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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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GEORGIAN MEDICAL NEWS
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QUALITY OF LIFE AND DISEASE COPING STRATEGIES IN PATIENTS WITH ROSACEA

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Abstract.

Introduction: Rosacea is a chronic, inflammatory skin disorder that adversely affects patients' life quality. The aim of the study was to evaluate the quality of life (QoL) and to find the connection between QoL and coping strategies in the patients suffering from rosacea.

Design and methods: A total of 138 patients, aged from 22 to 80, took part in this research with the first-time confirmed diagnosis of rosacea. All patients completed the Dermatology Life Quality Index (DLQI) questionnaire in order to evaluate the patients' attitudes to the impact of rosacea on QoL and Coping Strategies Questionnaires (COPE).

Results: The study has determined that Average DLQI in the case of rosacea equals 14.09+3.18. Mean Rosacea-Specific DLQI is symptoms and feelings - 3.75+1.92, daily activities - 3.12+1.77; leisure - 2.52+1.81, work and/or school - 1.52+1.50, personal relationships - 2.42+1.90, treatment - 1.59+1.04. The usage of instrumental social support - 3.39 has the highest score factor in the COPE questionnaire.

Conclusions: Rosacea has a strong impact on human life. QoL in rosacea patients is connected to such factors as age, gender, employment status, self-esteem, and subtype of the disease. Correlation analysis shows the connection between the quality of life and coping strategy. Based on the recession analysis formula, the large and extremely large effect of DLQI can be calculated according to the existing risk consequently, the results obtained in our study may be a kind of starting point for the elaboration of complex support for patients with rosacea.

Key words. Rosacea, dermatology life quality index, coping strategies, QoL, coping strategies.

Introduction.

Rosacea is a common chronic inflammatory dermatosis characterized by the presence of facial flushing, erythema, papules, pustules, and telangiectasia, with or without ocular signs and symptoms [1]. Prevalence of rosacea ranges from <1% to 22% of the European population [2-3]. Namely, in 2002, the National Rosacea Expert Committee (NREC) defined four subtypes of rosacea based on morphological characteristics: Erythematotelangiectatic, Papulopustular, Phymatous rosacea, and Ocular rosacea [4]. The subtypes are not mutually exclusive, since patients can present with features of multiple subtypes, and the predominant features and areas of involvement can change over time [5-6].

In addition, rosacea has a considerable impact on the lives of patients; in the past, psychiatric illnesses and alcohol abuse were commonly associated with rosacea [7]. The red, pimply facial rash can cause embarrassment, low self-esteem, and anxiety and consequently may lead to feelings of depression [8]. Many studies have dealt with the association between dermatological diseases and psychological distress [9]. Patients with severe inflammatory papulopustular eruption or rhinophyma were more likely to report having been rejected by others. Since rosacea affects the face, it seriously influences patients' quality of life (QOL) and their mental health. Such patients reported remarkably high stigmatization, with a marked negative effect on QoL [8,10-12]. However, psychological factors, such as stress and anxiety, may even aggravate flushing in rosacea, leading to a vicious circle [7].

Assessing and understanding the relationship between comorbid physical and mental disorders with rosacea is important and necessary to provide integrated care and enhance the QoL for rosacea patients [13].

In addition to the above mentioned, emotional stress ranks high on the list of triggers for many rosacea sufferers. Based on the National Rosacea Society (NRS) survey of more than 700 rosacea patients, 67 percent found their coping strategies that they were able to reduce the number of flare-ups they experienced through stress management techniques. Coping is defined as "cognitive a behavioral effort to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction" [14]. There is still limited data on coping strategy and the psychological condition of rosacea patients'.

QoL and coping strategies in patients with rosacea differ between individuals and across different cultures. Therefore, it is necessary to study patients' QoL and coping strategy in every particular community. Besides, the aim of the study was to find the connection between QoL and coping strategies in patients with rosacea.

Materials and methods.

