Georgian Medical News

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии
საქართველოს სამედიცინო სიახლენი

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.

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 ინგ-ლისურენოვან 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 რეზიუმების (ინგლისურ,რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენ-ტული 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, შემა-ჯამებელი 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. მიკროფოტო-სურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი,ანათლების შედებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სუ-რათის 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 უცხო-ური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამული, 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 ხელმძღვანე-ლის 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 შე-ჯერება 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.

Содержание:

PREVALENCE AND SOCIO-DEMOGRAPHIC RISK FACTORS OF EMOTIONAL BURNOUT AMONG PSYCHIATRISTS AND NURSING STAFF IN PSYCHIATRIC SERVICES IN KAZAKHSTAN

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Abstract.

To date, there are no studies examining the degree of emotional burnout among psychiatrists and nursing staff working in psychiatric hospitals in Kazakhstan. The aim of this study was to assess the prevalence and risk factors of emotional burnout among psychiatrists and nurses working in mental health services in the Republic of Kazakhstan. A cross-sectional survey was conducted using the Maslach Burnout Inventory (MBI) questionnaire among psychiatrists and nurses in psychiatric hospitals across Kazakhstan. According to the MBI questionnaire, metrics such as Emotional Exhaustion (EE), Personal Achievement (PA), and Depersonalization (DP) were measured to assess burnout. Socio-demographic indicators of the participants were recorded. Of the 1015 participants, 29.0% were psychiatrists and 71.0% were nurses. Moderate Emotional Exhaustion (EE) were observed in both groups, with scores of 21.2±8.3 for psychiatrists and 20.5±8.0 for nurses (p=0.345). Depersonalization (DP) scores were 9.0±5.8 for psychiatrists and 9.0±5.4 for nurses (p=0.37). Regression analysis identified various risk factors for EE among psychiatrists including age groups 25-30, 36-40 years (OR1.7 and OR1.8, respectively), work schedule (Flextime OR1.4, Part-Time OR1.5), and job tenure (3-5 years, ≥20 years, OR1.7). Factors associated with the progression of DP in psychiatrists were Part-Time work schedule (OR1.5) and smoking (OR1.5), p < 0.05. For nurses, age groups 25-30 and 36-40, job tenure ≥3 years, Part-Time work, and workload were identified as risk factors for EE, p<0.05. Housing conditions were identified as a risk factor for burnout across all measurements in both groups (p<0.05). Smoking was a factor in all three dimensions for psychiatrists, and for EE and DP in nurses, p<0.05. The study reveals a moderate level of emotional burnout among psychiatrists and nurses in Kazakhstan's psychiatric services. Given the unique challenges and vulnerabilities of personnel in psychiatric services, these findings necessitate the implementation of coping strategies and preventative measures to mitigate professional burnout.

Key words. Burnout, psychiatrics, nursing staff, depersonalization, emotional exhaustion, mental health services, Kazakhstan.

Introduction.

Emotional burnout, first delineated in 1974, is a syndrome characterized by a chronic response to occupational stress, manifesting as physical, mental, and emotional exhaustion [1,2].

The syndrome comprises three primary dimensions: Emotional Exhaustion (EE), where an individual's emotional resources are so depleted that they feel disengaged; Depersonalization (DP), a growing sense of cynicism towards patients; and a Reduced Sense of Personal Accomplishment (PA), indicating an individual's negative self-evaluation of their professional capabilities [3,4].

Healthcare professionals, with the intricate nature of patient care and treatment, are persistently subjected to emotionally taxing stressors [5].

This environment amplifies their risk of professional burnout, with some studies indicating a striking prevalence rate of approximately 54.4% among physicians [6,7]. This risk is notably pronounced in psychiatric services, where professionals face unique challenges such as patient suicides, demanding work schedules, and the complexities associated with mental health treatment [8-10].

Psychiatric nurses, in particular, experience a compounded impact, often grappling with emotional burnout and other mental health symptoms [11]. The implications of this burnout syndrome extend beyond individual well-being, affecting patient care quality and the broader healthcare ecosystem [12].

While global concerns about emotional burnout in healthcare professionals mount, data from Kazakhstan paints a worrisome picture. Existing literature indicates an emergent crisis, yet comprehensive studies in this context, especially concerning psychiatric professionals, remain conspicuously absent [13].

