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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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Содержание:

A STUDY ON THE RELATIONSHIP BETWEEN TYPE A PERSONALITY, EMPLOYMENT STRESS, AND MENTAL HEALTH OF RESIDENT PHYSICIANS IN TERTIARY HOSPITALS IN NANCHONG, CHINA

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Abstract.

Objective: To explore the relationship between Type A personality, employment stress, and mental health among resident physicians in tertiary hospitals in Nanchong, providing a research foundation for future targeted interventions to regulate employment stress and improve their mental health.

Methods: A total of 65 resident physicians from tertiary hospitals in Nanchong, Sichuan, were recruited for this study. The General Health Questionnaire-20 (GHQ-20), Type A Behavior Pattern (TABP), University Student Employment Stress Scale, Medical Student Employment Stress Questionnaire, and Employment Intentions Survey for Medical University Students were used to assess the participants. Based on the GHQ-20 scores, the residents were divided into a positive group and a negative group to analyze the relationship between Type A personality, employment stress, and mental health.

Results: The results of this study did not show a significant correlation between Type A personality, employment stress, and mental health among resident physicians in tertiary hospitals in Nanchong ($P > 0.05$).

Conclusion: This study did not confirm a significant relationship between Type A personality, employment stress, and mental health among resident physicians in tertiary hospitals in Nanchong. This may be due to the small sample size and insufficient assessment methods. Future research should consider increasing the sample size and designing more comprehensive and detailed assessment systems to further explore the factors influencing the mental health of resident physicians.

Key words. Resident physicians, type A personality, employment stress, mental health, tertiary hospitals.

Introduction.

Standardized residency training programs in China (referred to as "residency training") refers to the systematic and standardized training that resident physicians undergo at recognized training bases to improve their job competence before becoming licensed medical practitioners [1,2]. This stage is a critical period during which resident physicians transition from medical students to qualified doctors, and it is also a time when they hold both student and clinical physician roles [3]. During the training phase, resident physicians not only face work pressures in clinical settings but also bear the burden of learning, exams, and the pressure related to employment after training [4,5]. Based on the current market economy and the background of independent job selection, factors such as differences in resource allocation and salary treatment between hospitals of varying levels, as well as the increasing number of resident physicians year by year, have made the employment situation for resident physicians increasingly challenging [6]. In addition, the emergence of the COVID-19 pandemic in 2019 not only placed demands on the professional abilities of clinical doctors but also required them to possess a certain level of clinical adaptability [7,8]. As a result, some hospitals have become more inclined to hire candidates with work experience, further increasing the employment pressure faced by resident physicians.

American scholar H.S. Friedman, in his clinical research on heart disease patients, pointed out that human personalities can generally be divided into Type A and Type B [9]. Type A individuals typically exhibit a strong drive, competitive nature, and a sense of time urgency, while Type B individuals are more relaxed, easy-going, and calm in the face of challenges. Therefore, when facing future employment, resident physicians with Type A personalities may place high expectations on themselves and push themselves to achieve their goals at all costs, leading to significant psychological and physical strain.

Resident physicians, as key medical talents who play an important role in improving healthcare service quality and patient safety, optimizing the talent structure of the healthcare workforce, and promoting medical research and innovation, have psychological health issues that cannot be overlooked. Therefore, it is crucial to clarify the distribution of Type A personality among resident physicians in tertiary hospitals in Nanchong, and to conduct a detailed investigation of their sources of employment pressure, employment intentions, and psychological health levels. Analyzing the relationship between Type A personality, employment pressure, and psychological health among resident physicians can provide an important research foundation for subsequent targeted adjustments to reduce their employment pressure and improve their psychological well-being.

Subjects and Methods.

Study Subjects: In January 2025, a total of 65 resident physicians from tertiary hospitals in Nanchong participated in this study voluntarily, and relevant questionnaires were administered. A total of 60 valid questionnaires were collected, resulting in an effective response rate of 92.31%. Among the participants, 27 were male and 33 were female. This study has been approved by the Ethics Committee of the Affiliated Hospital of North Sichuan Medical College (Ethical Approval No: 2024ER729-1).

