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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. რენტგენოგრამების 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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RESEARCH ON PSYCHOLOGICAL WELL-BEING AND EMOTIONAL PROFILE OF ADOLESCENTS IN THE CONTEXT OF SCHOOL BULLYING

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Abstract.

This study explores the relationship between psychological well-being and emotional profiles of adolescents in the context of school bullying. Bullying, characterized by repeated aggressive behavior, has severe psychological impacts, including anxiety, depression, and reduced self-esteem. The research involved 71 adolescents (ages 10-13) from various regions of Armenia. Using tools such as the Psychological Well-Being Study Method, Spielberg-Khanin Anxiety Inventory, Izard's Differential Emotions Scale, and Norkina's Bullying Structure Test, the study found that most adolescents have average psychological well-being, with higher social and spiritual health. Emotional profiles showed moderate levels of positive emotions, especially, interest and joy, but also was revealed the high levels of index of negative emotions, especially disgust, anger and guilt. The most common bullying role was "protector," followed by "helper," "bully," "victim," and "observer." Significant correlations were observed between emotional states and bullying roles, highlighting the influence of emotional well-being on bullying behavior. The study suggests that comprehensive anti-bullying programs should address psychological and emotional factors to effectively reduce bullying.

Key words. Psychological well-being, emotional profile, adolescents, bullying roles, anti-bullying programs.

Introduction.

Bullying among adolescents is one of the most acute and relevant issues in modern school environments, causing significant psychological and social consequences. This phenomenon involves systematic aggressive behavior aimed at causing physical or emotional harm to another student. The problem of bullying is critical not only due to its prevalence but also because of the severe negative consequences for adolescents' mental and physical health, such as anxiety disorders, depression, decreased self-esteem, and even suicidal thoughts and behaviors. Negative effects impact not only the bullies but also the victims and both passive and active bystanders.

The relevance of this research is determined by several factors: the prevalence of bullying in schools, the duration of bullying's impact extending into adulthood, its negative effects on individual and social development, and the need for effective comprehensive programs based on a thorough understanding of the phenomenon of bullying.

Dan Olweus defines bullying as when someone repeatedly and on purpose says or does mean or hurtful things to another person who has a hard time defending themselves. According to Dr. Olweus, this definition includes three important components:

- Bullying is aggressive behavior that involves unwanted, negative actions.

- Bullying often involves a pattern of behavior repeated over time.

- Bullying involves an imbalance of power or strength.

There are several types of bullying: direct bullying (physical and verbal), indirect (social deprivation, gossip, spreading negative information), and cyberbullying.

- **Direct bullying** involves direct confrontation with a person and can include pushing, hitting, name-calling, and taunting.

- **Verbal bullying** is any type of communication that causes harm to another (taunting, teasing, name-calling, extortion, threats).

- **Physical bullying** is harming a person or property (shoving, hitting, tripping, damaging a person's property).

- **Indirect bullying** is a more subtle and covert act such as social isolation, spreading rumors, or exclusion.

- **Relational aggression** is harmful to someone's self-esteem or group acceptance (rumor spreading, intentionally excluding someone).

- **Cyberbullying** involves the use of technology to harass, make fun of, or intimidate another person (posting derogatory comments, using technology to spread rumors or make threatening comments) [1-3].

It is important to note that the spread of bullying is largely influenced by social factors. For example, Hazler's work shows that teachers do not consider verbal aggression as bullying and do nothing about it [4]. Numerous studies show that schools lack systematic activities to inform teachers and students about the phenomenon of bullying, its manifestations, and preventive and corrective measures in its early stages [5-7].

It is known that in schools with strict discipline and consistent punishments for bullying, the incidence and frequency of bullying are much lower compared to other schools. Parental involvement in bullying prevention systems in schools is also important.

Scientific literature also emphasizes the relationship between psychological well-being, happiness levels, and bullying. For instance, Rean and Stavtsev's works show that mechanisms for developing positive interventions and enhancing psychological and subjective well-being are much more effective than measures aimed at reducing negative manifestations in schools [8]. Koirikivi and others have shown that bullying manifestations are associated with low levels of well-being [9]. García-Vázquez et al. demonstrated the connection between happiness levels and prosocial behavior [10].

Additionally, various personal characteristics of students, such as anxiety, self-acceptance, aggressiveness, self-esteem, and levels of different emotional states, can influence bullying manifestations [11,12]. Early diagnosis and correction of these

characteristics can also serve as models for bullying prevention in schools.