Addressing this knowledge gap, our study aims to assess the prevalence and determinants of emotional burnout among psychiatrists and nursing staff in Kazakhstan's mental health services. By understanding these determinants, this study hopes to inform targeted interventions to reduce emotional burnout and improve the quality of psychiatric care in Kazakhstan.

Materials and Methods.

Participants: A nationwide cross-sectional survey was conducted among psychiatrists and nursing staff working in psychiatric hospitals of the Republic of Kazakhstan between 2021 and 2023. Out of the total n=1015 participants in the study, n=294 (29.0%) were psychiatrists and n=721 (71.0%) were nursing staff, respectively.

Considering the Republic of Kazakhstan's administrative demarcation into 14 regions and three cities of national significance – Almaty, Astana (now known as Nur-Sultan), and Shymkent – the participant selection was performed with a keen focus on this territorial distribution (Figure 1).

Eligibility Criteria:

Participants for this study were selected based on three main criteria. Firstly, they had to be actively employed as either a psychiatrist or nursing staff in psychiatric hospitals within the Republic of Kazakhstan, ensuring firsthand experience in the mental health sector. Secondly, only those currently engaged in their roles were considered, capturing contemporary professional challenges. Lastly, written informed consent was mandatory for participation, guaranteeing voluntary involvement and awareness of the study's objectives and implications.

Ethical Issues:

The study received approval from the Local Ethics Committee of the AO "Kazakh Medical University of Continuing Education" in the Republic of Kazakhstan (protocol of the Local Ethics Commission No. 77 dated 05.02.2020). Participants were provided with the Maslach Burnout Inventory (MBI) and sociodemographic questionnaires.

No questionnaire contained any personal information. Comprehensive measures were undertaken to ensure confidentiality and privacy, and all participants provided written informed consent to partake in the study.

Measures:

Sociodemographic Questionnaire: Based on the sociodemographic questionnaire, several parameters were identified, including age, gender, marital status, housing conditions, work experience, work schedule, dietary habits, workload, harmful habits such as smoking, number of cigarettes smoked per day, alcohol abuse, use of psychotropic drugs, consumption of high-calorie food, sedentary lifestyle, and salary level.

The Maslach Burnout Inventory (MBI): To assess burnout among the participants, The Maslach Burnout Inventory (MBI) was utilized. This questionnaire, consisting of 22 items, is a widely recognized, validated, and frequently employed instrument to measure emotional burnout related to job stress [14]. It features three subscales to measure the following: Emotional Exhaustion (EE, 9 items), Personal Accomplishment (PA, 8 items), and Depersonalization (DP, 5 items). The total scores for the three subscales are 54, 48, and 30, respectively. The level of emotional burnout was considered high if the EE score was ≥27, the PA score was ≤31, or the DP score was ≥13. The level of emotional burnout was regarded as moderate if the EE score ranged from 17 to 26, the PA score ranged from 32 to 38, or the DP score ranged from 7 to 12. The level of emotional burnout was deemed low if the EE score was ≤16, the PA score was ≥39, or the DP score was ≤6. The overall level of emotional burnout was considered high if any one of the three subscales was rated as high [15].

The measures, including the sociodemographic questionnaire and the Maslach Burnout Inventory, were initially administered in paper format. Following data collection, all paper responses were subsequently digitized for analysis.

Statistical Analysis:

Statistical analysis was conducted using SPSS, version 22 (SPSS Inc., Chicago, IL, USA). Demographic variables were analyzed employing descriptive statistics and were presented as frequencies and valid percentages when categorical. For continuous variables with a normal distribution, they were presented as mean values ± standard deviations (SD); otherwise, variables were presented as medians with ranges. Variables related to burnout and job satisfaction were presented as mean ± standard deviation. To compare these factors with demographic variables, a one-way analysis of variance (ANOVA) was employed. Chi-square tests were used to determine relationships between categorical variables.

A logistic regression model was constructed using the demographic variables to study their association with burnout and job satisfaction variables. A p-value of less than 0.05 was considered statistically significant.

Results.

