WHO) de-

fines quality of life as an individual relationship between the individual's position in society and his/her personal goals, opportunities, plans, and degree of distress [6]. Over the past decade, quality of life has become an important indicator of the treatment outcomes of cancer patients [7]. Breast cancer is a special disease because it can seriously impair the appearance of female patients, which directly or indirectly affects their quality of life, in addition to the fear of cancer, its recurrence, and possible death [8].

In oncology, the concept of quality of life is important due to the characteristics of the pathology itself and the radical nature of treatment methods (surgery, radiation, and chemotherapy) [6]. Treatment of breast cancer often begins with surgical intervention in the form of mastectomy (with or without reconstruction) or a conservative approach, including lumpectomy and oncoplastic procedures [9]. Various studies have assessed differences in quality of life depending on the method of breast cancer surgery [10].

The study used a diagnostic survey method with the use of standardized questionnaires to assess the quality of life in women treated for breast cancer, including the European Organization for Research and Treatment of Can-



cer (EORTC) questionnaires - Core-30 and Breast-23 module (QLQ-C30 and QLQ-BR23), the universal questionnaire

"SF-36 Health status survey » (MOS SF-36), as well as a specialized questionnaire Breast -Q.

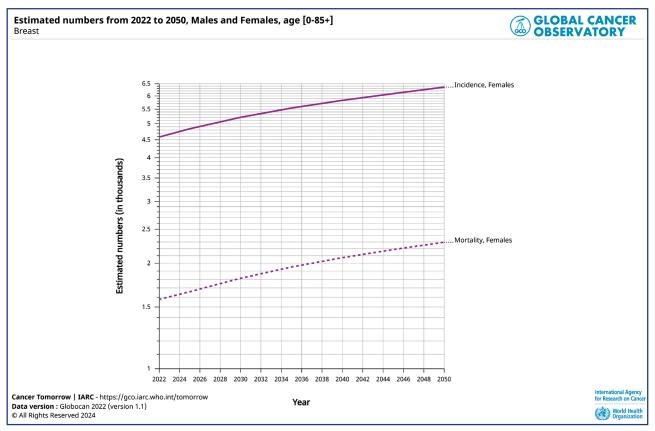


Figure 1 – Dynamic growth of breast cancer incidence and mortality in the world from 2022 to 2050, age (0-85+) [4]

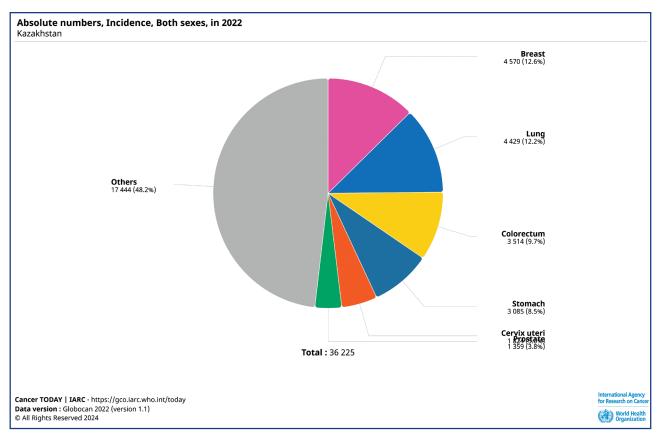


Figure 2 – Incidence of malignant neoplasms in Kazakhstan [4]



It is known that different surgical treatment options for breast cancer can have different effects on the quality of life of women who have undergone the operation [6]. Surgical intervention has not only physiological but also psychological and social consequences, as a woman can lose one of the main symbols of femininity – her breasts [11]. For many years, radical mastectomy was the only surgical method for treating breast cancer. However, this intervention is often accompanied by postmastectomy syndrome, which has an irreversible traumatic effect on the psychological state of a woman. Postoperative cosmetic defect forces a woman to change her lifestyle in order to hide the problem from others. This often leads to problems in her personal life, sexual dysfunction, emotional isolation, and the development of bad habits [12, 13]. This disease affects not only health but also affects the social and psychosexual aspects of patients' lives [14].