This questionnaire-based study was performed in the Dermatology clinic from November 2016 to December 2017. A total of 138 patients, aged from 22 to 80, took part in this study with diagnoses of rosacea, among which 25 (18%) were male, while 113 (82%) were female. From 138 patients Erythematotelangiectatic clinical subtype was presented in 28 patients (20.29%), Papulopustular subtype in 93 (67.39%), Phymatous subtype in 4 (2.90%), and Ocular subtype in 13 (9.42%).

The study received ethical approval from the local ethical committee and all data was managed in accordance with the local data privacy regulations. All patients were provided with an informed consent form before participating in the research process.

Inclusion criteria: 1. A clinical diagnosis of rosacea was confirmed by a dermatologist. 2. Formal informed consent before involvement in the research. 3. Age from 18 years old or over.

Exclusion criteria: 1. Patients diagnosed with a psychiatric disease or any serious physical illnesses that can have an influence on the study result and/or patients' quality of life (QoL). 2. Age less than 18 years.

A subtype of rosacea was assessed according to a standard classification system developed by the National Rosacea Society Expert Committee on the Classification and Staging of Rosacea. In general, standard grading systems are often essential for doctors and researchers as well as for patients too. According to the scorecard, clinicians assessing patients' primary and secondary signs and symptoms which are graded as absent, mild, moderate, or severe types. (0-3) [4]. At the same time, the global assessment for clinicians can be most easily and meaningfully performed by subtype. Each subtype should be performed with a standard rating of 0 to 3, based on a composite of the severity of the signs and symptoms [4].

Patient participation in evaluation is, therefore, essential. The patient may provide (0 to 3) a global assessment of the severity of his condition in general terms that encompasses both the physical manifestations of rosacea and its impact on quality of life, which may include psychological, social, and occupational effects.

In fact, during the research, conducted interviews with patients, where captured their demographic information, such as age, education, marital status, and gender; and completed the DLQI questionnaire and COPE questionnaire.

Skin-related QoL was measured using a validated adapted DLQI questionnaire on national language, consisting of 10 questions, that were grouped using the following six headings: symptoms and feelings (1,2), daily activities (3,4), leisure (5,6), work and/or school (7), personal relationships (8,9), and treatment (10). The scoring for each question was rated on a 4-point scale (0 = not at all to 3 = very much) [15]. The total score is from 0 (without any effect on QoL) to 30 (worst effect on QoL) [16].

Based on the Carver COPE questionnaire that consists of 60 questions, 15 different subscales coping dimensions were identified (1) Positive reinterpretation and growth, 2) Mental disengagement, 3) Focus on and venting emotions, 4) Usage of instrumental social support, 5) Active coping, 6) Denial, 7) Religious coping, 8) Humor, 9) Behavioral disengagement, 10) Restraint, 11) Use of emotional social support, 12) Substance use, 13) Acceptance, 14) Suppression of competing activities, and 15) Planning). The COPE was scored on a 4-point scale, a score ranging from 1 to 4 (1 = I usually don't do this at all to 4 = I usually do this a lot) [17].

In fact, various methods were used for Statistical analysis. For the quantitative data, the average rate and standard deviation were detected, the equality of variances was tested by Levene's Test of Equality, t-test was examined to evaluate the differences between the groups independent samples. Accordingly, dichotomous data were presented as number and percentage. The Fisher exact test was used to analyze categorical variables. Correlation analysis was performed by Spearman's rank correlation analysis. Besides, multivariable regression analyses were also carried out. Statistical significance was set at $p<0.05$; the analysis was performed using the statistical software package SPSS 22. We used regression analysis formula for evaluation the risk prediction model. This formula contains the results we have obtained, which can be used to predict.

Results.

Interpretation of the research results was made according to gender, age characteristics, and rosacea subtypes, which are exposed in Table 1.

Phymatous subtype (n = 4) were examined only in male patients. As for other subtypes of rosacea, they mainly were significantly dominant in females.

The patients' average age was significantly low in the case of Erythematotelangiectatic and Papulopustular subtype and advanced in Ocular and Phymatous subtypes. Patient's demographic characteristics and rosacea clinical subtypes are introduced in Table 1.