Based on the results of the GHQ-20, participants with a total score of ≥6 were categorized into the positive group (indicating psychological health issues), while the remaining participants were classified into the negative group. The GHQ was developed

by Goldberg, and this study adopted the revised version by Li et al. [10]. This questionnaire consists of 20 items: Items 1–9 assess self-affirmation, Items 10–15 assess depression, and Items 16–20 assess anxiety. A score of 1 is given for "Yes," and 0 for "No." The self-affirmation subscale is reverse scored. The total score ranges from 0 to 20, with higher scores indicating poorer psychological health. The Cronbach's alpha coefficient of the full scale was 0.82, with the subscales for self-affirmation, depression, and anxiety showing Cronbach's alpha coefficients of 0.75, 0.63, and 0.64, respectively, demonstrating good internal consistency.

Research Methods.

Basic Information Questionnaire:

A basic information questionnaire was used to collect demographic data of the study participants, including gender, age, academic year, and whether they are the only child in their family.

TABP:

The Chinese version of the TABP scale was used to assess the personality type of resident physicians. The scale, developed by the National Collaborative Group on Psychosomatic Medicine, consists of 60 items, divided into three sections: Time Hurry (TH), Competitive Hostility (CH), and Lie (L) [11]. TH reflects characteristics such as time urgency, feeling rushed, and the tendency to act quickly; CH reflects characteristics of competitiveness, hostility, and impatience; L is a validity check for the authenticity of responses, with scores ≥7 indicating an invalid questionnaire. The sum of TH and CH scores is used as the personality score, with a total score of 27 indicating an extreme middle type, scores above 27 indicating Type A, and scores below 27 indicating Type B. The Cronbach's alpha coefficient for this scale is 0.66.

Employment Pressure Source Scale:

The University Student Employment Pressure Source Scale and the Medical Student Employment Pressure Survey Questionnaire were used to assess the employment pressure of resident physicians. The University Student Employment Pressure Source Scale was developed by Li Chao from Harbin Normal University in China. It is primarily used to assess the employment pressure experienced by university students. The scale consists of five dimensions: school factors, social factors, family factors, personal conditions, and employment location. Each item is scored on a five-point scale: 1 for "none," 2 for "mild," 3 for "moderate," 4 for "severe," and 5 for "very severe." The higher the score, the greater the pressure. The Cronbach's alpha coefficient for this scale is 0.934. The "Medical Student Employment Pressure Survey Questionnaire" was developed by Du Tianjiao from China Medical University to assess employment pressure among medical students in China. It consists of 42 items covering seven dimensions: social environment, school influence, family support, personal qualities, supply and demand of the profession, job requirements, and career guidance. Each item is scored on a five-point scale, where 1 indicates "no pressure," 2 indicates "mild," 3 indicates "moderate," 4 indicates "severe," and 5 indicates "very severe." The higher the score, the greater the employment pressure. The Cronbach's alpha coefficient for this scale is 0.940.

Employment Intentions Survey for Medical University Students:

The study used the "Employment Intentions Survey for Medical University Students," compiled by Qi Tingting from Shandong University, China, to investigate the employment intentions of resident physicians. The survey covered several aspects, including expected starting monthly salary, existence of a career plan, challenges in job searching, understanding of employment policies, and willingness to work in grassroots areas, among other topics.

Statistical Analysis:

Data were processed using IBM SPSS Statistics 26 software, and graphs were generated using GraphPad Prism 10.1.2 software. The Shapiro-Wilk test was used to assess whether quantitative data followed a normal distribution. For normally distributed data, descriptive statistics were presented as mean ± standard deviation (mean ± SD), and between-group comparisons were made using independent sample t-tests. For non-normally distributed data, the median (interquartile range) was used, and the Mann-Whitney U test was employed for between-group comparisons. Categorical data were described using frequencies (percentages), and between-group comparisons were performed using the χ^2 test. The relationship between Type A personality, employment stress, and mental health of resident physicians was analyzed using binary logistic regression, with a two-sided P value of < 0.05 considered statistically significant.