Despite significant attention to the problem of bullying in scientific literature, many aspects remain insufficiently studied. Most existing research focuses on the social and behavioral aspects of bullying, such as peer roles and family dynamics. However, psychological components, including anxiety levels, emotional well-being, and the roles played by bullying participants, are not sufficiently explored. There is also a lack of research in different cultural and regional contexts, which limits the development of universal prevention and intervention strategies.

Summarizing the above, a comprehensive approach to bullying prevention and correction is needed, including informing teachers, students, and parents about bullying manifestations and working on the psychological determinants of bullying.

Research Aim.

The aim of this study is to examine the relationship between psychological well-being and the emotional status of students in the context of bullying in its various forms and roles.

Hypothesis.

It is hypothesized that, regardless of their role in bullying, students will exhibit "negative psychological components."

Research Objectives.

1. Identify the representativeness of different bullying roles among Armenian school students.
2. Investigate the structural-functional characteristics of psychological well-being.
3. Examine the emotional status of students.
4. Determine the relationship between bullying manifestations and components of students' psychological well-being.
5. Diagnose psychological indicators that have the greatest influence on bullying manifestations.

Research Object. The structural-functional model of bullying in Armenian schools.

Research Subject. The psychological components of bullying.

Research Methods.

The study involved 71 adolescents aged 10-13 from different regions of Armenia (Yerevan, Kotayk, Syunik), with 41 male and 29 female students (Figure 1). All participants and their parents were informed about the study's objectives and tasks and provided written consent to participate. The average age was 11.39 years. The sample's representativeness was determined by the number of variables studied.

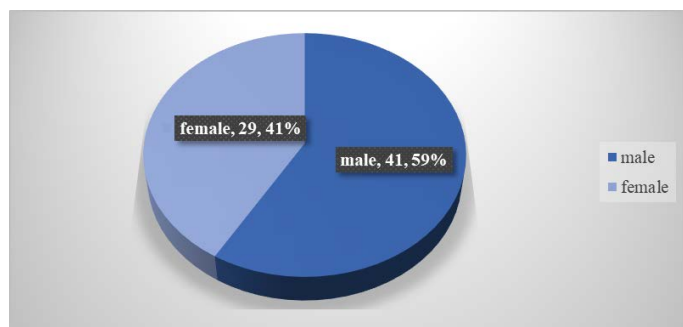


Figure 1. Research sample.

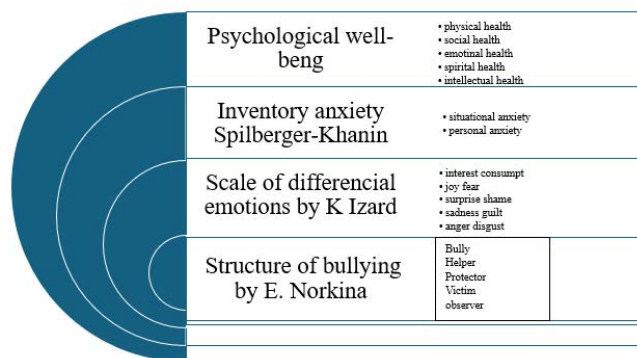


Figure 2. Research tools for assessing psychological well-being and emotional profile of adolescents in the context of school bullying.

Research Methods.

To achieve the research objectives, modern psychodiagnostic methods were used (Figure 2):

1. **WHO-developed Psychological Well-Being Study Method**, adapted at the V.M. Bekhterev St. Petersburg Research Institute of Psychoneurology. The test consists of 50 questions, with 10 questions for each scale. The maximum score for each scale is 40 points, and the minimum is 10 points. Scores above 30 on each scale indicate a high level of the given scale, below 15 a low level, and 15-30 an average level.

2. **Spielberger-Khanin State-Trait Anxiety Inventory**, consisting of two parts, each with 20 questions. The first 20 questions identify situational anxiety levels, while the second part targets trait anxiety levels.

3. **Izard's Differential Emotions Scale**, consisting of 30 definitions grouped into 10 emotions: interest, joy, surprise, grief, anger, disgust, contempt, shame, fear, and guilt. Composite indices are calculated in three main emotion groups:

- o **Positive Emotions Index (PEI)**: characterizes the degree of positive emotional attitude of the subject to the current situation. It is calculated as the sum of scores for the first three blocks of basic emotions: $PEI = \sum_{1,2,3} (\text{interest} + \text{joy} + \text{surprise})$. PEI values can range from 9 to 45.