Based on the data mean Rosacea-specific DLQI is significantly low and equals symptoms and feelings - 3.75+1.92, daily activities - 3.12+1.77; leisure - 2.52+1.81, work and/or school - 1.52+1.50, personal relationships - 2.42+1.90, treatment - 1.59+1.04. The average DLQI in the case of rosacea is 14.09+3.18. The higher the score of DLQI the more impact the disease can have on a person's life.

During the research, we measured the average distribution of QoL according to the subtypes of the rosacea, which is presented in Figure 1.

The higher the score of DLQI is the more impact the disease has on a person's life.

The distribution of patients' percentage wise according to the subtypes of rosacea and DLQI is presented in Figure 2.

When the frequency of Erythematotelangiectatic subtype is higher in the group with the small impact, while Papulopustular subtype prevails in all other groups.

On the other stage of the research were studied correlations between DLQI, disease subtypes, and patients' demographic characteristics (Table 2).

Based on the correlation analysis of the discussion factors a significant interaction was revealed between DLQI and the subtypes of the disease. As for Erythematotelangiectatic subtype, it had a significant positive correlation with a small and moderate effect on patients' life quality and a negative correlation with a very large and extremely large effect on patients' life quality. Papulopustular subtype had a negative correlation with a slight effect and a positive correlation with extremely large results. Male gender and single status were connected with a moderate effect on QoL when widowed status - with the small one. Employment showed a significantly positive correlation with an extremely large effect and a negative - with a small one.

The regressive analysis was conducted based on the correlation analysis (Table 3), where we combined very large and extremely large effect of DLQI (Scores - 11-30).

On the one hand regression analysis showed that Papulopustular subtype of rosacea and employed status increased very and extremely large effect of QoL, while on the other hand Patient's global assessment (mild), male gender and age decreased it.

Patients' global assessment which was measured by scorecard correlated with DLQI; in particular, mild global assessment manifested a significant positive correlation with a moderate

Table 1. *Patients' demographic characteristics according to the rosacea subtypes.*

		Erythematotelangiectatic ***(N=28)***	**Papulopustular** ***(N=93)***	**Phymatous** ***(N=4)***	**Ocular** ***(N=13)***	**p value**
		n(%)	*n(%)*	*n(%)*	*n(%)*	
Gender	Male	5(17.86)	13(13.98)	4(100)	3(23.08)	0.0001
	Female	23(82.14)	80(86.02)	0(0)	10(76.92)	0.0001
Age	<30	2(7.14)	8(8.6)	0(0)	0(0)	0.6704
	31-40	9(32.14)	33(35.48	1(25)	1(7.69)	0.2506
	41-50	7(25)	27(29.03)	0(0)	2(15.38)	0.4614
	51-60	6(21.43)	21(22.58)	1(25)	3(23.08)	0.9983
	>60	4(14.29)	4(4.3)	2(50)	7(53.85)	<0.0001
Mean age	Mean+Sd	45.25+12.81	42.96±10.72	62.08±13.07	58.00±20.15	0.0000

**Mean+Sd - mean and standard deviation (SD). †p value (P<0.05)*

Table 2. *Dermatology Life Quality Index connection between rosacea subtype and demographic characteristics.*