The study aimed to examine scientific studies on the quality of physical life of women with breast cancer, considering psychological, social, and sexual health aspects to thoroughly understand the disease's impact on women's lives, which will help identify existing problems and needs.

*Materials and methods:* A search of sources was conducted in open databases Scopus, PubMed, ScienceDirect, Web of Science, and eLibrary using the keywords: "woman," "breast cancer," "quality of life," "physical health," "psychological health," "social health," "sexual health." Full-text articles in English and Russian were included in the analysis. A total of 185 sources were selected, of which 46 were included in the analytical review.

### Results:

Physical health. Particular attention was paid to the physical factor since patients often reported pain and decreased range of motion in the arm on the side where the surgery was performed [15]. All groups of patients with stage I-II breast cancer, locally advanced forms of breast cancer in stages III and IV, as well as progression of the tumor process, demonstrated a decrease in the level of physical functioning caused by the traumatic consequences of surgery, such as pain, limitation of physical activity and range of motion of the upper limb, and the development of lymphedema [16-18]. According to the physical condition scale, which assesses negative physical consequences, the highest level of physical functioning was recorded in women with stage I-II breast cancer (80.46  $\pm$  2.64 points), while the lowest level was observed in patients with locally advanced forms of breast cancer (61.72  $\pm$  1.99 points). Interestingly, the level of physical functioning in patients with progressive tumor process was relatively higher (65.34±2.38 points). It is worth noting that patients with advanced disease also had higher levels of fatigue, nausea, and vomiting, which are associated with intoxication

and cancer cachexia. (56.4±2.38 and 17.83±2.38 points, respectively) [16, 1 7]. The development of lymphatic edema and upper limb dysfunction negatively impact the patient's daily activities. In particular, swelling of the hands makes it difficult for women to perform their usual household chores, as well as to select and wear clothes. In more severe cases, there may be a loss of the ability to self-care and the need for outside help even when performing basic tasks, such as zipping up a zipper [1, 19, 20].

Psychological health. The ability to perform role functions and psycho-emotional state is another important aspect that needs to be taken into account when measuring the quality of life of women with breast cancer [16]. The Psychosocial Status (PW) scale contains items covering body image feelings. At diagnosis, 45% of women had a severe level of state anxiety, while 15.2% had a severe level of personal anxiety. After treatment, only 18.9% had a severe level of state anxiety, indicating a statistically significant improvement (p<0.001). The same trend was observed for personal anxiety (p = 0.009) [21-23].

Cancer can be a hidden source of stress, affecting the psyche as an implicit factor that poses a threat to life and is reflected in emotional and cognitive aspects containing information about the disease. In women in remission, the level of role functioning associated with the emotional state is statistically higher compared to women with stage 4 breast cancer (p = 0.001) [24]. The majority of participants who underwent total mastectomy noted the presence of serious signs of depression (p = 0.04). More than 8% of participants also reported at least a moderate degree of anxiety. Among the participants who planned to undergo total mastectomy, pronounced symptoms of anxiety were often observed (p = 0.04). Fear of the spread of the cancer process, possible development of the tumor in other organs, as well as depression, sleep disorders, and limitations in everyday life, work, and professional opportunities significantly affect performance and psychological state. These factors often cause depression and other mental disorders in female patients [16]. Thus, anxiety and depression were observed in 20-30% of female patients [3]. Some studies have shown that increasing the level of education and knowledge of breast cancer patients who are in a serious condition before surgery can significantly reduce their anxiety levels before surgery [9].