Distribution of study participants:

In general, the distribution of study participants by region was homogeneous (Figure 1). Among psychiatrists living in large cities
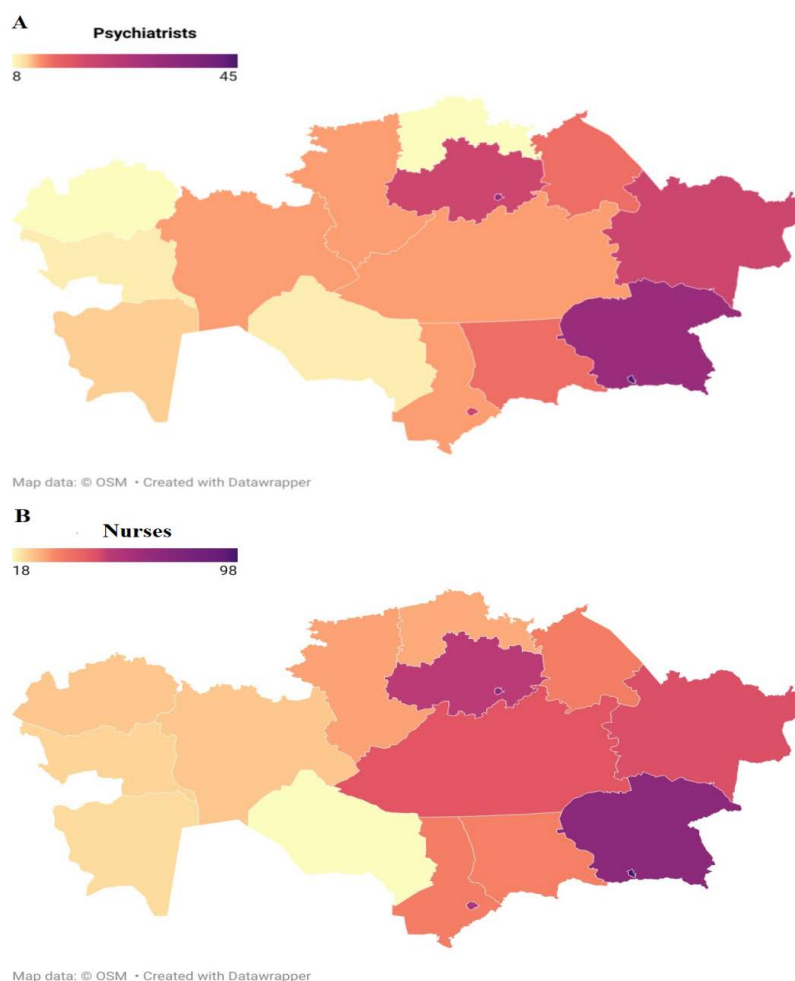

Figure 1. Distribution of study participants depending on the region of residence (created via Datawrapper; available at https://www.datawrapper.de/maps).

such as Astana, Almaty and Shymkent, the distribution was in the range of 7-15%, while the distribution of nurses in these megacities of the country was in the range of 7-13%, respectively. Also, in a large region of the country, such as the Almaty region, the both groups of study participants (both psychiatrists and nurses) averaged 10%.

Socio-demographic Characteristics:

Of the n=1015 study participants (Table 1), a significant proportion were females: n=212 (72.1%) female psychiatrists and n=644 (89.3%) female nursing staff (p≤0.05). Notably, among psychiatrists, n=212 (72.1%) were aged 45-50 years, while only n=137 (19.0%) nursing staff fell within this age bracket (p≤0.05). Over 40% across all groups had >20 years of work experience, but this was not statistically significant (p≥0.05). In work shifts, 60% of psychiatrists worked the Day Shift, whereas n=335 (46.5%) nursing staff were On-Call (p≤0.05). No significant differences were found between the groups regarding dietary habits, workload, smoking, alcohol abuse, and living conditions (p≥0.05).

Emotional Exhaustion:

Most psychiatrists showed moderate EE (Table 2), with men at n=40 (13.6%) and women at n=102 (34.7%) scoring between 18 and 29. The average EE scores for psychiatrists and nursing staff were 21.2±8.3 and 20.5±8.0, respectively, with no significant gender differences within groups (male p=0.241; female p=0.123).

Depersonalization:

Low levels of DP were predominant in both female psychiatrists (n=190, 64.6%) and male psychiatrists (n=74, 25.2%) (Table 3). No significant differences in DP scores were identified across groups (p≥0.05). Average scores suggested moderate depersonalization for both professions (p=0.37).

Personal Accomplishment Reduction:

Most psychiatrists, n=138 females (46.9%) and n=50 males (17.0%), reported minimally reduced PA scores (PA>40). No significant differences were observed in PA scores between the professions (p=0.345) (Table 4).