		P	**small effect on patient's life**	**moderate effect on patient's life**	**very large effect on patient's life**	**extremely large effect on patient's life**
Subtypes	Erythematotelangiectatic	R	0.345**	0.194*	-0.188*	-0.211*
		p	0.000	0.023	0.027	0.013
	Papulopustular	R	-0.254**	-0.110	0.080	0.192*
		p	0.003	0.198	0.351	0.024
	Phymatous	R	-0.060	0.020	0.023	-0.001
		p	0.482	0.814	0.791	0.987
	Ocular	R	-0.033	-0.101	0.117	-0.017
		p	0.701	0.238	0.170	0.844
Gender	Male	R	0.138	0.184*	-0.109	-0.144
		p	0.107	0.031	0.204	0.091
Marital status	Married/living with partner	R	-0.079	-0.145	0.026	0.160
		p	0.359	0.089	0.758	0.060
	Single	R	-0.015	0.215*	-0.072	-0.105
		p	0.864	0.011	0.399	0.219
	Widowed	R	0.268**	-0.108	-0.044	-0.043
		p	0.001	0.209	0.611	0.620
	Divorced/ separated	R	-0.068	-0.001	0.143	-0.113
		p	0.430	0.987	0.095	0.187
Current employment status	Employed	R	-0.194*	-0.124	0.031	0.218*
		p	0.022	0.149	0.718	0.010
	High school	R	0.141	-0.088	-0.079	0.071
		p	0.098	0.303	0.355	0.408
Patient's global assessment	Mild	R	-0.047	0.345**	-0.071	-.204*
		p	0.583	0.000	0.405	0.017
	Moderate	R	-0.017	-0.023	0.133	-0.118
		p	0.840	0.792	0.120	0.167
	Severe	R	0.049	-0.204*	-0.093	0.259**
		p	0.565	0.016	0.278	0.002

** p < 0.05, **p < 0.01, and ***p < 0.001; †R- correlation coefficient.*

effect on patients' life and a negative correlation with an extremely large effect on patients' life. Severe one had a negative correlation with a moderate effect on a patient's life, while positive with an extremely large effect on it.

Risk prediction model.

The following regression analysis formula has been used to evaluate the risk prediction model very and extremely large effect on life quality.

Z=3.8-1,05* X1+1.1* X2-1.77* X3-0.06* X4+1.77* X5 (1)

P=1/1+e-z (2)

NOTE: X1 - male; X2 - Employed; X3 - Patient's global assessment (mild); X4 - age; X5 - Papulopustular subtype.

P - The risk prediction (%) of very and extremely large effect of QoL. X - factor mean. To determine the forecast, we defined the risk factor; if the studied patient had a predictive factor - X, insert 1 in the equation, if not - 0.

Table 3. *Multivariate logistic regression analysis of risk factors of very and extremely large effect on patients' life.*

	Risk factor	Regression coefficient	Standard error	P value	OR	95% C.I. for OR	
						Lower	Upper
X1	Male	-1.05	0.54	0.0498	0.35	0.12	0.99
X2	Employed	1.11	0.47	0.0187	3.02	1.20	7.59
X3	Patient's global assessment(mild)	-1.77	0.65	0.0064	0.17	0.05	0.61
X4	Age	-0.06	0.02	0.0038	0.94	0.91	0.98
X5	Papulopustular subtype	1.77	0.50	0.0004	5.85	2.22	15.43
	Constant	3.08	1.07	0.0040	21.74		

