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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии
საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

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GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

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WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman (Кириллица)**, для текста на грузинском языке следует использовать **AcadNusx**. Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - <http://www.spinesurgery.ru/files/publish.pdf> и http://www.nlm.nih.gov/bsd/uniform_requirements.html В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректур авторам не высылаются, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or computer-printed on a single side of standard typing paper, with the left margin of 3 centimeters width, and 1.5 spacing between the lines, typeface - **Times New Roman (Cyrillic)**, print size - 12 (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf

In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

**Articles that Fail to Meet the Aforementioned
Requirements are not Assigned to be Reviewed.**

ავტორთა საქურაღებოლ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დაიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx**. შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრაფიების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შედეგის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფხიხლებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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THE EFFECT OF CHILDHOOD SUBJECTIVE SOCIOECONOMIC STATUS ON MENTAL HEALTH: THE MEDIATING ROLES OF PERCEIVED DISCRIMINATION AND STATUS ANXIETY

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Abstract.

Objective: This study explored the effect of childhood subjective socioeconomic status on mental health and the chain-mediating mechanism of perceived discrimination and status anxiety.

Methods: A random survey was conducted via an online survey platform with 999 college students in east China. Participants completed the Childhood Subjective Socioeconomic Status Scale, General Health Questionnaire, Status Anxiety Scale, and the Perceived Personal Discrimination Scale. The sample comprised 323 men and 676 women. The mean age was 20.49 ± 2.70 years. Mediation analysis using Model 6 and 5,000 bootstrap samples was employed to explore the mediating role of perceived discrimination and status anxiety in the relationship between childhood subjective socioeconomic status and mental health.

Results: Mental health was significantly positively correlated with childhood socioeconomic status, and significantly negatively correlated with perceived discrimination and status anxiety. Perceived discrimination and status anxiety played a partial chain mediating role between childhood socioeconomic status and mental health. The mediation model accounted for 31% of the variance in mental health. Moreover, the results indicated that the significant mediating effect of perceived discrimination between childhood subjective SES and mental health had a value of 0.029 and a 95% confidence interval of [0.019, 0.041]. Furthermore, the significant mediating effect of status anxiety between childhood subjective SES and mental health had a value of 0.010 and a 95% confidence interval of [0.006, 0.014].

Conclusion: The results provide an explanation of how childhood subjective socioeconomic status influences their mental health. Interventions to address perceived discrimination and status anxiety can improve the mental health status of children who experience childhood adversity. The study's findings contribute to understanding mental health in childhood and inform potential interventions to improve the well-being of individuals who have experienced childhood adversity. The limitations of the study were self-report scales and potential biases in the sample population. Addressing these limitations will enhance the credibility of the research and pave the way for future studies.

Key words. Subjective socioeconomic status, mental health, perception of discrimination, status anxiety.

Introduction.

Socioeconomic status (SES) is a concept covering social, economic, psychological, and other factors, and has both subjective and objective dimensions. Objective SES usually

encompasses income, education, and occupation, and can be used to classify individuals into different social grades. By contrast, subjective SES reflects an individual's perception of his or her level in the entire socioeconomic structure and is closely related to psychological indicators such as stress, depression, and anxiety, as well as health indicators such as obesity and individual life expectancy. Childhood subjective SES refers to one's retrospective perception of their social and economic status during childhood [1]. Studies have shown that, compared with objective SES, subjective SES has a stronger predictive effect on health, psychology, and other factors [2,3]. However, few studies have investigated the impact of childhood subjective SES on mental health, and the underlying mechanism remains unclear. The purpose of this study was to address this gap in the literature. This study explored the influence of childhood subjective SES on mental health and its internal mechanism. The findings should offer practical guidance for childhood education and psychological poverty alleviation.

The influence of childhood subjective SES on mental health.

