Център за върхови постижения „Наследство БГ“
Centre of Excellence ‘Heritage BG’

„НАСЛЕДСТВО БГ“ – НАУЧНИ ИЗВЕСТИЯ
‘HERITAGE BG’ – RESEARCH ANNOUNCEMENTS

Рецензирано издание в два броя годишно
Peer-reviewed periodical in two issues per year

Година V, брой 9 / Year V, issue 9th
София, 2025

Научни известия
„Наследство БГ“, Година V, брой 9, 2025
Research Announcements
‘Heritage BG’, Year V, Issue 9th, 2025

Главен редактор: акад. проф. дин Иван Илчев (Софийски университет „Св. Климент Охридски“), ORCID: https://orcid.org/0000-0002-2970-0321

Заместник-главен редактор: доц. д-р Биляна Яврукова (Софийски университет „Св. Климент Охридски“), ORCID: https://orcid.org/0000-0002-1146-3487

Editor-in-Chief: Acad. Prof. Ivan Ilchev (Sofia University “St. Kliment Ohridski”, Bulgaria), ORCID: https://orcid.org/0000-0002-2970-0321

Deputy Editor in Chief: Assoc. prof. Bilyana Yavrukova (Sofia University “St. Kliment Ohridski”, Bulgaria), ORCID: https://orcid.org/0000-0002-1146-3487

Редакционна колегия:
акад. проф. дин Иван Илчев *(председател на редакционната колегия, Софийски университет “Св. Климент Охридски”)*, ORCID: https://orcid.org/0000-0002-2970-0321

чл.-кор. проф. дин Александър Костов (Институт по балканистика с център по тракология при Българска академия на науките), ORCID: https://orcid.org/0000-0002-7350-0984

проф. дин Диляна Ботева-Боянова (Софийски университет „Св. Климент Охридски“), ORCID: https://orcid.org/0000-0003-2724-5457

проф. дн Емануел Мутафов (Институт за изследване на изкуствата при Българска академия на науките), ORCID: https://orcid.org/0000-0003-0695-473X

проф. дн Маргарита Серафимова (Институт за литература при Българска академия на науките), ORCID: https://orcid.org/0000-0002-3789-8876

проф. дн Николай Хинов (Технически университет), ORCID: https://orcid.org/0000-0002-0308-4858

проф. дфн Оля Харизанова (Софийски университет „Св. Климент Охридски“), ORCID: https://orcid.org/0009-0009-3643-4410

проф. д-р Гергана Антова (Университет по архитектура, строителство и геодезия), ORCID: https://orcid.org/0000-0002-0926-8033

проф. д-р Йоана Спасова (Институт за изследване на изкуствата при Българска академия на науките), ORCID: https://orcid.org/0000-0002-3270-0154

проф. д-р Йорданка Кандулкова (Университет по архитектура, строителство и геодезия), ORCID: https://orcid.org/0000-0001-6580-522X

проф. д-р Марияна Николова (Национален институт по геофизика, геодезия и география при Българска академия на науките), ORCID: https://orcid.org/0000-0003-4878-3051

проф. д-р Николай Кънев (Великотърновски университет „Св. св. Кирил и Методий),

ORCID: https://orcid.org/0000-0003-0570-8078

проф. д-р Славия Бърлиева (Кирило-методиевски научен център при Българска академия на науките), ORCID: https://orcid.org/0000-0002-6495-8344

доц. д-р Биляна Яврукова (Софийски университет „Св. Климент Охридски“), ORCID: https://orcid.org/0000-0002-1146-3487

доц. д-р Елка Димитрова (Институт за литература при Българска академия на науките), ORCID: https://orcid.org/0009-0000-8918-7200

доц. д-р Емад Абдулахад (Университет по архитектура, строителство и геодезия), ORCID: https://orcid.org/0000-0002-8649-2100

доц. д-р Мила Маева (Институт за етнология и фолклористика с Етнографски музей при Българска академия на науките), ORCID: https://orcid.org/0000-0003-1708-2631

доц. д-р Росина Костова (Великотърновски университет „Св. св. Кирил и Методий), ORCID: https://orcid.org/0000-0002-5016-7410

Editorial Board

Acad. Prof. Ivan Ilchev *(Editor-in-chief, Sofia University "St. Kliment Ohridski", Bulgaria)*, ORCID: https://orcid.org/0000-0002-2970-0321

Corr. Mem. Prof. Aleksandar Kostov (Institute of Balkan Studies and Center of Thracology at the Bulgarian Academy of Sciences, Bulgaria), ORCID: https://orcid.org/0000-0002-7350-0984

Prof. Dilyana Boteva-Boyanova (Sofia University "St. Kliment Ohridski", Bulgaria), ORCID: https://orcid.org/0000-0003-2724-5457

Prof. Emmanuel Moutafov (Institute of Art Studies at the Bulgarian Academy of Sciences, Bulgaria), ORCID: https://orcid.org/0000-0003-0695-473X

Prof. Margarita Serafimova (Institute for Literature at the Bulgarian Academy of Sciences, Bulgaria), ORCID: https://orcid.org/10.46687/BDAS7544

Prof. Nikolay Hinov (Technical University, Sofia), ORCID: https://orcid.org/0000-0002-0308-4858

Prof. Olya Harizanova (Sofia University "St. Kliment Ohridski", Bulgaria), ORCID: https://orcid.org/0009-0009-3643-4410

Prof. Gergana Antova (University of Architecture, Civil Engineering and Geodesy, Bulgaria), ORCID: https://orcid.org/0000-0002-0926-8033

