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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.

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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.

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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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CARDIAC REHABILITATION: IMPROVING OUTCOMES FOR PATIENTS WITH HEART DISEASE

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Abstract.

To evaluate the extent to that blood pressure management objectives are fulfilled in patients with Diabetes Mellitus (DM) and hypertension (HT), as well as the impact of the Cardiac Rehabilitation plan on the patient's useful ability, mental health, and pathological risk factors. The Cardiac Rehabilitation (CR) participants' anthropometric measurements, medications, lipid profiles, and medical and social backgrounds were all the subjects of the 19-month data collection. The parameters of the topics' minute walk test and Patient Health Questionnaire (PHQ) were further investigated. The Calvary Public Hospital in Canberra's CR program sessions required participants to show up for at least 10 of the sessions to be qualified. Seventy-nine people took part in the research. Significant reductions in low-density lipoprotein (LDL) cholesterol levels in the blood of participants, as well as gains in a patient health questionnaire and 6 min walk test (6MWT) scores, were seen. Additionally, people increased drug management. Results showed considerable improvements in diastolic blood pressure, physical capacity, depression, and anxiety in DM patients. A cardiac rehabilitation program may lower cardiovascular disease risk factors while enhancing participants' physical and emotional well-being. Results shown the cardiac rehabilitation program lowers the risk factors linked with DM patients' cardiovascular and renal disease via increased physical fitness and decreased levels of anxiety and despair.

Key words. Cardiac rehabilitation (CR), Blood pressure (BP), Cardiovascular Disease (CVD), Heart failure (HF), patient health questionnaire (PHQ).

Introduction.

A systematic program that aims to assist people who have heart disease in improving their overall health and sense of well-being is known as cardiac rehabilitation. In order to assist patients in recovering after cardiac events such as heart attacks, heart surgeries, or other treatments connected to the heart, it requires a mix of physical activity, education, and support. This all-encompassing strategy attempts to improve cardiovascular function, lower the likelihood of developing new heart issues in the future, and raise the standard of living for those who already have heart disease [1]. In the continual endeavor to effectively treat and manage heart disease, cardiac rehabilitation (CR) has emerged as an important component of comprehensive therapy. CR is an all-encompassing program designed to promote the social, emotional, and physical health of persons who suffer

from heart disease. A methodical approach that incorporates supervised exercise, training, counseling, and behavioral modification is required in order to improve patient outcomes and overall cardiovascular health [2]. The primary goals of cardiac rehabilitation are to hasten the patient's recovery, reduce the severity of symptoms, and prevent further cardiac episodes. Patients take part in activities that are tailored to their specific needs and capabilities to the meticulously created training regimens. These exercises are designed to promote cardiovascular fitness [3], and they do so by enhancing overall endurance as well as the strength of the heart muscle. CR involves a variety of other components outside only active movement. Heart disease continues to be a major cause of death globally, demanding ongoing attempts to improve therapeutic methods and lessen its debilitating consequences. In this setting, CR has emerged as a preventative measure intended to lessen the burden of heart disease [4]. It includes a complex strategy with elements of scheduled exercise routines, instructional content, and psychological support. Together, these components address the patients' physical, psychological, and lifestyle-related difficulties in an effort to improve their wellbeing and lower their chance of experiencing further cardiac episodes. Prior studies have provided insightful data about the advantages of CR. The benefits of CR on several facets of cardiovascular health, including as better exercise capacity, decreased hospital readmissions, and improved quality of life, are well documented in research [5]. It's crucial to comprehend the state of CR programs now in light of the increasing heart disease crisis. It is critical to evaluate how often these applications are used, how easily accessible they are, as well as closely they adhere to best practices [6]. To educate healthcare professionals and policymakers about the program's effectiveness, it is also critical to examine the results attained by individuals that have taken part in CR.

