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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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AN EMPIRICAL STUDY ON THE ASSOCIATION BETWEEN ASPIRATION INDEX AND ACADEMIC PERFORMANCE AMONG PREVENTIVE MEDICINE STUDENTS

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Abstract.

Objective: The concept of low-aspiration lying flatism has gained wide popularity and acceptance among university students, which may negatively affect their academic development and value formation. This study aimed to explore the association between the aspiration index and academic performance among preventive medicine students.

Methods: A total of 224 preventive medicine students enrolled in 2021 at Wannan Medical College were selected as participants. Data were collected via a questionnaire survey. The aspiration index scale was used to assess students' aspiration index, which were categorized into intrinsic and extrinsic goals. Overall assessment scores were used to measure academic performance. Linear regression model was employed to analyze the relationship between aspiration index and academic performance.

Results: We obtained 213 valid questionnaires, including 82 from male students. There was a positive association between aspiration index and overall assessment scores (β = 0.05, 95% CI: 0.03-0.07). In separate regression analyses, both intrinsic goals (β = 0.09, 95% CI: 0.06-0.12) and extrinsic goals (β = 0.06, 95% CI: 0.02-0.09) positively predicted overall assessment scores. However, when intrinsic and extrinsic goals were included simultaneously in the regression model, only intrinsic goals were significantly positively associated with overall assessment scores (β = 0.09, 95% CI: 0.05-0.13), while extrinsic goals showed no significant association (β = 0.01, 95% CI: −0.04-0.05).

Conclusion: The findings suggested that educators should focus on enhancing students' intrinsic goals rather than overemphasizing extrinsic goals. Guiding students to pursue intrinsic goals can help foster positive learning motivation and improve the quality of talent cultivation.

Key words. Preventive medicine, aspiration, academic performance.

Introduction.

Since 2021, the concept of lying flatism has gained significant popularity and resonance among Chinese youth. It represents a form of passive resistance to the rat race and societal pressures, reflecting dissatisfaction with intense competition and stress [1,2]. Lying-flat is increasingly recognized as a global phenomenon, not limited to China. In 2023, among young people aged 18-24, the proportion of those who have adopted a lying-flat attitude (not in employment, education or training, abbreviated as "NEET") reached 31.1% in Türkiye, followed by 27.9% in Costa Rica and 27.3% in Colombia [3]. University students exhibit an even higher prevalence of this phenomenon. A survey conducted across 23 universities in China revealed that 87.9% of students demonstrated lying-flat attitude [4]. Influenced by this cultural trend, contemporary university students have shown a diminished striving spirit and a lifestyle characterized by low aspirations and reduced goal-oriented behavior [5]. This low-aspiration lying flatism among university students may negatively affect their academic engagement and value orientation [6].

Aspirations, defined as an individual's life goals, play a crucial role in shaping lifestyle, daily behaviors, and the accumulation of wealth [7]. According to self-determination theory, aspirations can be divided into two factors: intrinsic goals and extrinsic goals. Intrinsic goals typically refer to life aspirations that are congruent with basic human psychological needs, including self-acceptance, affiliation, a sense of community, and physical health. In contrast, extrinsic goals primarily focus on obtaining external rewards or recognition, including financial success, physical attractiveness, and social approval. Extrinsic goals often fail to bring genuine inner satisfaction. They are not ultimate ends in themselves but merely means to achieve other ends or substitutes for unmet psychological needs [7,8]. Therefore, Kasser and Ryan have recommended that individuals who prioritized intrinsic goals are more likely to experience greater well-being [7]. Furthermore, prior research indicated that the pursuit of intrinsic goals was associated with greater autonomous motivation, while the pursuit of extrinsic goals tended to diminish it [9].

The COVID-19 pandemic has exposed a talent gap in China's public health system. As the core discipline underpinning public health, the quality of preventive medicine education directly affects national epidemic response capabilities. However, admission scores for preventive medicine programs are generally significantly lower than those for clinical medicine, and graduates often face lower salaries and diminished career fulfillment [10,11]. This disparity in educational investment and professional return has triggered a crisis of professional identity. A recent study revealed that preventive medicine students reported the lowest levels of professional identity when compared to their counterparts in clinical medicine, dentistry, and nursing [12]. In this context, assessing the aspirations index of preventive medicine students and examining its impact on academic performance is crucial for formulating strategies to enhance student motivation and improve the quality of talent cultivation in the field.