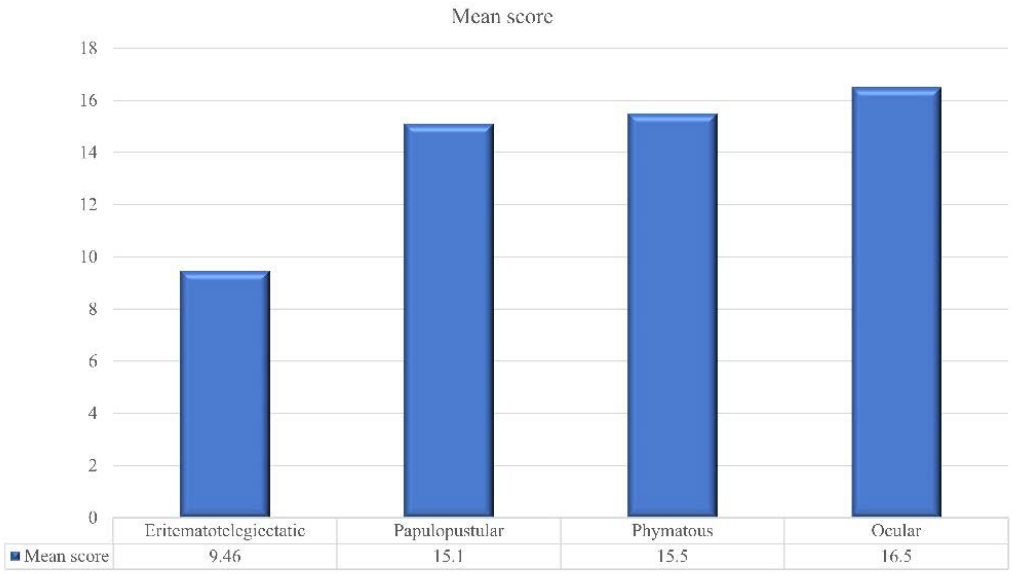

Figure 1. *Average distribution of quality of life (QoL) according to the subtypes of the rosacea.*

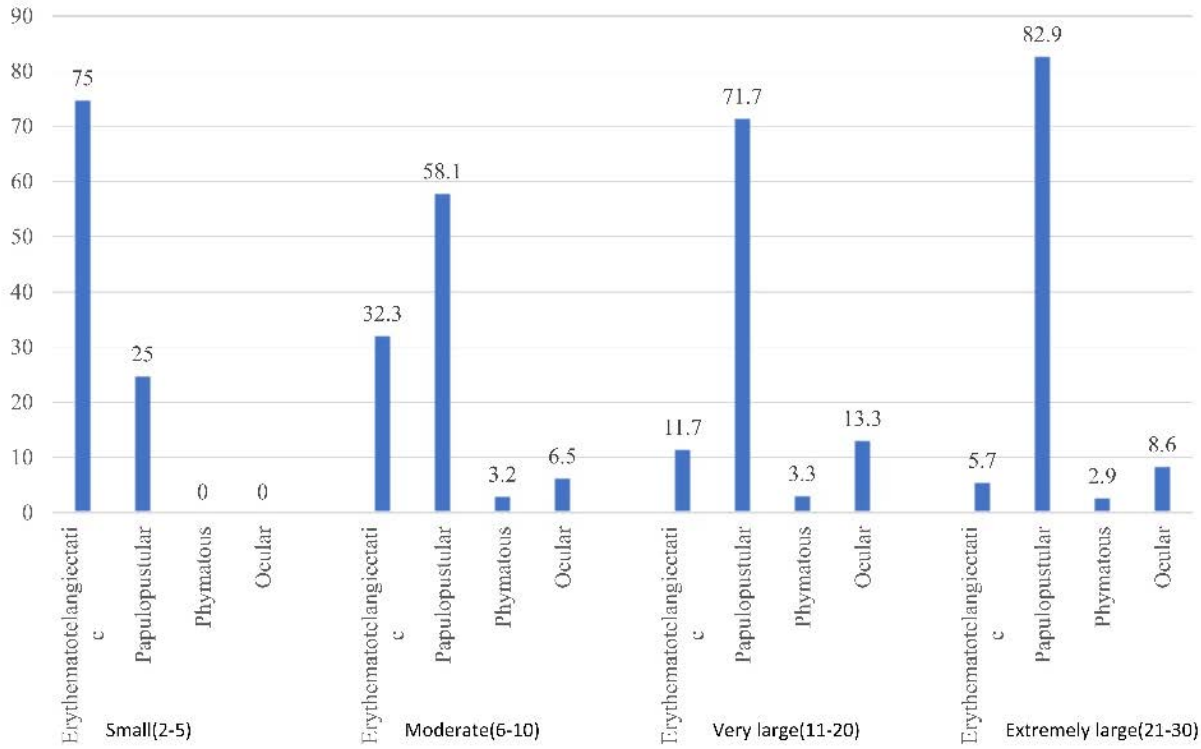

Figure 2. *Distribution of patients' percentage wise according to the subtypes of rosacea and DLQI.*