- o **Negative Emotions Index (NEI)**: reflects the general level of negative emotional attitude of the subject to the current situation. It is calculated as the sum of scores for the next four blocks of basic emotions: $NEI = \sum_{4,5,6,7} (\text{grief} + \text{anger} + \text{disgust} + \text{contempt})$. NEI values can range from 12 to 60.

- o **Anxiety-Depressive Emotions Index (ADEI)**: reflects the level of relatively stable individual experiences of the anxiety-depressive complex of emotions, mediating the subjective attitude to the current situation. It is calculated as the sum of scores for the last three blocks of basic emotions: $ADEI = \sum_{8,9,10} (\text{fear} + \text{shame} + \text{guilt})$. ADEI values can range from 9 to 45.

4. **Norkina's Bullying Structure Test**: consists of 24 questions, identifying the following roles in bullying: bully, helper, protector, victim, observer.

The data obtained were subjected to correlation, univariate, and analysis of variance using the SPSS 22.0 statistical program.

Results and Discussion.

As indicated above, we conducted an dispersion analysis of the studied variables, with the results presented in the table below (Table 1).

Table 1. Indicators of Studied Variables in Adolescents.

S.no	variables	min	max	M(Average)	σ(StDev)
1	Age	10	13	11.39	1.389
2	Physical health	14	40	27.39	6.073
3	Social health	18	40	30.33	5.263
4	Emotional health	13	33	23.04	4.063
5	Spiritual health	16	40	30.87	6.096
6	Intellectual health	5	37	27.26	5.534
7	Buller	2	13	7.27	2.078
8	Helper	1	7	3.87	1.444
9	Protector	4	17	11.03	2.525
10	Victim	2	10	4.9	1.746
11	Observer	1	8	3.74	1.648
12	Situational anxiety	14	65	39.77	8.119
13	Personal anxiety	13	63	40.51	10.112
14	Interest situational	1	15	8.45	3.569
15	Interest personal	1	15	8.97	3.533
16	Joy situational	2	15	10.46	3.531
17	Joy personal	3	15	10.52	3.531
18	Surprise situational	1	13	8.7	2.725
19	Surprise personal	3	15	8.97	2.763
20	Sadness situational	2	15	6.76	3.139
21	Sadness personal	1	15	6.61	3.219
22	Anger situational	3	14	7.45	2.566
23	Anger personal	3	15	7.99	3.264
24	Disgust situational	1	14	6.94	2.999
25	Disgust personal	3	15	7.15	3.253
26	Contempt situational	1	13	6.49	2.92
27	Contempt personal	2	15	6.75	3.249
28	Fear situational	1	15	7	3.196
29	Fear personal	1	15	6.75	3.202
30	Shame situational	3	15	7.28	2.943
31	Shame personal	3	15	7.46	3.017
32	Guilt situational	3	15	8.72	3.246
33	Guilt personal	3	15	8.78	3.476
34	PEI	7	43	27.6	8.05
35	NEI	9	48	27.6	8.85
36	ADEI	9	39	22.7	6.2

As can be seen from Table 1, the indicators for physical (M=27.39±6.073), emotional (M=23.04±4.06), and intellectual (M=27.26±5.5) health fall within average values, while the indicators for social (M=30.33±5.2) and spiritual (M=31.1±6.09) health fall within high values.

According to E. Norkina's "Bullying Structure" test, the indicators for the "bully" (M=7.2±2.07), "helper" (M=3.84±1.4), "victim" (M=4.9±1.7), and "observer" (M=3.74±1.6) scales are within average values, while the indicators for the "protector" scale are within high values (M=11.03±1.4).

The indicators for both situational (M=39.77±8.1) and trait (M=40.51±10.1) anxiety are within average values but are closer to the high-value range.

According to K. Izard's emotion scale, the index of positive emotions is within a moderate value range (M=27.6±8.05), while the index of negative emotions (M=27.61±8.85) and the index of anxiety-depressive emotions (M=22.7±6.2) are within high values. The emotional profile of the subjects is shown in Figure 3.

As seen in Figure 3, most emotions fall within average values. However, factors such as "interest, joy, anger, shame, and guilt" are prominently expressed.