The article [7] determined if prospective enhancements in satisfaction of life results after a 9-week HCTR treatment in HF patients transfer into improvements in clinical outcomes throughout prolonged 12- to 23-month follow-up, compared with standard therapy. The research [8] examined the French Society of Cardiology's CR and HF study groups, GroupeExerciceRéadaptation Sport Prévention (GERS) and GroupeInsuffisanceCardiaqueet Cardiomyopathies (GICC), respectively. They spoke about the barriers to better access to facilities and recommended boosting the programs' dissemination

and promoting long-term commitment to physical exercise. The research [9] determined to evaluate the clinical and financial benefits of exercise-based CR (exercise training alone or in conjunction with psychosocial or educational treatments) to the "no exercise" control group in terms of mortality, morbidity, and health-related quality of life (HRQOL) in Coronary Heart Disease (CHD) patients. The study [10] determined more randomized trials are included in that update Cochrane Review to corroborate the conclusions. In the short run, CR has little impact on mortality. Shortly, according to low- to moderate-quality studies, CR may reduce hospital admissions for all causes and those specifically related to HF. Clinically, CR may improve the quality of life regarding health, although the evidence is scant. The article [11] proposed the hardest tasks in cardiac rehabilitation. Worldwide, CR is rare despite expert advice. COVID-19 limits CR. Home-based and technologically based CR models are becoming increasingly popular in low- and middle-income countries with few CR facilities and scalable and cheap models required. In an aging culture with more cardiac patients with several chronic illnesses, multimorbidity must be addressed with innovative CR therapies.

The research [12] examined lowering overall mortality in the context of ongoing, evidence-based coronary artery disease (CAD) care; CROS II validates the efficacy of CR participation after American Chemical Society (ACS) and after Coronary Artery Bypass Grafting (CABG) in real clinical practice. The CROS strategy, which more clearly defines the prescribed CR intervention and incorporates controlled registry-based research, is a legitimate hybrid approach with obvious clinical decision-making benefits. Article [13] provided empirical proof that CR, including psychological treatments and non-exercise, improves HRQOL. These results should be properly understood because of the considerable domain heterogeneity. They study found no statistically significant results for any HRQOL outcome; however, does not necessarily imply that CR does not affect HRQOL. Future CR studies must include depression metrics for risk of bias and detailed outcome data. The study [14] combined data from the Pedro, Scopus, and PubMed databases to identify COVID-19 cardiovascular issues and suggested physiotherapy for those affected. Exercise training (ET), a crucial component of CR, is an effective physiotherapy intervention that can potentially enhance circulation, reverse endothelial dysfunction, and avert thromboembolic effects. In conclusion, owing to the variety of programs that can be built by mixing intensity, duration, and pace and changing the program depending on patient monitoring, post-COVID patients with varying degrees of cardiovascular impairment may benefit from exercise training.

The research [15] summarized the research supporting preventive medicines given before heart surgery and discussed how these programs could develop in the future. The article emphasizes the areas with the most support for bettering perioperative outcomes in cardiac surgery. A Medline search using the topic headings "cardiac surgical procedures," "rehabilitation," "adverse outcomes," and other related terms was conducted to find the pertinent material. The research [16] examined the most recent randomized controlled trials (RCTs) that concentrate on the lasting advantages of outpatient

vs. inpatient CR treatments; The research also compares and contrasts the benefits of choosing home-based cardiac. To enhance the long-term clinical outcomes of cardiac patients, rehabilitation should be used instead of center-based interventions. The paper [17] analyzed theoretical statements outlining the fundamental elements, effectiveness, assets limitations, data gaps, and research requirements of home-based cardiac rehabilitation (HBCR) delivery. In randomized studies, the clinical results at three to twelve months for center-based and HBCR were comparable. In significant categories such as older people, women, underrepresented minority groups, and other higher-risk and understudied communities, more research and demonstrations are needed in order to clarify, improve, and extend the data set. HBCR may lead to a rise in the proportion of eligible patients taking CR. However, HBCR may benefit a subpopulation of low- to moderate-risk, medically stable people who are eligible for CR but are unable to participate in center-based CR programs. The study [18] determined the psycho-physiological advantages of community-based CR and the current epidemiological information on survival benefits. A cardiac event requires long-term behavior adjustment. Lifestyle interventions like structured exercise must be mapped to patients' willingness and desire to participate in the intended conduct and their core principles and beliefs for patients to adopt them. The article [19] proposed the potential applications of mobile health (mHealth) for older people with cardiovascular disease, emphasizing mHealth-CR and the supporting data created in the field. The subject will also cover the evidence that is being produced in the area. The study [20] examined individuals with chronic HF with LV-EF40% who received the drug and device treatment suggested by the most recent guideline; EBCR was linked to an improvement in QOL and exercise capability. However, there was no discernible benefit in terms of hospitalization or death.

Methodology.

The investigation's ethical board and the Council on Clinical Research Integrity at CSU acknowledged the experiment.