Subjective SES includes the evaluation of one's status within the socioeconomic structure both now and in the future [4,5]. From a theoretical perspective, the relative deprivation-gratification model posits individuals evaluate whether they are in a favourable or unfavourable position compared with outgroup members and adjust their behaviour accordingly [6]. Subjective SES is also a social comparison that can have an impact on an individual's mental health. As an individual's subjective awareness and judgment, subjective SES includes not only the individual's awareness of current SES, but also their past and future awareness [5]. Recent studies have found that subjective SES can capture more sensitive SES information than objective SES. Therefore, subjective SES has a stronger predictive power on individual physical and mental health and cognitive ability [3].

According to the cognitive theory of SES, subjective SES affects the individual's cognition of society and their relationship with others: higher subjective SES is associated with a more positive attitude towards and evaluation of oneself and others [7]. Compared with objective SES, subjective SES better reflects an individual's sense of belonging to a certain social class; their future prospects, social phenomena, and job opportunities; and their attitude and behaviour towards themselves and the people around them. Netuveli and Bartley showed that subjective SES had a significant impact on not only health indicators, such as obesity, cardiovascular disease, diabetes, and cancer, but also psychological factors, such as depression, low self-evaluation, and perceived stress [8]. Childhood subjective SES affects individual development through self-perception and has an important impact on individual growth, which in turn directly

impacts individual mental health; there is also a cumulative effect. Recognising the great practical significance of exploring the impact of childhood subjective SES on mental health, this study proposed the following hypothesis:

Hypothesis 1: Childhood subjective SES impacts one's mental health.

Mediating effect of perceived discrimination.

Perceived discrimination is a subjective experience rooted in concerns about social injustice. It refers to an individual's subjective feelings when perceiving that they are treated differently or unfairly on the basis of a group characteristic such as race, identity, or gender [9]. Social identity theory holds that differences in subjective SES provide further information about environmental unfairness, leading individuals to perceive higher levels of unfairness and discrimination [10]. Therefore, it is of great theoretical significance to incorporate subjective SES into the study of perceived discrimination. Previous research has found that subjective SES affects perceptions of discrimination. For example, Liu et al. reported that after controlling for the influence of individual factors, family SES had a significant negative predictive effect on perceived discrimination: children with low subjective SES were more likely to perceive discrimination, and low monthly family income also increased children's perception of discrimination [11].

As a stressor, perceived discrimination has important effects on individuals' physical and mental development. According to the rejection-identification model, perceived discrimination can have bidirectional effects on individual mental health: a positive effect by improving individuals' sense of group identity and a negative effect by alerting individuals to the weaknesses of their own group [12-14]. Modified label theory contends that once an individual is classified into a special group, they more easily perceive social discrimination and thus tend to adopt defensive behaviours such as avoidance, burnout, and rejection; they are also more inclined to self-devalue and experience a decline in self-efficacy [15,16]. According to learned helplessness theory, long-term, persistent perception of external discrimination decreases an individual's sense of control over the surrounding environment and negatively affects their mental health status [17].

Relative deprivation theory posits that when individuals find themselves to be disadvantaged in social comparison, they feel deprived of basic rights, in turn reducing their subjective well-being [18]. Research by several Chinese scholars showed that perceived discrimination led individuals to feel less social support; experience more negative emotions, such as anxiety, depression, and social alienation; and even engage in negative behaviours such as revenge, attack, and avoidance. For disadvantaged students in particular, perceived discrimination is closely related to subjective well-being, self-esteem, school adjustment, depression, loneliness, aggression, and poor academic performance [19-21]. Differences in subjective SES provide more information about environmental injustice, and the perceived discrimination resulting from this sense of injustice affects individual mental health [22,23]. Therefore, this study proposed the following hypothesis:

Hypothesis 2: Childhood subjective SES influences mental health through the mediating effect of perceived discrimination.

Mediating effect of status anxiety.