A woman's psychological readiness for the outcome of the surgery is no less important than her preparation for the surgery itself. Postoperative shock is often observed after a mastectomy. Authors describe typical reactions of women after breast removal, such as sadness, apathy, fear, and despair [2, 25]. These manifestations can complicate the rehabilitation process and create additional stressful situations. Surgery itself does not guarantee a complete



recovery from cancer [2, 26]. The psychological reasons for this are associated with a sharp decrease in self-esteem, difficulties with social adaptation, changes in the perception of one's own body, and sometimes a temporary loss of one's own identity [2, 27]. Developed components of resilience in women with breast cancer have a positive effect on the assessment of their physical and mental state. The confidence of these women in their inherent value and the environment's safety can play a role in assessing their satisfaction with the quality of life. The indicator "risk acceptance" is also positively associated with parameters of quality of life such as role in society, emotional state (p = 0.020), life activity (p = 0.019), and mental health (p = 0.043). This means that women with breast cancer who have highly developed risk acceptance components feel more control over their mental state [28, 29]. The patient's mental state changes even more when complications arise that develop after radical treatment [1].

Psychoeducational support has a positive effect on breast cancer symptoms and the mental state of patients suffering from this disease [30]. Psychological support for patients with breast cancer should be available at all stages of treatment and rehabilitation and also continue after the completion of radical treatment. This is important for improving the quality of life of patients, which is becoming an increasingly important task, including aspects of cost-effectiveness [1, 31].

Sexual health. The need to study the quality of life of patients is because the breast is associated with sexuality and feminine nature in general, and as a result, this disease affects female identity and body image [32, 33]. Patients who have undergone radical surgical treatment may face the problem of low self-esteem, known as the "half-woman/body complex." They may feel insecure about their femininity and experience a low sense of selfworth in social terms. In addition, women who have undergone surgical treatment often experience depression [34, 35], and sexual dysfunctions often lead to dissatisfaction in intimate relationships [36]. The women included in the study were significantly concerned about their future (30.97±33.86, Me = 33.33). It should be emphasized that during the functional assessment, women rated sexual functioning as the lowest (17.49 $\pm$ 23.56, Me = 0.00). The average scores of sexual satisfaction of sexually active patients were 46.41±33.86 points on the sexual state scale (SW), Me = 33.33). The average value of the body image assessment scale of patients was (61.57±32.95, Me = 66.67). Sexual functioning, sexual satisfaction, and body image were rated higher by women who had undergone breast conservation surgery and lower by respondents who had undergone mastectomy. In the group of women who had undergone mastectomy, a decrease in libido was more often noted, which led to a decrease in their quality of life [ 11, 34, 37]. Higher levels of anxiety were observed among married or partnered women. This may also be due to a feeling of insecurity about their partners' acceptance of the disease, with the additional fear that their partners may break up with them because of the disease or leave them for another woman. Women who were married or had a partner had a 2.28 times higher risk of severe anxiety compared to single women, and those who took anxiolytics had a 2.13 times higher risk of severe anxiety [21].

Also, iatrogenic menopause (low libido, vaginal lubrication, dyspareunia, and loss of sensation in previously sensitive breasts) can significantly impair sexuality. Overall mean scores for both sexual quality of life and dyadic adjustment were significantly lower among women who had undergone mastectomy than in the control group (p<0.001). When analyzing educational level, women with secondary education and above demonstrated higher sexual quality of life scores than women with primary education or less (mean scores: 56.5±28.02 and 36.54±28.10) (p = 0.002). Concerning the women's income, those whose income was equal to or greater than their expenses demonstrated significantly higher scores on the quality of sexual life (mean scores:  $33.35\pm26.05$  and  $52.50\pm29.74$ ) (p = 0.003) and dyadic adaptation (mean scores: 88.90±30.55 and  $107.43\pm26.61$ ) (p = 0.004) [2, 38].

Although treatment often has profound and distressing effects on self-esteem and sexual function, these issues are rarely addressed by physicians. Often, this silence is due to the lack of readily available resources and uncertainty about appropriate rehabilitation strategies. Cultural barriers may also be a factor [37, 39].