The quantitative analysis also revealed interesting data about the prominence of different roles in bullying. Similar to our previous studies [12], it was shown that most school-aged adolescents predominantly assume the role of protector (43 adolescents). Four adolescents assume the role of helper, three the role of bully, two the role of victim, four the role of observer, and fourteen adolescents equally exhibit the roles of protector and bully. In one case, there is an equal expression of the roles of protector, bully, and victim (Figure 4).

One-Way Analysis of the Impact of Psychological Well-Being and Emotional Profile on the Formation of Various Bullying Roles.

The one-way analysis of the influence of psychological well-being indicators and emotional profile on the formation of different bullying roles revealed that the role of the bully

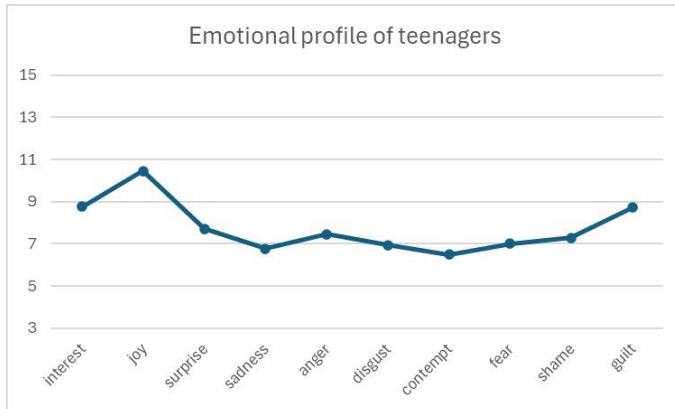


Figure 3. Emotional Profile of the Adolescents Studied.

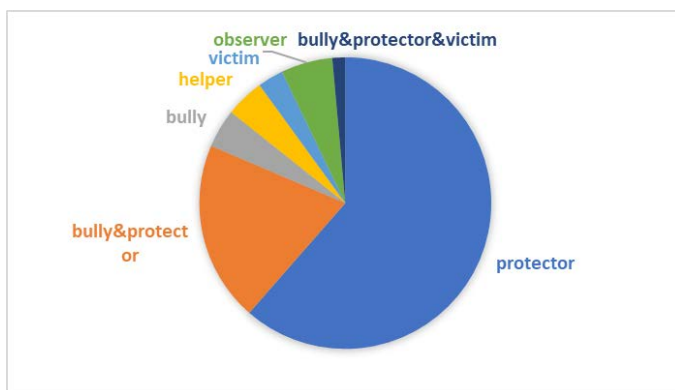


Figure 4. Quantitative indicators of roles in the bullying system.

is statistically significantly influenced by disgust ($p < 0.003$, $F = 3.1$).

For the role of the helper, statistically significant influences are observed from disgust ($p < 0.007$, $F = 3.3$), contempt ($p < 0.045$, $F = 2.3$), guilt ($p < 0.05$, $F = 2.5$), shame ($p < 0.05$, $F = 2.3$), and joy ($p < 0.05$, $F = 2.2$). The factor of fear influences at a trend level ($p < 0.1$, $F = 1.8$).

For the protector role, statistically significant influences are observed from the factor of surprise ($p < 0.001$, $F = 4.2$), physical health ($p < 0.03$, $F = 2.28$), interest ($p < 0.05$, $F = 1.95$), as well as anger ($p < 0.05$, $F = 1.92$) and shame ($p < 0.05$, $F = 2.05$).

For the victim role, significant influences are from the factors of interest ($p < 0.005$, $F = 3.2$) and disgust ($p < 0.04$, $F = 2.14$).

For the observer role, significant influences are from the factors of social health ($p < 0.006$, $F = 3.21$), interest ($p < 0.08$, $F = 2.4$), joy ($p < 0.009$, $F = 3.09$), and disgust ($p < 0.05$, $F = 1.9$).

Interesting relationships were revealed in the correlation analysis. For example, the factor of "bully" positively correlates with the factor of contempt ($r = 0.209^*$), and negatively correlates with the factors of "protector" ($r = -0.355^{**}$), "helper" ($r = -0.544^{***}$), and "victim" ($r = -0.328^{**}$). The factor of "helper" negatively correlates with the factor of "protector" ($r = -0.607^{***}$). The factor of "protector" is in a negative correlation with the factors of "victim" ($r = -0.302^{**}$), disgust ($r = -0.237^*$), and the overall index of negative emotions ($r = -0.201^*$). Noteworthy direct significant relationships of the factor "victim" are with the factor of "surprise" ($r = 0.231^*$) and the overall index of positive emotions at a trend level ($r = 0.189$).