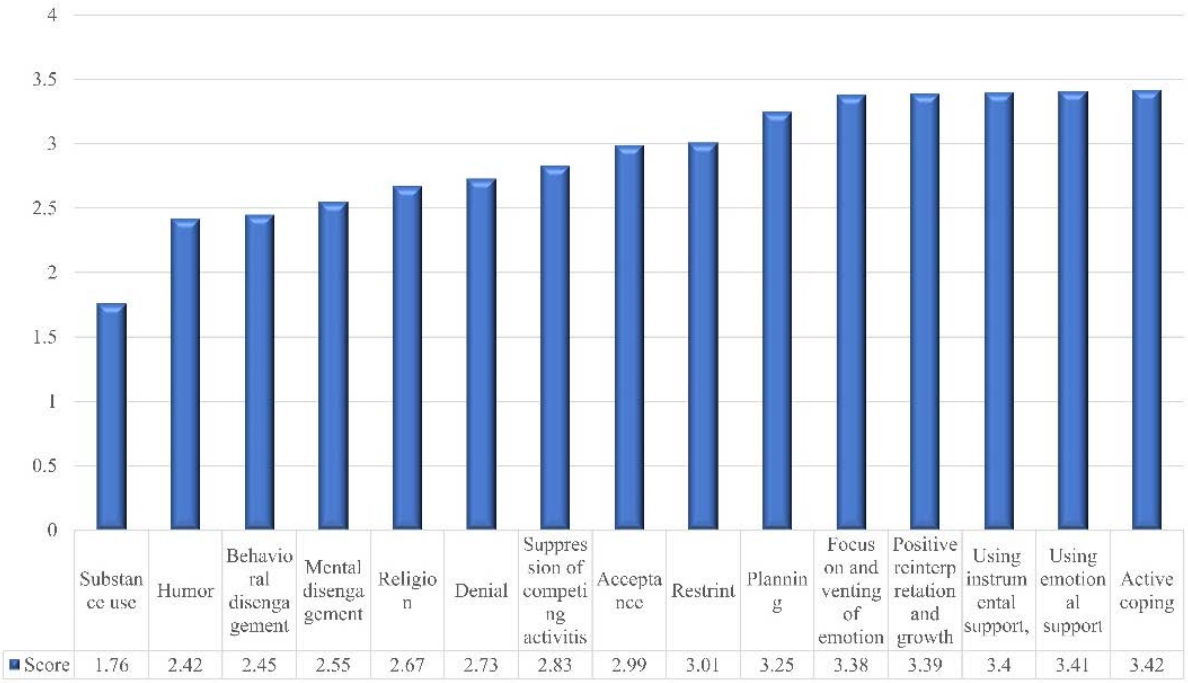

Figure 3. *Assessment of Coping Strategies.*

The obtained results were summed up and put into the (2) formula.

Based on the regression analysis formula can be calculated a large and extremely large effect according to the existing risk forecast.

Coping Strategies: According to the assessment of coping strategies (Figure 3) the significantly low score has - substance use. High scores have such factors as focus on and venting of emotion; use of instrumental social support; positive reinterpretation and growth; use of emotional social support; active coping.

Correlation analysis showed a connection between the DLQI and coping strategy. Symptoms and feelings have a significantly negative correlation with positive reinterpretation and growth - r=-0.225**, p=0.008; mental disengagement - r=-0.173*, p=0.042; acceptance - r=-0.247**, p=0.003.

Discomfort caused by treatment is in significantly negative correlation with positive reinterpretation and growth - r=-0.217*, p=0.011; mental disengagement - r=-0.242**, p=0.004; religious coping - r=-0.221**, p=0.009; acceptance - r=-0.248**, p=0.003.

Moreover, problems in personal relationships show a significantly negative correlation with positive reinterpretation and growth - r=-0.168*, p=0.049 and acceptance - r=-0.197*, p=0.021.

Problems at Work and/or School has a negative correlation with mental disengagement - r=-0.170*, p=0.047.

Discussion.

Rosacea covers both psychological and physical fields. Although rosacea causes only limited physical effects, the prominent visibility of these changes often yields intense psychosocial disorder [18]. The psychological field implies cognitive as well as emotional and social components. The Physical sphere consists of discomfort and limitation of physical functioning, which creates a lot of problems in the social life of a patient.