Social health. As for the social aspect, all the support from family members and loved ones of these women is a driving factor in improving the quality of life [15, 40]. The social functioning of women after surgery worsens due to cosmetic defects, swelling after mastectomy, limited mobility of the limbs, chronic pain, as well as itching and burning in locally advanced processes. The absence of a mammary gland also affects patients' behavior. A decrease in the level of social functioning can lead to family problems, isolation, and a reduction in the social circle. Women with locally advanced forms of breast cancer had a higher level of social functioning (73.12  $\pm$  1.99 points), while in patients with a progressive tumor process, this indicator was the lowest (69.31  $\pm$  2.38 points). In patients with stage I-II breast cancer, the level of social functioning was average  $(70.86 \pm 2.64 \text{ points}) [16, 17].$ 

Education level also influences quality of life. It gives them access to information and more tools, resources, and strategies for coping with the disease [21].



Emotional support from families was a major factor in the quality of life of these women. The way families responded to the disease was very important. Women reported that they were looking for sympathy and pity; they wanted to be understood and treated as healthy people. The physical presence of the family was also very important: it helped the patients to perform daily activities and helped them cope with the cancer more easily. It was important to have their children nearby. Most patients reported that they received satisfactory support from their husbands, who accompanied them to appointments and helped them around the house [3, 18]. Women who had a conservative mastectomy had a better mean social relationship score (4.29) than women who had a radical mastectomy. Social relationships include social connections, social support, and sexual life [15]. However, sometimes, women might not receive very effective support [3]. Also, a person in a similar life situation can provide social support [41].

After treatment, a woman can consider social support as a coping resource that can improve their quality of life and ease the transition to life after treatment. Post hoc paired comparisons showed that women in the breast-conserving surgery group felt more social support than women in the mastectomy group (p<0.001). There were differences between surgical procedures in all subscale scores of the Multidimensional Scale of Perceived Social Support (MSPS) for the family/friends and significant others parameters in favor of breast-conserving surgery: MPS-family (p=0.016), MPS-friends (p<0.001), and MPS-significant other (p=0.003) [42]. Some women limit their contact with people, avoiding communication with friends and acquaintances. Their life is especially challenging in summer when it is difficult to hide the defect under clothing. This leads to social isolation. Many women are forced to give up activities they normally do, such as driving, playing sports, or gardening, which increases their social isolation and reduces or eliminates opportunities for communication and dialogue on various topics [1].

Breast cancer survivors are forced to make significant changes to their lifestyle and plans for the future, including the decision to return to work or regular activities. This can cause stress and long-term negative emotions [36]. Work can provide a distraction from the stress of surgery and help patients re-establish their social identity. Patients wanted to be identified by their careers rather than their illnesses. However, the financial impact of health care bills puts pressure on patients and their families. Some women have had time off or even lost their jobs, which adds to the burden [3, 39].

Social consequences of radical treatment of breast cancer include changes in the role of women in the family and possible disability [1].

Discussion: The obtained data show that reconstructive plastic surgery has a significant positive impact on the quality of life of women who survived breast cancer. This is confirmed by the increase in scores on all aspects of the questionnaires in women after reconstructive surgery compared to those who underwent radical mastectomy [1]. Women noted a worsening quality of life (the average score was 53.88 points out of 100), especially in the emotional (59.77) and sexual (17.49) spheres, and negatively assessed their bodies (61.57). Patients who underwent breast conservation surgery demonstrated better physical (p = 0.001) and sexual (p = 0.007) functioning and experienced less pain (p = 0.003) and shoulder discomfort (p = 0.024) compared to those who underwent radical mastectomy. Women who underwent breast reconstruction rated their quality of life higher (p = 0.003). Overall, patients who underwent breast conservation demonstrated higher quality of life in these domains compared to women who underwent mastectomy. Symptoms in patients after breast conservation were comparable to those who underwent mastectomy, except for pain, which was higher in the latter. Significant differences were noted in the subscales of the functional scales of the QLQ-BR23 questionnaire: body image (p = 0.003), sexual functioning (p = 0.007), and sexual satisfaction (p = 0.005), as well as in the subscale of shoulder-related symptoms (p = 0.024). Women who underwent mastectomy reported greater shoulder-related symptom severity compared to those who underwent breast-conserving surgery (mean 31.56 versus 26.56) [34].