Status anxiety, also known as class or identity anxiety, refers to the stress response experienced when facing the possibility of losing one's status or not meeting the criteria for socioeconomic success. Studies have shown that individuals with lower subjective SES experience greater status anxiety. Alderson and Katz-Gerro found that comparing one's income with that of others negatively affected subjective well-being. Low subjective SES is considered the root cause of certain mood disorders and work or school failures. Individuals with lower subjective SES are more inclined to engage in risky behaviours, such as crime and gambling, to alleviate their status anxiety. Studies of European citizens have found that individuals who believe others look down on their job and level of income report higher status anxiety. Status anxiety can trigger chronic stress responses and is negatively correlated with mental health. A preoccupation with status can make people feel that their self-image is threatened and react negatively when perceiving that they are being evaluated. Status anxiety can cause people to constantly compare themselves with those of higher SES, thus increasing the likelihood of experiencing relative deprivation [24]. In addition, status anxiety can lead to maladaptive coping strategies and depression [25]. Therefore, this study proposed the following hypothesis:

Hypothesis 3: Childhood subjective SES affects mental health through the mediating effect of status anxiety.

Based on existing theories and previous research results, we proposed the following model: subjective SES in childhood can directly affect the mental health of adults and can indirectly affect mental health by influencing perceived discrimination and status anxiety. In this study, we conducted an online survey of college students in east China to explore the impact of childhood subjective SES on adult mental health and its underlying mechanism.

Methodology.

Participants:

To determine the minimum sample size for the current study, G*Power version 3.1 Program [26] was used. The result of the calculation indicated that the sample size required for correlation analyses among the study variables for detecting a small effect ($r = 0.10$) with a power of 0.80 and a 0.05 level of significance with a 2-tailed test was 779.

The final sample recruited in the current study was 999 college students from east China by random sampling, all of whom volunteered to participate through the Wenjuanxing application. Participants were informed that their responses to the psychological questionnaire survey would remain anonymous and that they had the right to withdraw at any time during the survey. After eliminating responses that were incomplete, too short, too long, or regular, 999 valid responses were obtained. The sample comprised 323 male and 676 female participants, 406 counties and 593 townships. There were 729 medical majors, 71 science majors, 54 engineering majors, 38 normal majors, 74 humanities and social sciences majors and 33 other majors. The mean age was 20.49 ± 2.70 years.

Measures.

Childhood Subjective Socioeconomic Status Scale:

This self-assessment questionnaire was designed by Griskevicius et al. to measure subjective SES during childhood (ages 6–12). It comprises three items (e.g. ‘When I was growing up, my family usually had enough money to buy things’). Participants rated each item on a seven-point Likert scale (1=strongly disagree, 7=strongly agree). A higher total score denotes higher childhood subjective SES. Cronbach’s α for the scale in this study was 0.805 [27].

General Health Questionnaire:

The General Health Questionnaire (GHQ-12), originally developed by Goldberg and Williams and adapted for use in China by Li and Li, was used to measure participants’ mental health status. The GHQ-12 comprises 12 items and is considered the most valid and reliable mental health measurement tool. Participants responded to each item on a four-point Likert scale (1=never correct, 4=always correct). Six items are reverse scored. A higher total score denotes better mental health. Cronbach’s α for the scale in this study was 0.851 [28].

Status Anxiety Scale:

The Status Anxiety Scale is based on Spielberg et al.’s State-Trait Anxiety Inventory and comprises four positive and two negative items (e.g. ‘I am concerned that my current social status is too low’). Participants responded to each item on a five-point Likert scale (1=strongly disagree, 5=strongly agree). A higher score denotes stronger status anxiety. Cronbach’s α for the scale in this study was 0.880.

Perceived Personal Discrimination Scale:

The Perceived Personal Discrimination Scale was originally developed by Shen et al. and subsequently revised by Qili et al. to measure the perception of discrimination among both poor and non-poor college students. It was later widely used to measure discrimination perception among college students. It comprises three items (e.g. ‘I feel that others look down on me’), and participants responded to each item on a five-point Likert scale (1=never correct, 5=always correct). A higher total score denotes a stronger perception of individual discrimination. Cronbach’s α for the scale in this study was 0.737.