Factors Influencing Emotional Exhaustion among Psychiatrists:

Variables contributing significantly to EE included: age (25-30, 36-40 years), work schedules (Flextime, Part-Time), work experience (3-5 years, ≥20 years), workload, housing, salary, and smoking habits (Table 5). Being male, certain work schedules (Part-Time), and smoking were significant factors for DP onset. Similarly, male gender, age (25-30 years), Flextime schedules, salary levels, housing conditions, and smoking influenced reduced PA.

Factors Contributing to Emotional Burnout among Nurses:

Nurses aged 25-30 and 36-40 years, those with ≥3 years of job tenure, and those on Part-Time schedules showed a heightened risk of EE. Workload, marital status, smoking, and alcohol consumption also emerged as significant EE predictors. For DP, age (31-35 years), Part-Time work, marital status, and smoking were influential. Reduced PA was associated with being male and being in age groups 25-30 or 36-40 years. Across all criteria, housing conditions consistently emerged as a risk factor (Table 6).

Discussion.

Our study sought to delineate the prevalence and associated risk factors of burnout among psychiatrists and nursing staff employed in psychiatric hospitals within the Republic of Kazakhstan. The exploration of this subject is imperative, especially considering that, relative to their counterparts in other medical domains, psychiatrists in psychiatric settings encounter a distinctive array of challenges. Such

challenges include the management of aggressive and suicidal patients, the imperative for heightened emotional resonance with patients, and the stigma attached to mental health disorders [4]. Furthermore, mental health nurses, engaging with patients across various contexts—social, familial, and occupational—while also objectively addressing psychiatric pathologies and behaviors uncommon in other medical settings, are presented with unique risk factors. This may subsequently lead to a heightened prevalence of emotional burnout in comparison to other healthcare professionals [16].

The results of our investigation highlighted notable differences in socio-demographic characteristics between the psychiatrists and the nursing staff surveyed. Notably, significant variances were observed concerning gender, age, work regimen, remuneration scale, and marital status (p≤0.05).

The Maslach Burnout Inventory (MBI), utilized in our research, stands as a robustly objective tool, prevalently recognized in scholarly works for gauging symptoms of emotional burnout [17]. The mechanisms underpinning stress responses are multifaceted and exhibit significant inter-individual variability, even in response to homogenous stressors [18]. The MBI metrics for EE, DP, and PA indicated a moderate manifestation of emotional burnout among the participants. Interestingly, the disparities in burnout intensities between psychiatrists and nursing staff in psychiatric care were statistically indistinct (p≥0.05). A preceding meta-analysis identified that psychiatrists manifest elevated levels of EE and median levels of DP and PA [4], accentuating their vulnerability to emotional burnout. A separate investigation inferred that the magnitude of EE differed between these professional cadres, with psychiatrists enduring work-associated EE more profoundly than psychiatric nursing personnel [19]. Such divergence could plausibly stem from the augmented workload shouldered by psychiatrists, a factor contributing to approximately 11% of the variances in EE levels [19].

Prompt identification of emotional burnout and its accompanying risk factors remains paramount for marshaling both internal and external resources necessary to address this phenomenon [20]. Prior investigations have pinpointed various determinants correlated with emotional burnout. These encompass age, physiological and psychological manifestations, and occupational elements such as task overload, intraprofessional conflicts, and length of service [21]. Our logistic regression analysis unveiled that both psychiatrists and nursing staff within the age brackets of 25-30 and 36-40 are notably predisposed to emotional exhaustion (p < 0.05).

The tenure of professional engagement emerged as a significant correlate of emotional burnout. Specifically, psychiatrists with a professional span of 3-5 years and those with over 20 years, in conjunction with nursing personnel with a service duration of up to 5 years, appear susceptible to burgeoning EE (p≤0.05). Noteworthy is that both age and tenure manifested prominently in the context of emotional exhaustion, thus intimating a cumulative detrimental impact. Corroborating this inference, extant scholarly articles reveal an inverse relationship between emotional burnout and the age of those in psychiatric nursing roles [22]. This insinuates a prospective decline in emotional burnout with advancing age. In this paradigm, seasoned mental health nurses are less beleaguered by emotional burnout as compared to their nascent colleagues [23], emphasizing the nexus between emotional resilience and accrued professional acumen. Moreover, among our cohort, depersonalization and diminished personal achievement were discernibly more prevalent among male participants relative to their female counterparts (p≤0.05). This alludes to the heightened vulnerability of men to declines in depersonalization and personal accomplishment, spotlighting potential gender-based divergences in these domains. Contrastingly, other empirical studies have posited that female medical practitioners exhibit heightened emotional burnout vis-à-vis their male peers [24].