The factor of "observer" positively correlates with the factors of social health ($r = 0.381^{**}$), physical health ($r = 0.221^*$), spiritual health ($r = 0.223^*$), and joy ($r = 0.203^*$), and negatively correlates with the factors of fear ($r = -0.250^*$), disgust ($r = -0.309^*$), and contempt ($r = -0.338^*$).

Interesting were also the identified relationships between various types of health indicators and the emotional characteristics of adolescents. For example, "social health" positively correlates with other types of health with a significance level of $P < 0.01$, with the factor of "joy" ($r = 0.414^{**}$), "interest" ($r = 0.209^*$), and negatively with the factor of "sadness" ($r = -0.472^{**}$). The factor of "emotional health" positively correlates with the factor of "joy" ($r = 0.306^*$) and negatively with several negative emotions: "sadness" ($r = -0.383^*$), anger ($r = -0.362^*$), disgust ($r = -0.417^*$), contempt ($r = -0.288^*$), fear ($r = -0.442^{**}$), shame ($r = -0.270^*$), and guilt ($r = 0.352^{**}$). The factor of "spiritual health" positively correlates with the factors of "joy" ($r = 0.418^{**}$) and interest ($r = 0.295^*$), and negatively correlates with the factors of guilt ($r = -0.252^*$), fear ($r = -0.327^{**}$), contempt ($r = -0.242^*$), and sadness ($r = -0.455^*$). The factor of "intellectual health" positively correlates with the factor of "interest" ($r = 0.253^*$) and negatively with the factors of "sadness" ($r = -0.400^*$) and fear ($r = -0.349^*$).

Discussion.

The results of our study confirm the existence of significant relationships between various aspects of psychological well-being and emotional states of adolescents involved in bullying. As shown in Table 1, most indicators are within average values, indicating a moderate level of psychological well-being among participants. However, indicators of social and spiritual health were higher than average, suggesting a higher level of social and spiritual adaptation among adolescents. At the same time, it is shown that most emotions are within average values. However, factors like interest, joy, anger, shame, and guilt are expressed. This indicates that adolescents experience a variety of contrasting emotional states, which may play a significant role in their social interaction and behavior in bullying situations. For example, interest and joy indicate the presence of positive emotions that may contribute to adaptation and psychological well-being of adolescents. A high level of interest may indicate that adolescents strive for knowledge and interaction, which can be a positive factor in bullying prevention. Anger, shame, and guilt are negative emotions and are part of the depressive-anxious emotions complex, which may indicate internal conflict and tension. Anger may be related to aggressive behavior, which is important to consider in the context of bullying. Shame and guilt may indicate self-criticism and feelings of guilt, which are characteristic of victims of bullying or those who recognize their aggressive actions and feel remorse. The same data was found out by Franzen et al, who have shown that the level of hostility is higher at victims than at adolescents who don't involve in bullying [13]. In another article was shown that shame and guilt have an important role in the process of bullying, particularly the level of shame was less at victims and aggressors, compared with non-involved schoolchildren [14]. Pivetty's work presents intriguing findings that shame is not linked to aggressive behavior but is marked by feelings of failure, gaze aversion, and

a low awareness of causing harm. Both guilt and anger involve norm violations, but guilt is uniquely associated with a tendency to make amends [15].

Resumed above mentioned results, we can say, that these data can serve as a basis for further analysis and the development of preventive measures. For instance, working on anger management and developing positive emotions may help reduce aggressive manifestations and improve the psychological well-being of adolescents.

The correlation analysis showed that the role of the bully positively correlates with the emotion of contempt, while the roles of protector and helper are negatively correlated with this emotion. This indicates that bullies experience more pronounced negative emotions, such as contempt, whereas protectors and helpers are more inclined towards positive emotions and prosocial behavior. Figula M. et al, also in their article indicate that the emotions of bullies are characterized by feeling anger and disgust, which force them to do emotion-driven actions. They deduct anger in an aggressive way towards their peers [16].

The formation of various roles in bullying is also significantly influenced by indicators of psychological well-being and emotional profile. For example, disgust has a statistically significant influence on the formation of the bully role, while surprise and physical health influence the role of the protector. Figula M. et al, also in their article indicate that the emotions of bullies are characterized by feeling anger and disgust, which force them to do emotion-driven actions. They deduct anger in an aggressive way towards their peers [16].