Statistics processing:

The data were statistically analysed with IBM SPSS 23.0 software. Pearson product-moment correlation analysis was used to investigate the relationships between the study variables. Mediation analysis using Model 6 and 5,000 bootstrap samples [26] was used to explore the mediating role of perceived discrimination and status anxiety between childhood subjective SES and mental health. The statistical significance level was set at $p < 0.05$ in the current study.

Ethical approval.

All procedures performed in the current study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments. The study was approved by the Academic Ethics Committee of Wannan Medical College.

Results.

Deviation test:

Harman’s single factor test was used to test for common method bias in the data. The results showed that six factors had eigenvalues greater than 1. The variance explained by the first factor was 27.43%, which is less than the critical standard of 40% [29]. Therefore, there was no serious common method bias in this study.

Correlation analysis:

The results of the correlation analysis after controlling for age, gender, grade, and major are presented in Table 1. Childhood subjective SES was significantly positively correlated with mental health status and was significantly negatively correlated with perceived discrimination and status anxiety. Perceived discrimination was significantly positively correlated with status anxiety, and both variables were significantly negatively correlated with mental health status.

Mediation analysis:

Following the procedure of Zhonglin and Baojuan, we first conducted a regression analysis to determine the predictive effect of childhood subjective SES on mental health status [30]. The results showed that childhood subjective SES was a significant positive predictor of mental health ($\beta = 0.27$, $t = 8.82$, $p < 0.001$). Subsequently, PROCESS macro 3.4 Model 6 was used to analyse the mediating effects of status anxiety and perceived discrimination between childhood subjective SES and mental health status, controlling for gender and age. The regression analysis results are shown in Table 2. In the first test of the mediating effect, childhood subjective SES significantly negatively predicted perceived discrimination ($\beta = -0.21$, $t = -6.59$, $p < 0.001$), which, in turn, significantly negatively predicted mental health status ($\beta = -0.33$, $t = -10.89$, $p < 0.001$). The mediating effect was further tested using the bootstrap method with 5,000 iterations. As shown in Table 3, the mediating effect of perceived discrimination between childhood subjective SES and mental health status had a value of 0.029 and a 95% confidence interval of [0.019, 0.041], indicating a significant mediating effect. Therefore, Hypothesis 2 was supported.

In the second mediating effect test, childhood subjective SES significantly negatively predicted status anxiety ($\beta = -0.18$, $t = -6.29$, $p < 0.001$), which, in turn, significantly negatively predicted mental health status ($\beta = -0.25$, $t = -8.28$, $p < 0.001$). The mediating effect was further tested using the bootstrap method with 5,000 iterations. The mediating effect of status anxiety between childhood subjective SES and mental health status had a value of 0.020 and a 95% confidence interval of [0.011, 0.030], indicating a significant mediating effect. Therefore, Hypothesis 3 was supported.

Since perceived discrimination was also a significant positive predictor of status anxiety ($\beta = 0.42$, $t = 15.05$, $p < 0.001$), the bootstrap method was used with 5,000 iterations to test the chain mediating effect of perceived discrimination and status anxiety between childhood subjective SES and mental health status. The chain mediating effect had a value of 0.010 and a 95% confidence interval of [0.006, 0.014], indicating a significant mediating effect. Since childhood subjective SES

Table 1. Correlation Analysis of childhood subjective SES, perceived discrimination, status anxiety and mental health.

	<i>M</i>	<i>SD</i>	childhood subjective SES	perceived discrimination	status anxiety	mental health
childhood subjective SES	3.41	1.21	1			
perceived discrimination	2.74	0.72	-0.21***	1		
status anxiety	3.90	1.24	-0.27***	0.46***	1	
mental health	3.43	0.53	0.27***	-0.47***	-0.44***	1

Note: *** $p < 0.001$

Table 2. The analysis of mediation model.