Supportive educational activities should be provided at the family and community level through health systems to enhance psychological well-being, spiritual health, and access to social support resources so that women can cope with their disease, thereby improving their quality of life [43]. Involving their loved ones in preventive work is important to improve the patients' quality of life during and after treatment. Psychological work with patients and their relatives will help to better understand the nature of the disease, which will contribute to the dissemination of reliable information in society [44]. Therefore, healthcare providers are tasked with providing physical care, information, knowledge, and attention that support the individual woman's efforts to overcome difficulties [45].

In cancer research, quality of life assessment plays an important role in determining the success of treatment and in predicting the course of the disease. This assessment allows physicians to tailor symptomatic treatment to individual characteristics and provide valuable data on the prognosis of the disease [46].

**Conclusion:** This review confirms the importance of reconstructive surgery in improving the quality of life of women treated for breast cancer. The increase in scores on



all scales of the questionnaire after reconstructive surgery indicates a positive impact of these procedures on patients' physical, emotional, and social well-being. However, after radical mastectomy, there is a deterioration in the overall quality of life of women, especially in the areas of emotional and sexual well-being, as well as in self-esteem. It is worth noting that patients who underwent breast conservation surgery show better results in physical and sexual function and experience less pain and discomfort in the shoulder compared with women who underwent mastectomy. These results emphasize the importance of breast conservation and reconstructive methods during breast cancer treatment. In addition, the review shows that maintaining the previous lifestyle is an important aspect for patients after radical treatment of breast cancer. They face a variety of socio-psychological difficulties, such as fear of relapse, disruption of sexual relationships, and social isolation, which significantly affect their quality of life.

Comprehensive support, including medical treatment, psychological assistance, educational programs, and access to social resources, is required to improve the quality of life of women with breast cancer. Further research in this area will help to develop effective support and rehabilitation strategies for this group of patients.

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### **АНДАТПА**

# СҮТ БЕЗІ ҚАТЕРЛІ ІСІГІ БАР ӘЙЕЛДЕРДІҢ ӨМІР САПАСЫ: ӘДЕБИЕТКЕ ШОЛУ

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Өзектілігі. Қазір сүт безінің қатерлі ісігі (СБҚІ) әйелдер арасында ең көп таралған қатерлі ісік болып табылады және статистика аурушаңдықтың тұрақты өсуін көрсетеді. Соңғы онжылдықтарда осы диагноз анықталған әйелдердің өмір сүру сапасын зерттеуге көбірек көңіл бөлінді. Өмір сапасы денсаулықтың төрт негізгі аспектісі бойынша бағаланады: физикалық, психологиялық, әлеуметтік және сексуалды. Сүт безі қатерлі ісігі бар әйелдердің өмір сүру сапасын зерттеу кезінде осы аспектілердің барлығын ескеру өте маңызды. Қазіргі заманғы медицинада өмір сапасын бағалау әдістері кеңінен қолданылады, өйткені олар пациенттерді емдеуге дейінгі өмір сүру сапасын бағалауға және терапия процесінде оның өзгеруін бақылауға мүмкіндік береді.

Зерттеудің мақсаты — денсаулықтың физикалық, психологиялық, әлеуметтік және сексуалды аспектілерін ескере отырып, сүт безі қатерлі ісігі бар әйелдердің өмір сүру сапасын бағалауға арналған ғылыми зерттеулерді зерттеу. Осы зерттеу аурудың әйелдер денсаулығының аспектілеріне әсерін терең түсіну қажеттілігімен негізделген, ал бұл қазіргі проблемалар мен қажеттіліктерді анықтауға мүмкіндік береді.

**Әдістері.** Түйінді сөздер бойынша Scopus, PubMed, ScienceDirect, Web of Science, eLibrary ғылыми дерекқорларынан дереккөздерге аналитикалық шолу жүргізілді. Барлығы 185 дереккөз талданды, оның 46-сі шолуға енгізілген. Әдебиет шолуына енгізілген жарияланымдар ағылшын және орыс тілдеріндегі ашық толық мәтінді мақалалар болды.