Materials and Methods.

Study participants and design:

The participants of this study were 224 undergraduate students majoring in preventive medicine from the 2021 cohort at Wannan Medical College.

Data were collected via a questionnaire at the end of 2023-2024 academic year. The questionnaire consisted of general

information (e.g., student ID, sex, and age) and the aspiration index scale. To comprehensively assess students' academic performance over the academic year, overall assessment scores were used as the indicator of academic achievement. The aspiration index was matched with academic performance data using student ID.

Aspiration index scale and overall assessment scores:

In this study, the aspiration index scale is the Chinese version translated and validated by Tang and colleagues, based on the original English scale developed by Kasser and Ryan. The scale has demonstrated good reliability and validity among university students, with a Cronbach's α of 0.92 and χ^2/df ratio of 4.17 [13].

The aspiration index scale, a 7-point Likert scale, consists of two major factors: intrinsic goals (including relationship, community, personal growth, and health) and extrinsic goals (including wealth, image, and fame). It comprises seven dimensions, each containing five items, for a total of 35 items. The sum of the scores for the five items within each dimension represents the dimension score. The scores for the intrinsic and extrinsic goals are calculated by summing the corresponding dimension scores. The overall aspiration index is the sum of intrinsic and extrinsic goals, with higher scores indicating stronger aspirations.

Academic performance was assessed using the overall assessment scores, which was calculated as a weighted composite of the following components: examination performance (72%), ethical conduct (8%), social practice (4%), arts and cultural activities (4%), student leadership (4%), sports and physical activities (4%), and scientific research (4%). The final score, ranging from 0 to 100, served as the outcome variable.

Statistical analysis:

Continuous variables were described using the mean ± standard deviation, while categorical variables were described using frequency and percentage. Independent-samples t-tests were used to compare gender differences in aspiration index scores and overall assessment scores. Pearson correlation analysis was employed to examine the relationship between aspiration index and overall assessment scores. We conducted a two-stage analysis using linear regression models to examine the association between the aspiration index and overall assessment scores, controlling for sex as a covariate. In the first stage, separate regression analyses were performed, where the aspiration index, internal goals, external goals, and their seven sub-dimensions were individually included in the regression models to evaluate their independent contributions to academic performance. In the second stage, both internal and external goals were simultaneously included in the model to assess their comparative effects on overall assessment scores. Statistical analysis was performed using R version 4.4.1. A two-sided P of ≤ 0.05 was considered statistically significant.

Results.

Demographic characteristics of participants:

A total of 224 students majoring in preventive medicine participated in the survey, and 213 valid questionnaires were collected. Among the 213 students, 82(38.50%) were male and the average age was 20.77 ± 0.68 years.

Gender differences in aspiration index and overall assessment scores:

The results of the aspiration index and overall assessment scores were presented in Table 1. The dimension scores were as follows: relationship (28.92 ± 4.73), community (26.14 ± 5.19), personal growth (29.66 ± 4.10), physical health (31.64 ± 4.11), wealth (28.06 ± 5.12), image (23.06 ± 5.66), and fame (20.15 ± 6.21). The scores for the intrinsic and extrinsic goals were 116.36 ± 15.26 and 71.26 ± 14.42, respectively. The total aspiration index scores were 187.62 ± 26.27. No statistically significant gender differences were found in any of the dimension scores or the aspiration index scores ($P > 0.05$). However, in the overall assessment scores, female students (67.21 ± 3.97) scored significantly higher than male students (64.86 ± 3.93), with the difference being statistically significant ($P < 0.05$).

Association between aspiration index and overall assessment scores:

Pearson correlation analysis indicated a positive correlation between the aspiration index and overall assessment scores ($r = 0.30$, $P < 0.001$, Figure 1A). Both intrinsic goals ($r = 0.33$, $P < 0.001$, Figure 1B) and extrinsic goals ($r = 0.20$, $P = 0.003$, Figure 1C) were also positively correlated with overall assessment scores. Linear regression analysis further revealed that the total aspiration index score predicted overall assessment scores (β = 0.05, 95% CI: 0.03-0.07). Intrinsic goals (β = 0.09, 95% CI: 0.06-0.12) and extrinsic goals (β = 0.06, 95% CI: 0.02-0.09) were also significant predictors.