Results and Analysis.

Questionnaire Survey:

Basic Information Questionnaire: A total of 60 valid questionnaires were collected in this study, with 34 participants in the positive group (GHQ-20 ≥ 6) and 26 participants in the negative group (GHQ-20 < 6). The average age of the positive group was 25.12 ± 1.65 years, with 16 males and 18 females; the average age of the negative group was 24.23 ± 1.03 years, with 11 males and 15 females. A detailed comparison of the basic information between the two groups is shown in Table 1. According to the data in Table 1, there was a statistically significant age difference between the two groups ($P < 0.05$), but no significant differences in gender, grade, or family residence were observed.

TABP:

The scale was completed by 60 residency physicians, among whom 12 had Type A personality, 47 had Type B personality, and 1 had an extreme intermediate personality. In the positive group, 23.5% of the residency physicians had Type A personality, which was higher than the 15.4% in the negative group. However, the difference between the two groups was not statistically significant (Table 2).

Employment Stress Source Scale:

Analysis of the results of the university student employment stress source scale for 60 residency physicians showed no significant statistical differences between the two groups in total score as well as in the five aspects of employment stress: school factors, social factors, family factors, personal conditions, and job location (Table 3). The results of the medical student

Table 1. *Basic Demographic Characteristics.*

Characteristic		Overall	Positive Group (n=34)	Negative Group (n=26)	P-value
Age		24.73±1.47	25.12±1.65	24.23±1.03	0.019
Gender					0.714
	Male	27 (45.0%)	16 (47.1%)	11 (42.3%)	
	Female	33 (55.0%)	18 (52.9%)	15 (57.7%)	
Grade					0.492
	1st Year	31 (51.7%)	18 (52.9%)	13 (50.0%)	
	2nd Year	19 (31.7%)	9 (26.5%)	10 (38.5%)	
	3rd Year	10 (16.7%)	7 (20.6%)	3 (11.5%)	
Family Residence					1.000
	Rural	26 (43.3%)	15 (44.1%)	11 (42.3%)	
	Small/Mid-size City	28 (46.7%)	16 (47.1%)	12 (46.2%)	
	Large City	6 (10.0%)	3 (8.8%)	3 (11.5%)	
Only Child					0.651
	Yes	28 (46.7%)	15 (44.1%)	13 (50.0%)	
	No	32 (53.3%)	19 (55.9%)	13 (50.0%)	
Father's Education					0.768
	No Education	1 (1.7%)	0 (0.0%)	1 (3.8%)	
	Primary School	14 (23.3%)	9 (26.5%)	5 (19.2%)	
	Middle School	18 (30.0%)	10 (29.4%)	8 (30.8%)	
	High School	18 (30.0%)	9 (26.5%)	9 (34.6%)	
	University	9 (15.0%)	6 (17.6%)	3 (11.5%)	
Mother's Education					0.804
	No Education	2 (3.3%)	1 (2.9%)	1 (3.8%)	
	Primary School	15 (25.0%)	9 (26.5%)	6 (23.1%)	
	Middle School	19 (31.7%)	11 (32.4%)	8 (30.8%)	
	High School	19 (31.7%)	9 (26.5%)	10 (38.5%)	
	University	5 (8.3%)	4 (11.8%)	1 (3.8%)	
Family Economic Status					0.621
	Very Poor	5 (8.3%)	2 (5.9%)	3 (11.5%)	
	Poor	6 (10.0%)	3 (8.8%)	3 (11.5%)	
	Average	42 (70.0%)	26 (76.5%)	16 (61.5%)	
	Better	7 (11.7%)	3 (8.8%)	4 (15.4%)	