Table 1. Socio-demographic characteristics of the selected study participants.

Indicators	Psychiatrists (n=294)	Nurses (n=721)	p-value
Gender			≤0,05*
Male	82 (27.9%)	77 (10.7%)	
Female	212 (72.1%)	644 (89.3%)	
Age			≤0,05*
<25 years	11 (3.7%)	54 (7.5%)	
25 - 30	34 (11.5%)	90 (12.5%)	
31 - 35	39 (13.3%)	64 (8.9%)	
36 - 40	34 (11.5%)	87 (12.1%)	
41 - 44	33 (11.2%)	99 (13.7%)	
45 - 50	50 (17.0%)	137 (19.0%)	
51 - 55	39 (13.3%)	102 (14.1%)	
56 - 65	43 (14.6%)	82 (11.4%)	
≥65 years	11 (3.7%)	6 (0.8%)	
Work Experience			≥0,05
≤3 years	22 (7.5%)	76 (10.5%)	
3-5 years	25 (8.5%)	76 (10.5%)	
6-10 years	41 (13.9%)	116 (16.1%)	
11-20 years	67 (22.8%)	160 (22.2%)	
≥20 years	139 (47.3%)	293 (40.6%)	
Work Schedule			≤0,05*
Day Shift	203 (69.0%)	284 (39.4%)	
Flextime	18 (6.1%)	73 (10.1%)	
On-Call	57 (19.4%)	335 (46.5%)	
Part-Time	16 (5.4%)	29 (4.0%)	
Eating Habits			≥0,05
Regular Consumption of Hot Meals	173 (58.8%)	454 (62.9%)	
On-the-Go Consumption	86 (29.2%)	173 (23.9%)	
Frequent Snacking	35 (11.9%)	94 (13.0%)	
Work Load			≥0,05
0.25 Full-time equivalent	15 (5.1%)	32 (4.4%)	
0.5 Full-time equivalent	14 (4.8%)	30 (4.2%)	
1.0 Full-time equivalent	95 (32.3%)	422 (58.5%)	
1.25 Full-time equivalent	57 (19.4%)	116 (16.1%)	
1.5 Full-time equivalent	113 (38.4%)	121 (16.8%)	
Smoking			≥0,05
Never Smoked	110 (37.4%)	242 (33.6%)	
Smoker	134 (45.6%)	378 (52.4%)	
Former Smoker	21 (7.1%)	40 (5.5%)	
Uses non-smoking tobacco products (e.g., snuff, chew, vape)	29 (9.9%)	61 (8.5%)	
Alcohol Consumption in the Past 12 Months			≥0,05
Daily	4 (1.4%)	-	
5-6 days a week	15 (5.1%)	2 (0.3%)	
3-4 days a week	41 (13.9%)	18 (2.5%)	
1-2 days a week	78 (26.5%)	128 (17.7%)	
1-3 days a month	102 (34.7%)	297 (41.2%)	
Less than once a month/Special occasions	54 (18.4%)	276 (38.3%)	
Salary Level			≤0,05*
Up to $150	15 (5.1%)	148 (20.5%)	
Up to $250	110 (37.4%)	478 (66.3%)	
Up to $350	95 (32.3%)	76 (10.5%)	
Up to $450	47 (15.9%)	14 (1.9%)	
Above $500	27 (9.2%)	5 (0.7%)	
Marital Status			≤0,05*
Married	181 (61.5%)	430 (59.6%)	
Living together	13 (4.4%)	59 (8.2%)	
Single	48 (16.3%)	107 (14.8%)	
Divorced	39 (13.3%)	76 (10.5%)	
Widowed	13 (4.4%)	49 (6.8%)	
Housing Conditions			≥0,05
Dormitory	6 (2.0%)	31 (4.3%)	
Apartment	210 (71.4%)	565 (78.4%)	
House	51 (17.3%)	90 (12.5%)	
Shared Accommodation	27 (9.2%)	35 (4.8%)	

Table 2. *Indicators of Emotional Exhaustion (EE) level of study participants based on the MBI questionnaire.*

Indicators	EE						p
	Psychiatrists			Nurses			
	<17	18-29	>30	<17	18-29	>30	
Male	32 (10.9)	40 (13.6)	10 (3.4)	31 (4.3)	33 (4.6)	13 (1.8)	0,241
Female	72 (24.5)	102 (34.7)	38 (12.9)	220 (30.5)	336 (46.6)	88 (12.2)	0,123
Total	21.2±8.3			20.5±8.0			0,345