**Нәтижелері.** Алынған нәтижелер СБҚІ кейін реконструктивті-пластикалық операциядан өткен пациенттердің радикалды мастэктомиядан өткендермен салыстырғанда өмір сүру сапасы жоғары екенін көрсетті. Бұл физикалық және психологиялық функцияның жақсаруымен, сондай-ақ ауырсынудың төмендеуімен расталады. Алайда барлық әйелдер СБҚІ-н емдегеннен кейін өмір сапасының жалпы төмендеуін сезінеді, әсіресе эмоционалды және сексуалды салаларда, бұл диагноз бен емдеуден туындаған күйзеліске, сондай-ақ дене бейнесінің өзгеруіне және сексуалды өзін-өзі анықтауға байланысты.

**Қорытынды.** Зерттеу нәтижелері әртүрлі емдеу әдістерінің СБҚІ бар әйелдердің өмір сапасына әсерін көрсетеді, бұл олардың физикалық, психологиялық, әлеуметтік және сексуалды денсаулығын жақсарту үшін негізделген шаралар қабылдауға мүмкіндік береді. Бұл СБҚІ бар әйелдердің жалпы өмір сүру сапасын арттыру үшін тиімді оңалту және қолдау бағдарламаларын әзірлеуге ықпал етеді.

**Түйінді сөздер:** әйел, сүт безі қатерлі ісігі, өмір сапасы, физикалық денсаулық, психологиялық денсаулық, әлеуметтік денсаулық, сексуалды денсаулық.

### **АННОТАЦИЯ**

# КАЧЕСТВО ЖИЗНИ ЖЕНЩИН С РАКОМ МОЛОЧНОЙ ЖЕЛЕЗЫ: ОБЗОР ЛИТЕРАТУРЫ

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Актуальность: Сейчас рак молочной железы (РМЖ) — самый распространенный вид рака среди женщин, и статистика показывает устойчивый рост числа случаев. В последние десятилетия уделяется повышенное внимание изучению качества жизни женщин с этим диагнозом. Качество жизни оценивается по четырем аспектам здоровья: физическому, психологическому, социальному и сексуальному. При изучении качества жизни женщин с РМЖ особенно важно учитывать все эти аспекты. Методы оценки качества жизни важны в современной медицине, так как позволяют оценить состояние пациенток до лечения и отслеживать его изменения в процессе терапии.

**Цель исследования** — изучить научные исследования по оценке качества жизни женщин с РМЖ, учитывая физические, психологические, социальные и сексуальные аспекты здоровья, для более глубокого понимания воздействия болезни на жизнь женщин и выявления существующих проблем и потребностей.

**Методы:** Был проведен поиск источников в базах данных Scopus, PubMed, ScienceDirect, Web of Science, eLibrary по ключевым словам исследования. В анализ были включены открытые полнотекстовые статьи на английском и русском языках. Всего было отобрано 185 источников, из которых 46 включены в обзор.

**Результаты:** Полученные результаты показали, что пациентки, перенесшие реконструктивно-пластическую операцию при РМЖ, имеют более высокое качество жизни по сравнению с теми, кто перенес радикальную мастэктомию. Это выражается в улучшении физического и психологического здоровья, а также в снижении болевых ощущений. Однако у всех женщин после лечения



РМЖ наблюдается общее снижение качества жизни, особенно в эмоциональной и сексуальной сферах, что связано с психологическим стрессом, вызванным диагнозом и лечением, а также изменениями в образе тела и сексуальной самоидентификации.

Заключение: Результаты исследования позволяют получить четкую картину влияния различных методов лечения на качество жизни женщин с РМЖ, что определяет возможность проведения обоснованных организационно-методических мероприятий по улучшению физического, психологического, социального и сексуального здоровья пациенток. Это способствует разработке эффективных программ реабилитации и поддержки для повышения общего качества жизни женщин с РМЖ.

Ключевые слова: женщина, рак молочной железы (РМЖ), качество жизни, физическое здоровье, психологическое здоровье, оциальное здоровье, сексуальное здоровье.

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