Pearson correlation analysis further demonstrated that four dimensions of intrinsic goals were positively correlated with overall assessment scores ($P < 0.001$, Figure 2A-D). Similarly, three dimensions of extrinsic goals were positively correlated with overall assessment scores ($P < 0.05$, Figure 3A-C). Linear regression analysis revealed that relationship (β = 0.26, 95% CI: 0.15-0.36), community (β = 0.20, 95% CI: 0.10-0.30), personal growth (β = 0.30, 95% CI: 0.17-0.42), health (β = 0.29, 95% CI: 0.16-0.41), wealth (β = 0.13, 95% CI: 0.03-0.23), image (β = 0.13, 95% CI: 0.04-0.23), and fame (β = 0.11, 95% CI: 0.03-0.20) all significantly predicted overall assessment scores (Table 2).

The findings presented above suggested that intrinsic goals have a stronger association with overall assessment scores compared to extrinsic goals. When both types of goals were entered simultaneously into the regression model, the association between extrinsic goals and overall assessment scores became non-significant (β = 0.01, 95% CI: −0.04-0.05), whereas intrinsic goals maintained a significant positive association (β = 0.09, 95% CI: 0.05-0.13).

Discussion.

Currently, the negative emotions of low-aspiration lying flatism among university students are widely disseminated on the internet, which exacerbate apathetic behaviors and distort value developments among university students [6]. Therefore, it is essential to investigate the aspiration levels of students in the preventive medicine program at our university and to

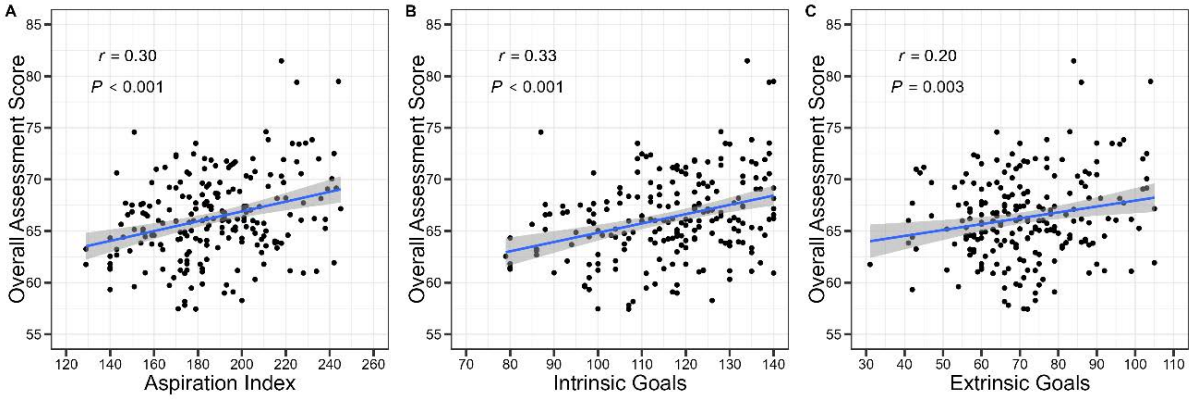

Figure 1. *Correlation between the aspiration index and overall assessment scores.*