Table 2. *Personality Types of Positive and Negative Groups.*

Personality Type	Positive Group	Negative Group	Total
Type A	8 (23.5%)	4 (15.4%)	12
Type B	25 (73.5%)	22 (84.6%)	47
Extreme Intermediate	1 (2.9%)	0 (0.0%)	1
Total	34	26	60

Table 3. *Employment Stress of University Students in Positive and Negative Groups.*

Factor	Positive Group (n=34)	Negative Group (n=26)	P-value
School Factors	13.65±3.51	13.04±3.91	0.529
Social Factors	15.62±3.45	16.04±3.49	0.643
Family Factors	9.15±3.14	9.35±3.14	0.808
Personal Conditions	21.76±6.23	20.08±5.84	0.290
Employment Location	8.32±2.82	7.73±2.46	0.397
Total Score	68.50±15.54	66.23±14.68	0.568

Table 4. *Employment Stress of Medical Students in Positive and Negative Groups.*

Factor	Positive Group (n=34)	Negative Group (n=26)	P-value
Social Environment	20.26±4.50	19.31±5.32	0.454
School Influence	18.85±5.31	18.35±5.04	0.709
Family Support	15.97±4.43	16.27±5.00	0.807
Personal Quality	16.91±4.13	15.65±4.66	0.274
Supply and Demand in Profession	17.15±3.64	16.12±3.90	0.296
Job Requirements	18.24±4.45	17.81±4.03	0.702
Career Guidance	13.68±4.12	12.92±3.76	0.469
Total Score	121.06±26.47	116.42±28.23	0.516

Table 5. *Logistic Regression Analysis of Type A Personality, Employment Stress, and Mental Health in Residents.*

Variable	Coefficient	Standard Error	Wald Value	P-value	OR (95%CI)	Power (1-β)
Type A Personality	-0.512	0.757	0.457	0.499	0.599 (0.136~2.643)	0.112
University Student Employment Stress	-0.009	0.037	0.055	0.815	0.991 (0.923~1.066)	0.076
Medical Student Employment Stress	0.009	0.019	0.203	0.652	1.009 (0.971~1.048)	0.120
Constant	0.230	1.653	0.019	0.889		