So, we can say, that these data confirm the importance of emotional and physical well-being in shaping prosocial behavior and bullying prevention.

One interesting aspect of our study was the identification of roles within the bullying system. As in previous studies, most adolescents play the role of the protector, which indicates a high degree of readiness for prosocial behavior. At the same time, roles of bully, victim, and observer are also present, indicating a diversity of experiences in bullying among adolescents. It is particularly important to note that the number of bullies has increased compared to previous studies, which may indicate a rise in aggressive behavior in the school environment.

Conclusion.

The study showed that psychological well-being and emotional profile of adolescents play a key role in shaping their behavior in the context of bullying. A high level of social and spiritual resources contributes to prosocial behavior and reduction of aggressive manifestations. At the same time, negative emotions such as contempt and disgust are associated with the role of the bully and contribute to aggressive behavior.

For effective anti-bullying efforts in schools, it is necessary to develop comprehensive programs aimed at improving psychological well-being and fostering positive emotional states among students. It is also important to consider the role of social and spiritual resources in shaping prosocial behavior and involvement in bullying prevention systems.

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REFERENCES

1. <https://clemsonolweus.org/bullyinginfo.php#:~:text=Definition,time%20defending%20himself%20or%20herself>.
2. Olweus D. Bullying at school: Long-term outcomes for the victims and an effective school-based intervention program. In R. L. Huesmann PREDICTORS OF BULLYING AND VICTIMIZATION 81 (Ed.), Aggressive behavior: Current perspectives. 1994:97-130.
3. Olweus D. Bully/victim problems in school: Knowledge base and an effective intervention program. Irish Journal of Psychology. 1997;18:170-190.
4. Hazler R.J. Breaking the cycle of violence: Interventions for bullying and victimization. Washington, DC: Accelerated Development. 1996.
5. Smith J.D, Schneider B.H, Smith P.K, et al. The Effectiveness of Whole-School Antibullying Programs: A Synthesis of Evaluation Research. School Psychology Review. 2004;33:547-560.
6. Evans, Caroline BR, Mark W. Fraser, et al. "The effectiveness of school-based bullying prevention programs: A systematic review." Aggression and violent behavior. 2014;19:532-544.
7. Li Y, Chen P.Y, Chen F.-L, et al. Preventing school bullying: Investigation of the link between anti-bullying strategies, prevention ownership, prevention climate, and prevention leadership. Applied psychology. 2017;66:577-598.
8. Rean A, Stavtsev A. Positive psychological interventions to prevent well-being issues, aggression and bullying in school students. Voprosy obrazovaniya/Educational Studies Moscow. 2020;3:37-59.
9. Koirikivi P, Benjamin S, Hietajärvi L, et al. Resourcing resilience: educational considerations for supporting well-being and preventing violent extremism amongst Finnish youth. International Journal of Adolescence and Youth. 2021;26:553-569.
10. García-Vázquez FI, Valdés-Cuervo AA, Martínez-Ferrer B, et al. "Forgiveness, gratitude, happiness, and prosocial bystander behavior in bullying." Frontiers in psychology. 2020;10:2827.
11. Stepanyan L, Khitryan D, Lalayan G. Exploring age-related psychophysiological patterns in bullying behaviors: An investigation of adolescent judokas. Journal of Physical Education and Sport ® (JPES). 2023;23:2842-2852.
12. Stepanyan L, Tonikyan T, Khitryan D. The Features of Emotional Profile of Bullying Participants. Georgian Medical News. 2022;333:46-50.
13. Franzen M, van Duijn M. A. J, de Jong P. J, et al. How do victims of bullying develop depression? Testing interpersonal style to explain the victimization-depression link. Journal of Research on Adolescence. 2024:1-12.
14. Romera E.M, Ortega-Ruiz R, Rodríguez-Barbero S, et al. How do you think the victims of bullying feel? A study of moral emotions in primary school. Frontiers in psychology. 2019;10:1753.
15. Pivetti M, Camodeca M, Rapino M. Shame, Guilt, and Anger: Their Cognitive, Physiological, and Behavioral Correlates. Curr Psychol. 2016;35:690-699.
16. Figula E, Margitics F, Vass V. THE CHARACTERISTICS OF STUDENTS WHO BECOME BULLIES THROUGH SCHOOL BULLYING. International Journal of Education & Psychology in the Community. 2022:12.