Table 3. *Indicators of Depersonalization (DP) level of study participants based on the MBI questionnaire.*

Indicators	DP						p
	Psychiatrists			Nurses			
	<5	06-11	>12	<5	06-11	>12	
Male	74 (25.2)	8 (2.7)	0	74 (10.3)	3 (0.4)	0	0,087
Female	190 (64.6)	21 (7.1)	1 (0.34)	600 (83.2)	44 (6.1)	0	0,244
Total	9.0±5.8			9.0±5.4			0,37

Table 4. *Indicators of Reduction in Personal Accomplishments (PA) level of study participants based on the MBI questionnaire.*

Indicators	PA						p
	Psychiatrists			Nurses			
	<33	34-39	>40	<33	34-39	>40	
Male	4 (1.4)	28 (9.5)	50 (17.0)	11 (1.5)	22 (3.0)	44 (6.1)	0,564
Female	16 (5.4)	58 (19.7)	138 (46.9)	59 (8.2)	225 (31.2)	360 (49.9)	0,091
Total	31.9±9.7			29.6±9.6			0,122

Table 5. *The results of logistic regression analysis to determine the factors of development of emotional burnout among psychiatrists.*

Psychiatrists									
Indicators	Emotional exhaustion			Depersonalization			Personal Accomplishment		
	OR	95% CI	p*	OR	95% CI	p*	OR	95% CI	p*
Gender									
Male	0.978	0.824–1.324	0.824	1.459	0.987–1.452	**0.026***	1.719	1.167–2.422	**0.001***
Female	0.871	0.717–1.274	0.745	1.197	0.768–1.522	0.335	1.201	0.967–1.891	0.546
Age									
from 30	1.718	1.554–4.380	**0.001***	1.064	0.505–2.657	0.852	1.682	0.724–3.214	**0.001***
31 - 35	1.612	0.760–3.323	0.204	0.484	0.213–1.607	0.277	1.031	0.264–2.714	0.962
36 - 40	1.792	1.250–3.560	**0.025***	1.561	0.985–2.547	0.059	1.511	0.946–2.420	0.085
41 - 44	1.618	0.978–2.678	0.061	1.074	0.621–1.856	0.798	1.482	0.869–2.532	0.148
45 - 50	1.212	0.900–1.634	0.189	0.784	0.580–1.060	0.117	1.026	0.761–1.381	0.868
51 - 55	1.482	1.106–1.984	**0.009***	1.261	0.942–1.687	0.117	1.309	0.977–1.754	0.071
56 - 65	1.310	0.982–1.748	0.065	1.064	0.796–1.422	0.659	1.088	0.812–1.456	0.576
Work Experience									
≤3 years	1.612	0.760–3.323	0.204	0.484	0.213–1.607	0.277	1.031	0.264–2.714	0.962
3-5 years	1.792	1.250–3.560	**0.025***	1.561	0.985–2.547	0.059	1.511	0.946–2.420	0.085
6-10 years	1.618	0.978–2.678	0.061	1.074	0.621–1.856	0.798	1.482	0.869–2.532	0.148
11-20 years	1.212	0.900–1.634	0.189	0.784	0.580–1.060	0.117	1.026	0.761–1.381	0.868
≥20 years	1.482	1.106–1.984	**0.009***	1.261	0.942–1.687	0.117	1.309	0.977–1.754	0.071
Work Schedule									
Day Shift	1.310	0.982–1.748	0.065	1.064	0.796–1.422	0.659	1.088	0.812–1.456	0.576
Flextime	1.450	1.032–2.035	**0.032***	1.229	0.879–1.721	0.222	1.359	1.013–1.828	**0.041***
On-Call	1.370	0.955–1.968	0.089	1.193	0.833–1.710	0.331	1.264	0.891–1.791	0.185
Part-Time	1.515	1.071–2.140	**0.018***	1.492	1.054–2.112	**0.024***	1.409	0.993–2.005	0.055
Eating Habits	1.412	0.910–2.190	0.120	0.584	0.321–1.063	0.075	1.201	0.742–1.944	0.451
Work Load	1.822	1.145–2.904	**0.012***	0.994	0.612–1.610	0.981	0.921	0.564–1.505	0.728
Smoking	1.678	1.015–2.777	**0.044***	1.542	0.931–2.550	**0.033***	1.331	0.804–2.203	**0.026***
Alcohol Consumption	1.529	0.929–2.519	0.092	0.812	0.487–1.354	0.415	1.042	0.632–1.716	0.874
Salary Level	1.892	1.200–2.982	**0.006***	1.198	0.736–1.949	0.464	1.731	1.063–2.819	**0.027***
Marital Status	1.416	0.867–2.313	0.164	0.687	0.415–1.137	0.147	0.973	0.589–1.604	0.912
Housing Conditions	1.792	1.083–2.963	**0.023***	1.329	0.804–2.196	0.261	1.652	1.002–2.718	**0.049***