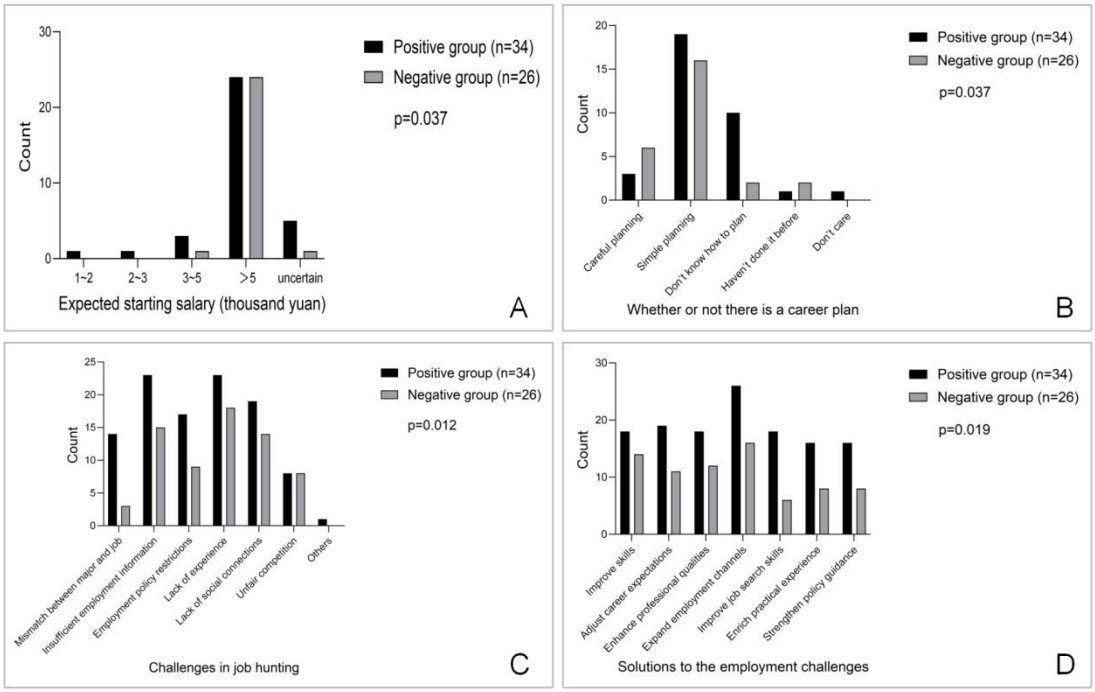

Figure 1. *The survey results on employment intentions for the positive group and negative group.*

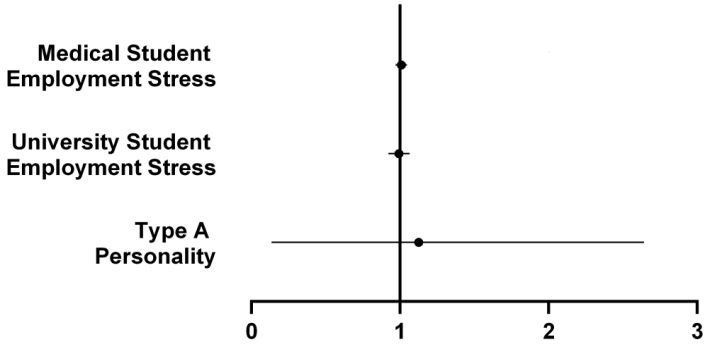

Figure 2. *Forest Plot of Logistic Regression Analysis on Type A Personality, Employment Stress, and Mental Health.*

employment stress questionnaire were consistent with these findings, with no significant differences between the two groups in total score or in the seven aspects of employment stress: social environment, school influence, family support, personal quality, supply and demand of the profession, job requirements, and employment guidance (Table 4).

Employment Intentions Survey for Medical University Students:

Analysis of the 60 returned medical student employment intentions surveys revealed the following findings: When asked, "What is your expected starting monthly salary if you choose to work?" 70.6% of the positive group and 92.3% of the negative group indicated an expected starting salary of over 5000 yuan, with a statistically significant difference (Figure 1A, P = 0.037). When asked, "During your time in school, did you have any plans for your career?" 29.4% of the positive group and 7.7% of the negative group responded with "I don't know how to plan," and this difference was statistically significant (Figure 1B, P = 0.037). When asked, "What do you think might be a hindrance in your job search?" 41.2% of the positive group and 11.5% of the negative group believed that "the profession is not aligned with their qualifications or the professional field is too narrow," with a statistically significant difference (Figure 1C, P = 0.012). When asked, "What do you think is the solution to the current employment difficulties for college students?" 52.9% of the positive group and 23.1% of the negative group believed that "improving personal job search skills" is the solution, and this difference was statistically significant (Figure 1D, P = 0.019).

Relationship Between A-Type Personality, Employment Pressure, and Mental Health in Resident Physicians:

A binary logistic regression analysis was conducted with the group (positive, negative) as the dependent variable, and personality type (A-type, non-A-type), university student employment pressure, and medical student employment pressure as independent variables to explore the relationship between A-type personality, employment pressure, and mental health in resident physicians. According to the analysis results and forest plot, A-type personality (OR = 0.599, 95% CI: 0.136–2.643, P = 0.499), university student employment pressure (OR = 0.991, 95% CI: 0.923–1.066, P = 0.815), and medical student employment pressure (OR = 1.009, 95% CI: 0.971–1.048, P = 0.652) were not significantly associated with the mental health of resident physicians (Table 5 and Figure 2). Therefore, A-type personality and employment pressure are not independent factors affecting the mental health of resident physicians.

Discussion.