In the first study, the National Death Index was used to determine mortality for National Health and Nutrition Examination Survey (NHANES-III) individuals with and without suspected Non-alcoholic fatty liver disease (NAFLD). Inexplicable ALT rise led to the suspicion of NAFLD. Individuals also compared the case series from the Cleveland Clinic and Olmsted County. In the three similar patient care facilities, the danger of lawsuit would always exist, and the risk management procedure would take longer than the performance improvement process. The necessity for developing recommendations for the treatment of cardiovascular risk in NAFLD patients is urgent and pressing. In order to compare survivals, direct age standardization and the proportional hazards model were used. Teaching hospitals are found at nearby universities. Patients with cardiac events, HF, atrial fibrillation, BP analysis, coronary artery bypass graft stents, and increased risk of CAD are accepted into the CR program. Patients with CR must remain steady out of 12 study participants who completed at least five CR sessions. CR patients get multidisciplinary therapy for six weeks. Risk factor education, cardiac anatomy and physiology, physical therapy

and relaxation, good nutrition, stress management, exercise, balanced living, and some group-based therapies are available. Regarding their roles in patient rehabilitation, GPs, and Health Support Australia also presented.

Therapy segments are led by cardiovascular nurses, physical therapists, social workers, pharmacists, nutritionists, physicians, and occupational therapists. The patient's major pathological risk variables were recorded. Staff and administrative support determined the timeline. Demographics and medical history were also gathered. Before and after the CR program, patients' blood levels of HDL, LDL, total cholesterol, and Trigs may have been examined, together with their height, weight, circumference, BP, heart rate, and medications.

Patient health survey: Table 1. PHQ-9 screens, diagnoses, monitors, and assesses depression. Participants completed the questionnaire prior to and following the CR programme to investigate whether pathology changes were associated by mental health change.

The 6-minute walk test was completed in a straight, flat 30 m hallway with two-color floor markers. A physician monitored a licensed physical therapist and intended the coldness between the figure of lap and the nearest meter using the 6MWT. Before and after the CR treatment, participants were instructed to take the 6MWT to gauge their functional capacity. More analyses were performed to assess the impact of the CR strategy on individuals with DM, the people diagnosed with the disease. This included gathering demographic data and information about size and thickness, BP, heart rate, PHQ-9, blood cholesterol level, and the 6-minute walk test (6MWT). At the end of the CR program,

these data were obtained. The participant assessment outcomes from the pro- and pre-CR programs used a contrast between-subjects t-test.

Results.

The research comprised 79 individuals aged 39 to 90 years, with a mean of 66.4 years, comprising 16 girls and 63 men. In Figures 1 to 4, the causes of hospital admission and subsequent enrollment in the CR initiative include described. Participants having a history of morbidity related to the main CR included those with several previous comorbidities. The majority (91%) of the CR program participants, for instance, Moreover, several of the PCI individuals had prior CR comorbidities, including angina, Myocardial Infarction (MI), CABG, HF, Atrial Fibrillation (AF), and Valvular heart disease (VHD) in Table 2.

Figure 5 demonstrates 79 participants had their weights taken. The pre-patient CR on average plan mass 85.3 kg, compared in the direction of normal weight after treatment: 82.9 kg. This showed that patients reduced their overall weight by 0.7 kg on average. $t = 0.528761, p > 0.05$, indicates this decline was insignificant. The median girth measurement for the pre-patient CR plan was 98.2 cm, whereas the intermediate girth measurement for the post-patient CR program was 97.8 cm. However, this distinction could have been more statistically noteworthy. The 6MWT, PHQ-9, blood cholesterol level, heart rate, and participant's BP were all recorded. Table 2 provides further information on these findings and shows substantial improvements in LDL cholesterol and clinical BP. Data on participant medication shows decreased total medication usage after the CR program.

Table 1. PHQ-9.

Enduring name	Data of visit			
	not at everything	Servel days	majority of the times	Almost daily
How frequently have the following issues disturbed you in the previous two weeks?				
Little enthusiasm for or enjoyment in accomplishing things	0	1	3	2
Having a bad, gloomy, or dismal attitude	0	2	1	2
Trouble falling aseelp, staying asleep, or sleeping too much	0	1	2	3
Feeling like a failure or letting your family down	0	1	2	3
difficulty focusing on tasks such as viewing radio or read the newspaper	0	1	2	3
Communicating or walking so slowly that others may have heard it. Alternatively, you might be so restless or fidgety that you've been moving about a lot more than normal.	0	1	2	3
Feelings that it would be preferable for you to harm yourself or die	0	1	2	3

Table 2. Pre- and post-CR averaged measurements.