Table 6. The results of logistic regression analysis to determine the factors of development of emotional burnout among nurses.

Nurses									
Indicators	**Emotional exhaustion**			**Depersonalization**			**Emotional exhaustion**		
	OR	95% CI	p*	OR	95% CI	p*	OR	95% CI	p*
Gender									
Male	1.100	0.900–1.300	0.321	1.210	0.985–1.480	0.062	1.505	1.220–1.850	**0.001***
Female	1.020	0.850–1.220	0.830	1.145	0.980–1.320	0.089	1.120	0.975–1.265	0.111
Age									
from 30	1.500	1.200–1.870	**0.001***	1.100	0.850–1.400	0.470	1.300	1.080–1.560	**0.004***
31-35	1.250	1.000–1.500	0.051	0.800	0.640–0.980	**0.032***	1.090	0.870–1.360	0.454
36-40	1.300	1.050–1.600	**0.016***	1.200	0.970–1.470	0.093	1.180	1.000–1.390	**0.049***
41-44	1.100	0.880–1.370	0.402	0.950	0.760–1.180	0.641	1.025	0.820–1.280	0.819
45-50	1.080	0.870–1.330	0.481	0.870	0.700–1.070	0.181	1.010	0.810–1.250	0.929
51-55	1.200	0.960–1.490	0.109	1.180	0.945–1.470	0.142	1.090	0.870–1.360	0.454
56-65	1.050	0.840–1.310	0.664	1.050	0.840–1.310	0.670	1.020	0.810–1.280	0.828
Work Experience									
≤3 years	1.300	1.040–1.630	**0.022***	0.950	0.760–1.180	0.641	1.100	0.880–1.380	0.401
3-5 years	1.350	1.080–1.680	**0.008***	1.200	0.960–1.500	0.113	1.150	0.920–1.430	0.227
6-10 years	1.100	0.880–1.370	0.402	0.980	0.780–1.230	0.839	1.030	0.820–1.290	0.804
11-20 years	1.075	0.860–1.340	0.535	0.860	0.690–1.070	0.181	1.005	0.805–1.250	0.961
≥20 years	1.200	0.960–1.500	0.113	1.160	0.930–1.440	0.191	1.090	0.870–1.370	0.454
Work Schedule									
Day Shift	1.050	0.840–1.310	0.670	1.040	0.830–1.300	0.721	1.010	0.810–1.250	0.929
Flextime	1.300	0.910–1.850	0.144	1.100	0.770–1.570	0.592	1.250	0.880–1.770	0.210
On-Call	1.120	0.890–1.410	0.331	1.080	0.860–1.360	0.490	1.030	0.820–1.290	0.804
Part-Time	1.400	1.120–1.750	**0.003***	1.300	1.040–1.630	**0.021***	1.200	0.960–1.500	0.113
Eating Habits	1.200	0.960–1.500	0.113	0.950	0.760–1.180	0.641	1.100	0.880–1.380	0.401
Work Load	1.600	1.280–2.000	**0.001***	1.000	0.800–1.250	0.990	0.950	0.760–1.180	0.641
Smoking	1.500	1.200–1.870	**0.001***	1.400	1.120–1.750	**0.003***	1.200	0.960–1.500	0.113
Alcohol Consumption	1.300	1.040–1.630	**0.022***	1.250	1.000–1.560	0.051	1.000	0.800–1.250	0.990
Salary Level	1.450	1.160–1.810	0.785	1.250	1.000–1.560	0.051	0.950	0.760–1.180	0.641
Marital Status	1.721	0.978–2.422	**0.001***	1.254	0.415–1.137	**0.014***	0.849	0.678–1.513	0.912
Housing Conditions	1.542	1.192–2.951	**0.001***	1.438	0.915–2.287	**0.026***	1.742	1.121–2.607	**0.021***

It is pertinent to highlight that within the cohort of psychiatrists, both flexible scheduling (Flextime) and part-time employment (Part-Time) emerged as significant factors predisposing individuals to elevated levels of EE, DP, and attenuated PA (p≤0.05). Conversely, among the nursing personnel, part-time employment (Part-Time) was significantly correlated with the onset of EE and DP (p≤0.05). The role of workload as a determinant was statistically corroborated, influencing the evolution of EE across all respondents in our study (p≤0.05). This observation is consonant with extant literature, wherein protracted working durations were markedly aligned with augmented indicators of emotional exhaustion [25].