Residents in standardized residency training programs, as a special group balancing both academic and clinical responsibilities, face psychological issues that not only affect their personal physical and mental health but also impact the quality of medical services and patient safety. Several studies have shown that residents experience negative emotions such as anxiety and depression when facing employment [12,13]. In recent years, the government has increased support for primary healthcare services, resulting in more employment opportunities for residents in county hospitals and medical institutions in remote areas [14]. However, the competition for jobs in large cities and top-tier hospitals remains intense [15]. Moreover, the impact of the COVID-19 pandemic has led some hospitals to raise the employment threshold for residents and, to some extent, reduce salary levels, making the employment situation even more challenging and increasing job-related stress [16,17]. The personality classification theory proposed by American scholar H.S. Friedman suggests that individuals with Type A personality, due to their strict self-expectations, may be more likely to experience increased psychological burden that is difficult to alleviate [9]. Therefore, residents with Type A personalities may have lower levels of psychological health. This study, through a survey of residents from tertiary hospitals in Nanchong, aims to explore the relationship between Type A personality, employment pressure, and psychological health. The results show that there were no statistically significant differences between the positive and negative groups in terms of Type A personality and employment pressure, and binary logistic regression analysis showed no significant correlation between Type A personality, employment pressure, and psychological health.

When analysing the basic information of the residents, the results showed that the positive group was older than the negative group, and the difference was statistically significant. During the first year of training, residents are in the learning phase and undertake fewer clinical tasks. However, as the training progresses, the increasing clinical responsibilities and the pressure of qualifying exams often lead to more negative emotions [18]. This may explain why the positive group is older. In addition, the study by Tan et al. [19] indicates that employment pressure can lead to symptoms such as anxiety and depression in medical postgraduate students, with third-year students perceiving the highest level of employment pressure. Becker et al. pointed out that the tendency of Type A behavior to pursue high efficiency, which creates excessive time pressure, may lead to negative effects such as anxiety, impacting psychological health [20]. The results are not consistent with this study, possibly due to the small sample size and the limited geographical scope of this study. Interestingly, our study found that, during the intergroup comparison, the P-value for self-related factors was significantly smaller compared to other factors leading to increased employment pressure, suggesting that the greater employment pressure for residency doctors may stem more from their own lack of abilities. Additionally, in the employment intention survey, 52.9% of the positive group of residency doctors considered "improving job-seeking skills" as the solution to the current employment difficulties for college students, while only 23.1% of the negative group thought the same, with a statistically significant difference. Furthermore, in terms of career planning, nearly one-third of the positive group residency doctors stated that they "did not know how to plan," which may be influenced by their negative emotions impacting self-recognition and confidence, thereby lowering decision-making abilities [21,22]. When asked about their expected starting monthly salary, 70.6% of the positive group residency doctors hoped for a starting salary above 5,000 yuan, significantly lower than the 92.3% in the negative group. Negative emotions such as anxiety and depression may reduce the residency doctors' self-efficacy, causing them to

underestimate their abilities and avoid setting higher goals, which may explain this phenomenon [23,24].

Based on the results of this study, future resident physicians should not only focus on improving their own skills but also expand their job search channels and understand market demands. At the same time, departments should regularly organize information sessions to enhance the professional identity of resident physicians.

Limitations.

The limitations of this study are as follows: (1) The small sample size and the study's focus on the Nanchong region of Sichuan, which affects the external validity of the results; (2) The research subjects did not cover all medical disciplines; (3) The questionnaires were distributed through the Wenjuanxing mini-program via QR codes, meaning the results may not fully reflect the true thoughts of the participants.

Conclusion.

This study did not confirm a significant correlation between the Type A personality, employment stress, and mental health of resident physicians in tertiary hospitals in the Nanchong area. This result may be due to the small sample size and insufficient evaluation methods. Future research should consider increasing the sample size and designing a more comprehensive and detailed evaluation system to further explore the factors affecting the mental health of resident physicians.

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