Factors	The collection	P-value	Pre-CR	Post-CR	N
BP in systole	Clinical	P=<0.04	130.1	128	76
Diastolic blood pressure		P=<0.04	71.4	68.9	
6MWT		P=<0.02	478	524	78
Total cholesterol	pathology	P=>0.06	5	3.4	24
LDL		P=<0.07	2.57	2.08	
HDL		P=>0.06	1.09	1.15	
Triglyceride		P=>0.06	1.45	1.23	
PHQ-9 total	PHQ-9	P=<0.02	4.9	2.42	72
PHQ-9 anxiety& depression	PHQ-9	P=<0.02	5.3	3.5	23
PHQ-9 total		P=<0.02	4.9	2.42	72

Table 3. Comparison of DM patients' pre- and post-CR and 6MWT, BP, and PHQ-8 score.

Post (po and Pre(pr)CR program																	
gender	Pr weight	Pr girth	Po weight	PrBPsyst (M)	Po girth	Pr BP Diast	PO BP Sys	Pr HR	Po BP Diast	Pr Total Chol	Po HR	Pr 6MWT	Po Total Chol	Pr PHQ9	Pr 6MWT	Po PHQ9	Age
M	89	109	89	118	107	70	132	97	68	28	98	453	2.7	9	462	0	64
M	123.5	130	115.6	160	125	85	155	101	73	3.8	88	417		7	516	1	63
M	75.5	100	73	134	91	60	110	72	60	2.5	60	458	2.8	2	431	1	76
M	109.5	107	107.7	140	109.5	80	130	51	80	3.2	66	589		3	559	3	64
M	85.6	98.5	89.5	134	103	72	130	76	72	3.9	80	437	2.8	9	475	5	54
M	98.8	101.5	98.4	115	116	70	122	48	60	3.1	55	631	3.9	0	653	0	66
M	83.7	94	86.8	112	FF	65	132	63	74	2.3	73	440		6	495	6	73
F	84	103	83	151	103	76	119	59	61	57	59	394		3	464	1	78
F	67.8	93	68.2	145	93	80	134	77	70	4.2	63	471	4.7	2	428	3	63
F	84.6	105	84.1	130	105	70	132	62	60	6.5	104	415	7.5	5	442	2	72

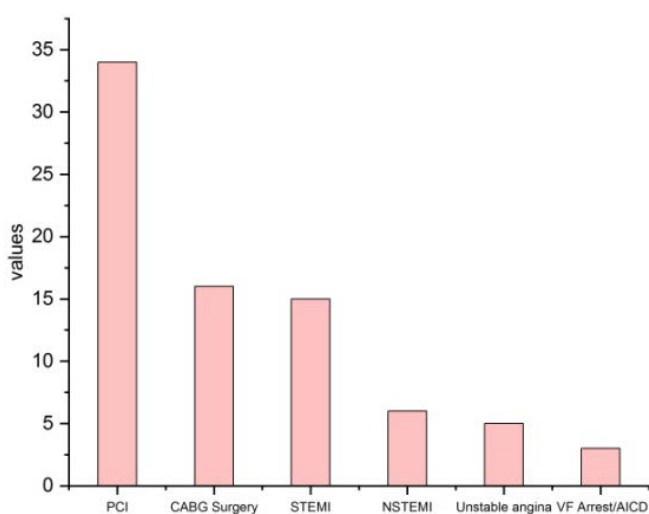


Figure 1. Medical history of the patient for the purpose of programmed enrollment.