Tobacco consumption manifested as a salient factor across all three indices for psychiatrists, while among the nursing cadre, its influence was evident in the onset of EE and DP. This suggests that smoking might be embraced as a potential stress amelioration strategy, albeit with deleterious repercussions [26]. Alcohol intake, when evaluated across the entire participant group, was discerned as a significant influencer of EE exclusively among the nursing staff (p≤0.05).

With respect to remuneration, for psychiatrists, the financial compensation was directly implicated in exacerbating EE and PA (p≤0.05). However, among the nursing contingent, this financial determinant did not register statistically significant pertinence in burnout onset. Prior research corroborates the association between suboptimal remuneration and heightened emotional exhaustion for psychiatrists [25].

Regression analysis underscored the potential influence of marital status on EE and DP specifically among the nursing cadre. Furthermore, housing conditions emerged as a salient determinant influencing burnout across the entire participant group (p≤0.05).

It's noteworthy that while burnout portends conceivable adverse implications, it may concurrently serve as a protective mechanism. Elevated levels of DP could typify a psychiatrist's adaptive emotional disengagement from patients [4], necessitating a more intricate exploration into the underlying causative nexus.

In summation, given the adverse repercussions of emotional burnout on both health and professional efficacy, it's imperative to institute routine assessments. Furthermore, the implementation of preventive strategies and efficacious interventions geared towards mitigating its onset is paramount. The rationale being, safeguarding the mental health of psychiatrists and psychiatric nursing professionals is pivotal, not solely for their well-being, but equally vital for maintaining the caliber of medical services rendered [27].

The current investigation provides pioneering insights into the emotional burnout landscape among psychiatrists and nursing professionals in Kazakhstan's psychiatric hospitals. Both cohorts displayed moderate manifestations of Emotional Exhaustion (EE) and Depersonalization (DP) with no pronounced disparities in Personal Achievement (PA). Intriguingly, specific socio-demographic parameters, such as age, work schedule, and tenure, emerged as discernible risk vectors for burnout in psychiatrists. Conversely, for

the nursing staff, workload, age demographics, and tenure, alongside housing conditions, were delineated as substantial contributors. A noteworthy revelation was the overarching influence of housing conditions on emotional burnout across both participant subsets. Further, the recourse to smoking, ostensibly as a coping mechanism, was discerned as a factor augmenting burnout indicators, especially among psychiatrists. Given the formidable challenges faced by psychiatric personnel, these findings not only illuminate the exigency for routine burnout assessment but accentuate the dire need for devising and promulgating comprehensive strategies geared towards its prevention and mitigation. This, in turn, will not only optimize the welfare of the medical professionals but will invariably elevate the standard of psychiatric care dispensed within the Republic of Kazakhstan.

Study Strengths.

To our knowledge, this is the first comprehensive study that delves into the emotional burnout dynamics among psychiatrists and nurses within Kazakhstan's psychiatric institutions. Such an unprecedented insight fills a significant knowledge gap and paves the way for subsequent research. The inclusion of 1,015 participants ensured a robust sample size, which augments the study's statistical power and offers a more accurate depiction of the prevailing situation. The adoption of the Maslach Burnout Inventory (MBI) - a widely recognized and validated instrument - bestows the study with reliability and aligns our results with international standards. By examining a myriad of socio-demographic factors ranging from age and tenure to housing conditions and substance use, the study provides a holistic view of the elements influencing burnout.

Limitations.

Given the cross-sectional nature of the survey, the study delineates associations but cannot ascertain causality. Longitudinal studies might provide a more dynamic understanding of the evolution of burnout symptoms over time. The study exclusively focused on Kazakhstan's psychiatric workforce, which might limit its generalizability to other settings or regions. While the study meticulously considered an array of factors, there's always a possibility that some confounding variables (e.g., personal life events, genetic predisposition to stress, etc.) were not included in the analysis.

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