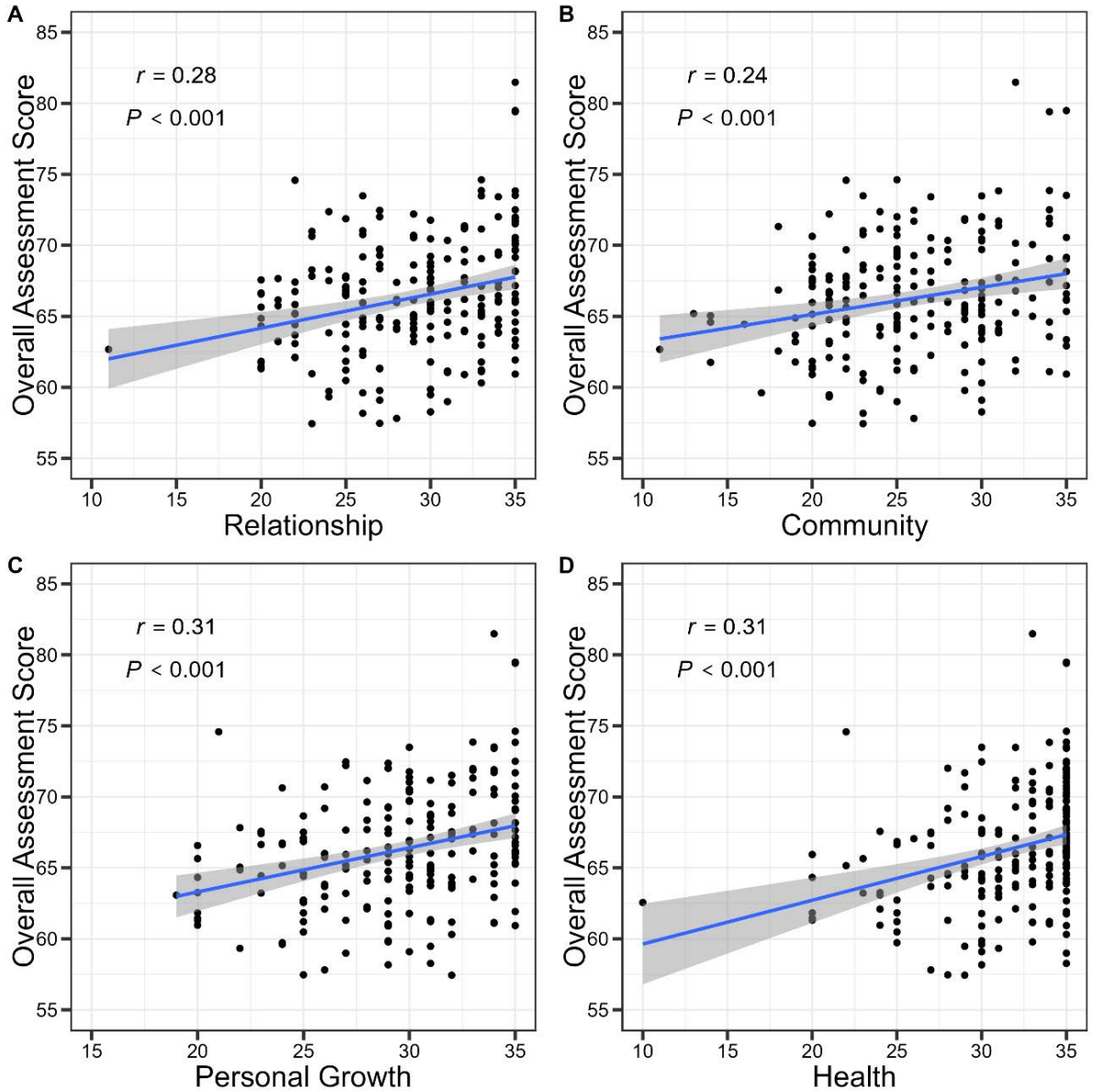

Figure 2. *Correlation between the four dimensions of intrinsic goals and overall assessment scores.*