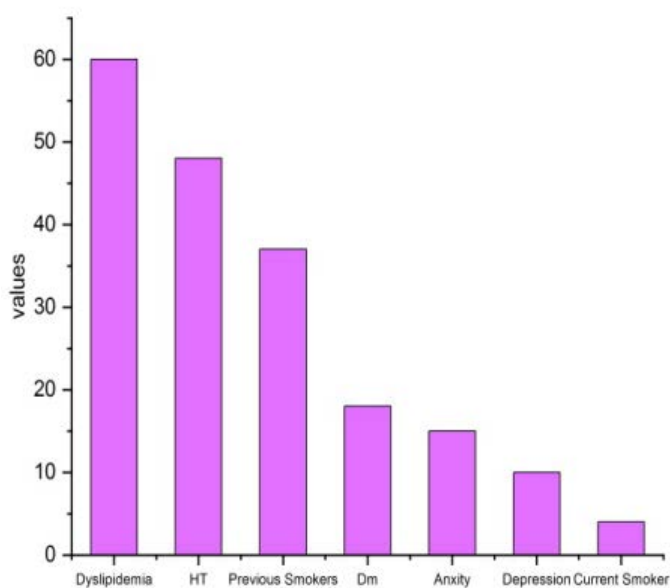


Figure 2. Medical history of the patient for hospital admission.

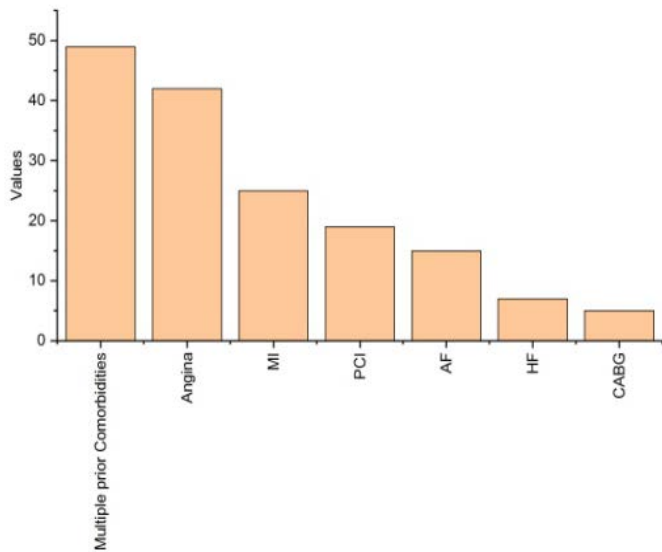


Figure 3. Medical history of patient's past diagnoses.

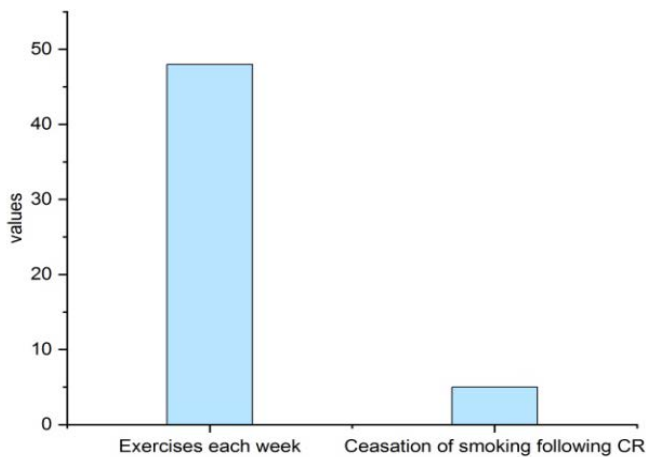


Figure 4. Medical history of patient's risk factors.

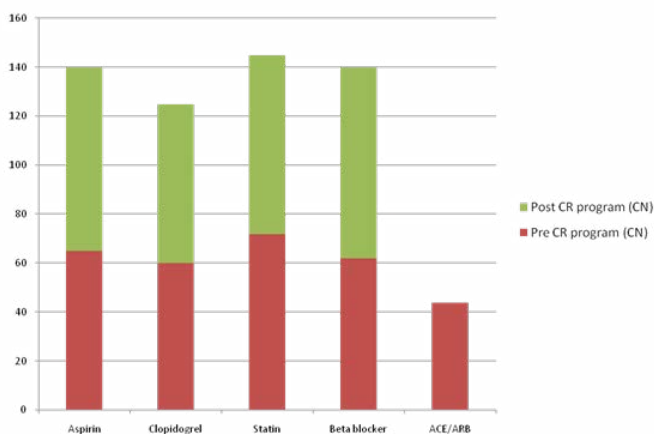


Figure 5. Medication modifications after the CR program.

Table 3 shows the outcomes for those who had a diagnosis of diabetes mellitus (DM) show that there were substantial advancements in the diastolic BP of DM patients from 73.0 to 67.9 before vs. post-CR program participation, the 6MWT from 478.4 to 512.6 and the PHQ-8 from 4.40 to 2.46.