DLQI scores for rosacea ranged from 4.3 to 17.3 [19]. Differences in scores could not be explained by differences in subtypes [15] but, on the other hand, the highest rosacea QoL total score was found for subtype 3 (phymatous rosacea) ($p < 0.04$) [20].

The main goal of our study was to find the connection between QoL and coping strategies in patients with rosacea. Based on our data, the average score of influence of rosacea on patients' life quality is 14.09+3.18. Effect on patient's life is dependent on the subtype, severity of the disease, and social status: small effect on patient's life was significantly associated with Erythematotelangiectatic subtype (r=0.345, p=0.000) and widowed status (r=0.268, p=0.001), moderate effect on patient's life significantly correlated with Erythematotelangiectatic subtype (r=0.194, p=0.023) and single status (r=0.215*, p=0.011), extremely large effect on patient's life was the significant correlate with Papulopustular subtypes (r=0.192, p=0.024), Papulopustular subtype increases the very and extremely large effect of QoL OR= 5.85 (95%CI: 2.22-15.43).

Patients with rosacea may also feel that their facial defect diminishes their sexual attractiveness and limits career development [21,22]. Problems with sexual life in our surveyed population were rated at an average of 1.1 points and career - 1.5. And the highest score was awarded to symptoms and feelings - 3.75.

Baseline DLQI scores are significantly related to age. Being younger is related to higher DLQI scores [21,22]. In our study, the higher the age the risk is more reduced- OR=0.94 (95%CI:0. 91-0.98).

Meanwhile, men are more negatively affected [10]. In our case, on the contrary, the male gender decreases very and extremely large effect OR= 0.30 (95%CI:0.11-0.83).

The employed person also experiences the negative effects of rosacea – an extremely large effect on patient's life was the significantly correlated employed status (r=0.218, p=0.010) and OR= 3.02 (95% CI:1.2-7.59).

The quality of life is of particular importance to the patient's self-assessment [15]. An extremely large effect on patient's life was the significantly correlated severe global assessment (r=0.259, p=0.002). Patient's mild global assessment decreased extreme influence on QoL - OR=0.17(95%CI:0.05-0.61).

More than 33% of patients with rosacea reported being "stigmatized" because of their skin condition, and 50% of those individuals avoided a social life. More than half (54%) of the patients who reported these feelings adopted a coping strategy that consisted of avoiding public contact or canceling all kinds of social engagements because of their disease [23].

Results indicate that emotion-focused and behavioral/ avoidant-focused coping strategies are used to manage the negative impact of rosacea on individuals' lives [24]. According to our research, a high score has such factors as focus on and venting of emotion; use of instrumental social support; positive reinterpretation and growth; use of emotional social support.

Active coping as a coping mechanism, patients with rosacea may avoid social situations [25]. Suppression of competing activities was estimated by 2.8 points. It shows a weak negative correlation with symptoms and feelings, however, in our study, the highlight was active coping, as well as the use of instrumental social support, positive reinterpretation, and growth, and the use of emotional social support.

Conclusions.

Rosacea has a strong impact on human life. QoL in rosacea patients is connected to the following factors such as age, gender, employment status, self-esteem, and subtype of the disease. The patients' average age was significantly low in the case of Erythematotelangiectatic and Papulopustular subtype and advanced in Ocular and Phymatous subtypes. In all subtypes of rosacea except Phymatous is significantly dominant in females. Employed status in employed status increases very and extremely large effect of QoL. Extremely large effect on patients' life was the significant correlate severe global assessment. Papulopustular subtype increases very and extremely large effect of QoL OR= 5.85.

Correlation analysis shows the connection between the quality of life and coping strategy. Symptoms and feelings have significantly negative correlation with all types of positive reinterpretation and growth, mental disengagement, and acceptance. Based on the regression analysis formula large and extremely large effects of DLQI can be calculated according to the existing risk forecast. The results obtained in our research may be a starting point for the elaboration of complex support for patients with rosacea.

Conflict of interest.

We declared no conflict of interest.

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