Variables	Perceived discrimination				status anxiety				Mental health			
	β	<i>SE</i>	<i>t</i>	95%CI	β	<i>SE</i>	<i>t</i>	95%CI	β	<i>SE</i>	<i>t</i>	95%CI
Childhood subjective SES	-0.21	0.02	-6.59***	[-0.0158--0.085]	-0.18	0.03	-6.29***	[-0.240--0.126]	0.14	0.01	4.90***	[0.036-0.083]
Perceived discrimination					0.42	0.05	15.05***	[0.641-0.833]	-0.33	0.22	-10.89***	[-0.285--0.198]
status anxiety									-0.25	0.01	-8.28***	[-0.133--0.082]
<i>R</i> ²	0.05				0.25				0.31			
<i>F</i>	10.04***				54.63***				63.57***			

Note: *** $p < 0.001$

Table 3. Bootstrap verification of mediation effects and effect values.

Routes of mediation	β	<i>SE</i>	Effect Value	Confidence Interval (95%)
Childhood SSS-Perceived discrimination-Mental health	0.067	0.013	0.029	[0.019, 0.041]
Childhood SSS-status anxiety-Mental health	0.045	0.011	0.020	[0.011, 0.030]
Childhood SSS-Perceived discrimination-status anxiety-Mental health	0.022	0.005	0.010	[0.006, 0.014]

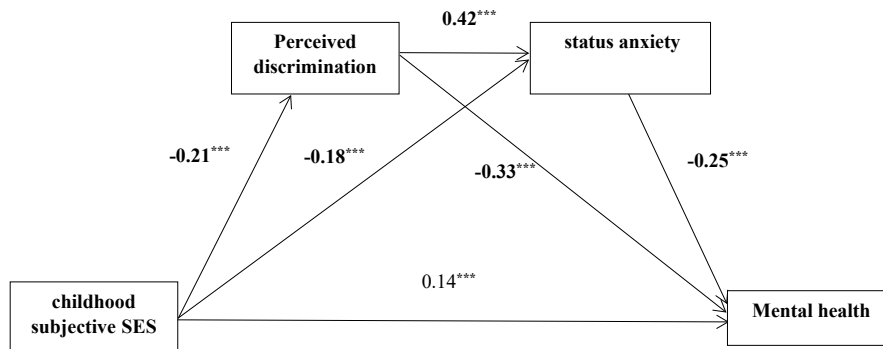


Figure 1. Relationship Model of childhood subjective SES and Mental health.

Note: *** $p < 0.001$.

was still a direct positive predictor of mental health ($\beta=0.14$, $t=4.90$, $p < 0.001$), the chain of perceived discrimination and status anxiety played a partial mediating role (Figure 1).

Discussion.

This study found that childhood subjective SES was significantly negatively correlated with perceived discrimination and status anxiety but significantly positively correlated with mental health. Analysis of the mediating effects revealed that perceived discrimination and status anxiety played a partial chain mediating role between childhood subjective SES and mental health status.

Association between childhood subjective SES and mental health:

Childhood subjective SES positively predicted participants' mental health status: individuals with higher childhood subjective SES had better mental health in adulthood, whereas individuals with lower childhood subjective SES had poorer mental health in adulthood. The direct effect of subjective SES on an individual's mental health status is consistent with prior studies that have found individuals with higher subjective SES have higher self-esteem, a more positive attitude toward life, and greater access to social support. By contrast, individuals

with lower subjective SES have lower self-esteem, more negative life attitudes, and less access to social support. When one's self-evaluation of SES is low it can produce a high degree of individual stress [31]. Thus, higher childhood subjective SES can positively predict well-being in adulthood and negatively predict levels of stress, depression, and anxiety [32,33].