Discussion.

Additionally, regardless of their ailment, the Australian Medicines Handbook (AMA) advises goal BP for individuals should be 140/90 mmHg. These findings were not repeated in the DM patients, whose BP dropped from 133.7/73.0 mmHg to 130.7/67.9 mmHg but remained over the recommended levels. The study's low inclusion rate for DM patients could have partly impacted this. Anyone who completed ten or more of the twelve lessons of the CR curriculum was considered a participant. Who discovered that the mortality risk for those who attended fewer than 49% of CR sessions was more than twice as high as the risk for people who attended more than 71.4%. They revealed that the 10-year mortality rate, which was decreased by almost 45%, was unaffected by age, sex, or the presence of diabetes mellitus. The greatest mortality prediction following myocardial action, they said, is CR. The PHQ-8 has a high degree of validity, according to studies including eight general care and seven obstetrical clinics it was in line with reductions in both individuals who had been diagnosed with anxiety or depression and those who did not. 6MWT_{pre} and post are CR anthropometric. These outcomes align with earlier research that advises CR and psychological wellness therapy. Such group counseling for stress might lessen the symptoms of depression. These findings encourage the continued involvement of mental health specialists and related CR measures.

According to this research, CR patients saw a considerable increase in physical fitness, which helped the patients by lowering their mortality risk. Less than 300 m into the 6MWT resulted in a 62% survival rate for those who have already had massive heart disease, whereas 300–450 m or more resulted in an 82% survival rate. 6MWT is simple along with safe treatment tool that accurately estimates morbidity and death in people with CVD, according to the present study's findings.

The findings show that patients can better regulate and customize how much Beta-blockers, aspirin, clopidogrel/prasugrel/ticagrelor, statin blockers, and ARB/ACE they take after participating in the CR program. This research may be the first to examine how a CR plan impacts participants' usage of medications. Prior research on medication usage decreases focused on weight loss as the primary factor. Exercise is a proven predictor of favorable outcomes for CVD, DM, and HT. Although losing weight is crucial, it shouldn't be the main physical fitness goal, according to some.

Other measurements, including BP, cholesterol, heart rate, and the 6-minute walk test, are believed to be better indications. Muscle growth, often due to exercise, is not considered by weight when employed alone; body fat percentage is another possible indication.

The weight and girth did not very much, according to this research. However, while statistically insignificant, post-CR total cholesterol levels in individuals taking part in the CR program were decreased, whereas LDL reached statistical significance. Weight dropped from an average of 84.3 to 84.9 kg, although this was not significantly different. This could be brought on by improving a rise in both muscular mass falls and body fat %.

In particular, in previous studies, fitness has been proven to be more essential than weight to improve overall health and lower

continuing heart disease danger and mortality in general. This is particularly true for those with diabetes. Thus, further research is a metric that incorporates measurements of weight, height, and body fat % is required because of a decrease. The amount of LDL cholesterol fell from 2.56 to 2.09 mmol/L as a result of a rise in HDL fat from 0.17 to 1.24 mmol/L and a reduction overall fat from 3.6 to 4.0 mmol/L. A further reduction in cholesterol was seen, going from 1.36 to 1.24 mmol/L.

Triglyceride and lipids level indicate decreased risks for atherosclerosis, heart attacks, and strokes. The fact that these outcomes fit the RCPA's clinical standards and demonstrate positive increases suggests that the CR program helped participants follow treatment advice.

Conclusion.

The findings of this study support the following claims: The CR program lowers patient pathologic danger signs linked to CVD; The CR program improves participants' both mentally and physically health; - The CR programme lowers danger variables associated with disease pathology related to diabetes, which lowers kidney disease risk; - Hospital services, including the CR plan, contain optimistic impacts on BP control.

Prospect study must examine the pathophysiology of BP and hemoglobin A1C in a T2DM group receiving CR to determine whether it enhances. This learn is aware of its drawbacks, such as the inclusion of an one's own reporting survey and the reality that the study only examined one CR programme in one specific field, raising the possibility that participants would answer the PHQ-9 incorrectly or with which they considered to be the greatest answer.

Despite these drawbacks, it's critical to realize that complete models of CR provide enormous advantages for the healthcare industry. Effective therapies, like CR, found to lower CVD mortality, are still urgently needed given the expected rise in obesity, DM, HT, and CVD.

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