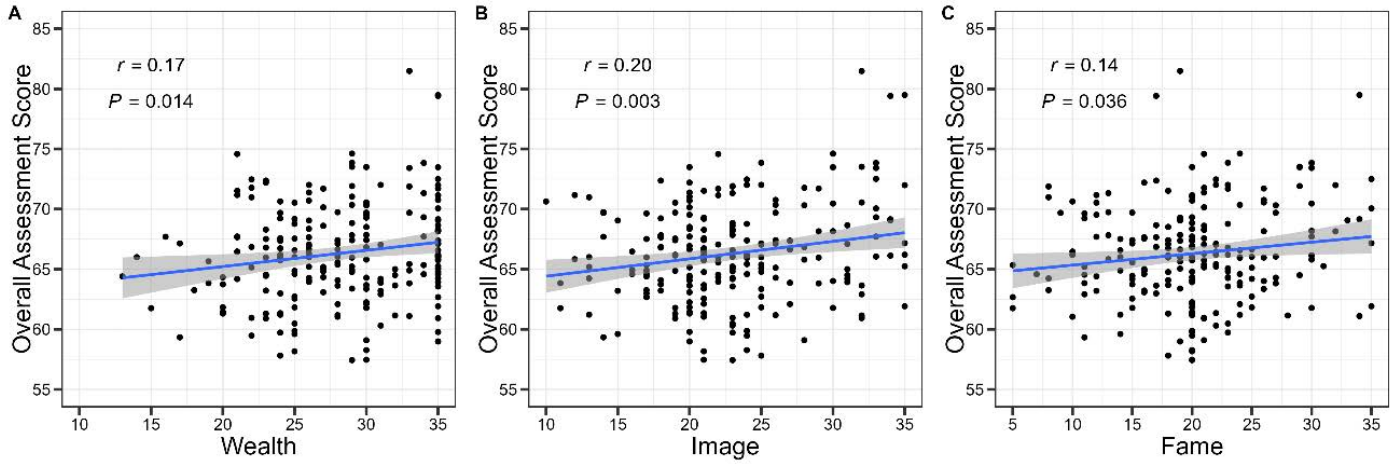

Figure 3. *Correlation between the three dimensions of extrinsic goals and overall assessment scores.*

Table 1. *Summary of aspiration index and overall assessment scores.*

Characteristics	**Overall (n=213)**	**Sex**		***t***	***P***
		Male (n=82)	**Female (n=131)**		
Age	20.77±0.68	20.84±0.64	20.73±0.70	1.22	0.225
Relationship	28.92±4.73	29.28±4.51	28.69±4.87	0.88	0.381
Community	26.14±5.19	26.33±5.11	26.02±5.25	0.43	0.668
Personal growth	29.66±4.10	29.41±4.02	29.81±4.15	0.68	0.496
Health	31.64±4.11	31.20±4.10	31.92±4.11	1.26	0.209
Wealth	28.06±5.12	27.89±5.24	28.16±5.06	0.37	0.709
Image	23.06±5.66	22.63±5.53	23.32±5.75	0.86	0.391
Fame	20.15±6.21	20.79±6.24	19.75±6.18	1.20	0.233
Intrinsic goals	116.36±15.26	116.22±15.09	116.44±15.42	0.10	0.918
Extrinsic goals	71.26±14.42	71.32±14.36	71.23±14.51	0.04	0.966
Aspiration index	187.62±26.27	187.54±26.25	187.67±26.37	0.04	0.971
Overall assessment scores	66.31±4.11	64.86±3.93	67.21±3.97	4.22	<0.001

Table 2. *Association between the aspirations and overall assessment scores*.*

Aspiration	***β***	**95% CI**	***P***
Aspiration Index	0.05	0.03-0.07	<0.001
Intrinsic goals	0.09	0.06-0.12	<0.001
Extrinsic goals	0.06	0.02-0.09	0.002
Relationship	0.26	0.15-0.36	<0.001
Community	0.20	0.10-0.30	<0.001
Personal growth	0.30	0.17-0.42	<0.001
Health	0.29	0.16-0.41	<0.001
Wealth	0.13	0.03-0.23	0.015
Image	0.13	0.04-0.23	0.005
Fame	0.11	0.03-0.20	0.011

**The aspiration index, internal goals, external goals, and their seven sub-dimensions were individually included in the regression models.*

Table 3. *Association of intrinsic and extrinsic goals with overall assessment scores*.*

Aspiration	***β***	**95% CI**	***P***
Intrinsic goals	0.09	0.05-0.13	<0.001
Extrinsic goals	0.01	−0.04-0.05	0.807

** Both internal and external goals were concurrently incorporated into the regression model.*

analyze how these aspirations influence academic performance. This study is the first to explore the factors influencing academic performance from the perspective of aspiration. The results indicated a significant positive association between the aspiration index and overall assessment scores among preventive medicine students. This suggests that students with higher aspiration levels, especially those with stronger intrinsic goals, tend to perform better academically. These findings provide valuable insights for advancing ideological education among university students.

When intrinsic and extrinsic goals were analyzed separately, both types of goals positively predicted overall assessment scores. However, when intrinsic and extrinsic goals were simultaneously included in the regression model, only intrinsic goals showed a significant positive association with overall assessment scores, while extrinsic goals had no significant association. These findings suggest that intrinsic goals exert a stronger influence on academic performance than extrinsic goals, which aligns with previous research [14]. The stronger association between intrinsic goals and academic performance can be explained through motivation theory. Due to the decline of autonomous motivation of learning among students, educators should enhance autonomous motivation of students in order to improve their academic performance.