Mediating effect of perceived discrimination on childhood subjective SES and mental health:

This study found that childhood SES can indirectly affect mental health by influencing perceived discrimination. Specifically, lower childhood subjective SES leads individuals to perceive greater discrimination and unfairness, and experience more negative emotions. This is consistent with previous findings that a stronger degree of perceived discrimination leads to experiencing less positive emotions, more negative emotions, lower life satisfaction, and poorer overall mental health [34]. Another study showed that being aware of oneself in the context of others' discrimination can induce a state of stress, whose persistence directly impacts one's mood and behaviour [35]. Individuals perceive discrimination when they do not receive the same resources or social support as people around them; this sense of relative deprivation leads to a series of adverse psychological and behavioural reactions [36]. Moreover, perceived discrimination can positively predict negative emotions such as nervousness and fear. Lin (2015) found that perceived discrimination was positively related to social anxiety and loneliness. Children who perceive discrimination feel inferior, which leads them to actively or passively refusing some social interactions with others and experiencing more loneliness [19,37,38].

Mediating effect of status anxiety on childhood subjective SES and mental health:

This study also found that childhood SES indirectly affects mental health by influencing status anxiety. Specifically, lower childhood subjective SES leads to more status anxiety and, in turn, poorer mental health. This is consistent with previous findings indicating that lower childhood subjective SES causes individuals to experience severe feelings of frustration, stigma, insecurity, and anxiety about their social status [39]. Moreover, Layte and Whelan found that lower childhood subjective SES led individuals to perceive large social class gaps, unequal distribution of income and other resources and high levels of status competition; in turn, these feelings induced higher psychosocial stress, triggering emotional stress responses that are detrimental to health and well-being [40].

Partial chain mediating effect of perceived discrimination and status anxiety:

The results also revealed a partial chain mediating effect of perceived discrimination and status anxiety in the relationship between childhood subjective SES and mental health status. This finding indicates that higher perceived discrimination caused by lower childhood subjective SES can lead to a lower mental health status not only directly but also indirectly by increasing status anxiety. This is consistent with the previous finding that lower SES experienced in childhood increases the individual's feeling of being treated unfairly, causing anxiety

about their status and a negative impact on their mental health [7]. Perceived discrimination can make individuals realise they are in a vulnerable group, leading to higher status anxiety and more negative emotions, such as anxiety, depression, and social alienation. In addition, subjective SES is based on one's objective economic situation, which is difficult to improve in the short term; the persistence of economic distress leads to a strong perception of discrimination. However, individuals are more likely to attribute discrimination to themselves or their family and identify with the discrimination of others, which increases status anxiety, inferiority, and fear of interacting with others, while also leading to a low sense of self-identify and poor relationships with peers [41]. To address these issues, mental health work in colleges should guide students on how to correctly identify and treat discrimination: through positive evaluation, the negative impact of perceived discrimination can be reduced.

Limitations.

Although this study conducted a large-scale investigation, there are some limitations that deserve mentioning. Because the study targeted Chinese college students, generalising our results to other populations is limited and requires caution. Additionally, the evaluation of childhood subjective SES was retrospective. Lastly, because the study was cross-sectional, causality cannot be inferred. Longitudinal follow-up studies should be done in the future.

Conclusion.

This study found that childhood subjective SES was significantly negatively correlated with perceived discrimination and status anxiety but significantly positively correlated with mental health. The study's findings contribute to understanding mental health in childhood and inform potential interventions to improve the well-being of individuals who have experienced childhood adversity. Analysis of the mediating effects revealed that perceived discrimination and status anxiety played a partial chain mediating role between childhood subjective SES and mental health status. Therefore, the intervention of discrimination perception and status anxiety may improve the mental health status of individuals who experience childhood adversity.

Informed Consent.

Informed consent was obtained from all participants included in the study.

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Author Contributions.

Conceptualization, research methodology, data collection and research design: LH. Draft manuscript - writing: LD. All authors have read and approved the final version of the manuscript.

Data Availability.

All data in this article can be obtained from the corresponding author with good cause.

Ethical Approval.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the Academic Ethics Committee of Wannan medical college.

Declaration of Competing Interest.

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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