One study examined the effects of intrinsic and extrinsic goals on students' academic motivation. The findings revealed that both types of goals positively predicted autonomous motivation, with intrinsic goals exerting a stronger influence. However, only extrinsic goals positively predicted controlled motivation [15]. Autonomous and controlled motivation reflect the underlying reasons for individuals' behaviors, depending on whether they are initiated by personal values and interests or driven by external pressures and demands. Research showed that autonomous motivation was associated with positive emotions in daily academic contexts, whereas controlled motivation tended to predict negative emotions [16]. In terms of cognitive engagement, autonomous motivation was negatively linked to shallow cognitive engagement and positively linked to deep cognitive engagement. Conversely, controlled motivation showed a positive relationship with shallow engagement and a negative relationship with deep engagement. In addition, autonomous motivation positively predicted both behavioral and emotional engagement in academic contexts [17]. This indicated that students with higher autonomous motivation were more likely to adopt meaningful learning strategies and experience positive emotional states. This ultimately contributed to better academic achievement [18].

In addition, another study investigated the impact of intrinsic and extrinsic goals on university students' quality of life under perceived academic stress. The results showed that intrinsic goals improved quality of life via alleviating academic stress, whereas extrinsic goals worsened quality of life via increasing academic stress [19]. Individuals who pursue intrinsic goals often experience higher levels of well-being, whereas those focused on extrinsic goals are more likely to encounter stress, anxiety, and poor mental health outcomes [19]. A further path analysis revealed that intrinsic goals enhanced well-being by influencing basic psychological needs and autonomous motivation [20]. Another study indicated that extrinsic goals could reduce well-being [21]. A study on university graduates examined how intrinsic and extrinsic goals differently influenced goal achievement, satisfaction of psychological needs, and mental health after one year. The results indicated that graduates who prioritized intrinsic goals over extrinsic goals were more likely to accomplish their anticipated goals after one year and demonstrated better mental health. In contrast, graduates who focused on extrinsic goals experienced negative impacts on their mental health [22]. The influence on mental health ultimately manifests in students' academic achievement.

Therefore, in the educational process, greater emphasis should be placed on cultivating students' awareness and ability to pursue intrinsic goals, rather than solely focusing on the attainment of extrinsic goals. Intrinsic goals are closely related to personal growth and are instrumental in fostering students' autonomous motivation, promoting active learning, and enhancing their overall well-being and mental health. In contrast, extrinsic goals are often driven by external rewards and social recognition, which may lead students to neglect their internal needs in order to meet external expectations. As a result, they may fail to achieve their desired life goals and even experience negative mental health outcomes.

This study had several limitations. First, due to its cross-sectional design, causal relationships between aspirations and academic performance could not be established. Second, the sample was drawn from a single university, which limited the generalizability of the findings to broader populations. Third, the measurement of aspirations relied on self-reported questionnaires, which might introduce social desirability bias. Fourth, although sex was controlled for, potential confounding from other unmeasured variables might influence the results. Therefore, it would be valuable for future research to adopt longitudinal or intervention-based approaches in order to better investigate causal links between aspirations and academic performance.

Currently, preventive medicine faces challenges related to diminished professional attractiveness and weakened professional identity. The findings of this study provide valuable insights for the cultivation of students in preventive medicine. Students' learning motivation and effectiveness are closely linked to their level of intrinsic aspirations. Therefore, educators should prioritize fostering intrinsic goals over extrinsic ones to help students recognize and appreciate the importance of pursuing intrinsic aspirations. This approach facilitates the establishment of appropriate goal orientations, thereby enhancing the quality of talent development. Ultimately, it enables students to achieve greater psychological fulfilment and fosters improved mental well-being.

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Conflict of interest statement.

No potential conflicts of interest relevant to this article were reported.

Ethics approval and informed consent statement.

This study was approved by the institutional review board at our institute, and all participants provided the written informed consent.

Author Contributions.

Yu Zhu: Conceptualization, Methodology, Writing - Original Draft, Funding acquisition. Fandong Zeng: Software, Formal analysis. Weiwei Chang: Visualization, Funding acquisition. Liying Wen: Validation. Lijun Zhu: Data curation. Yuelong Jin: Project administration, Supervision, Writing - Review & Editing.

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