Prof. Yoana Spasova (Institute of Art Studies at the Bulgarian Academy of Sciences, Bulgaria, ORCID: https://orcid.org/0000-0002-3270-0154

Prof. Yordanka Kandulkova (University of Architecture, Civil Engineering and Geodesy, Bulgaria), ORCID: https://orcid.org/0000-0001-6580-522X

Prof. Mariyana Nikolova (National Institute of Geophysics, Geodesy and Geography at the Bulgarian Academy of Sciences, Bulgaria), ORCID: https://orcid.org/0000-0003-4878-3051

Prof. Nikolay Kanev (University of Veliko Turnovo St. Cyril and St. Methodius, Bulgaria), ORCID: https://orcid.org/0000-0003-0570-8078

Prof. Slavia Barlieva (Cyrillo-Methodian Research Centre at the Bulgarian Academy of Sciences, Bulgaria), ORCID: https://orcid.org/0000-0002-6495-8344

Assoc. prof. Bilyana Yavrukova (Sofia University "St. Kliment Ohridski", Bulgaria), ORCID: https://orcid.org/0000-0002-1146-3487

Assoc. Prof. Elka Dimitrova (Institute for Literature at the Bulgarian Academy of Sciences, Bulgaria), ORCID: https://orcid.org/0009-0000-8918-7200

Assoc. Prof. Emad Abdulahad (University of Architecture, Civil Engineering and Geodesy, Bulgaria), ORCID: https://orcid.org/0000-0002-8649-2100

Assoc. Prof. Mila Maeva (Institute of Ethnology and Folklore Studies with Ethnographic Museum at the Bulgarian Academy of Sciences), ORCID: https://orcid.org/0000-0003-1708-2631

Assoc. Prof. Rosina Kostova (University of Veliko Turnovo St. Cyril and St. Methodius, Bulgaria), ORCID: https://orcid.org/0000-0002-5016-7410

Международна редакционна колегия / International Advisory Board

Corr. Mem. Vujadin Ivanišević (Serbian Academy of Sciences and Arts, Belgrade, Serbia), ORCID: https://orcid.org/0000-0002-3375-3944

Prof. Arno Strohmeyer (Institute for Habsburg and Balkan Studies, Austrian Academy of Sciences), ORCID: https://orcid.org/0000-0002-4077-8840

Prof. Damir Agičić (University of Zagreb, Croatia), ORCID: https://orcid.org/0000-0001-5145-9880

Prof. Francesco Guida (Roma Tre University, Italy)

Prof. François De Callataÿ (Royal Academy of Belgium), ORCID: https://orcid.org/0000-0002-5381-2534

Prof. Harald Hepner (Karl-Franzens-Universität Graz, Austria)

Prof. Iakovos Michailidis (Aristotle University, Thessaloniki, Greece), ORCID: https://orcid.org/0000-0001-7295-8806

Prof. Ma Xipu (retired, People's Republic of China)

Prof. Mihailo Popovic (Austrian Academy of Sciences, Austria), ORCID: https://orcid.org/0000-0002-3128-2210

Prof. Mikhail Stanchev (Kharkiv National University, Ukraine), ORCID: https://orcid.org/0000-0002-2034-5087

Prof. Oliver Jens Schmitt (Institut für Osteuropäische Geschichte, Austria), ORCID: https://orcid.org/0000-0002-8418-6222

Prof. Predrag Matejic (Ohio State University, USA)

Prof. Robert Austin (University of Toronto, Canada), ORCID: https://orcid.org/0009-0009-8355-9881

Prof. Rudolf Graf (Babeș-Bolyai University, Cluj-Napoca, Romania)

Prof. Ulrich Pfisterer (Munich University, Germany), ORCID: https://orcid.org/0000-0002-4090-6275

Prof. Ulrike Peter (Project Director and Research Coordinator of the long term project "Imagines Nummorum: Thesaurus Iconographicus Nummorum Graecorum Online" at the Berlin-Brandenburg Academy of Sciences and Humanities, Germany), ORCID: https://orcid.org/0000-0003-0954-4322

Prof. Vasileios Gounaris (Aristotle University, Thessaloniki, Greece), ORCID: https://orcid.org/0009-0001-4997-1911

Prof. Vladimir Stolba (Berlin-Brandenburg Academy of Sciences and Humanities; Fellow of the Royal Danish Academy), ORCID: https://orcid.org/0000-0002-7362-8646

Prof. Wolfgang Höpken (University of Leipzig, Germany), ORCID: https://orcid.org/0009-0000-7466-6938

Prof. Wolfgang Schmale (University of Vienna, Austria), ORCID: https://orcid.org/0000-0001-8772-341X

Prof. Zhanjun Liang (Capital Normal University, People's Republic of China)

Издател

© Сдружение „Център за върхови постижения „Наследство БГ"
София 1000, ул. „Ген. Йосиф В. Гурко" № 7, 2025
yearbook@nasledstvo.bg

Publisher
© Association Centre for Excellence 'Heritage BG'
Sofia 1000, 7 General Iosif V. Gurko Street, 2025
yearbook@nasledstvo.bg

ISSN 2815-3138 (Print)
ISSN 2815-3316 (Online)
https://doi.org/10.58894/AR-HBg.2025.9

Contents / Съдържание

THE ROLE OF TRADITIONS IN MODERN SOCIETY

Contemporary Troyan Ceramics (Bulgaria): Between Tradition and Authorial Experiment / Съвременната троянска керамика: между традицията и авторския експеримент
Женя Георгиева / Zhenya Iv. Georgieva.....6

Folk Medicine – Cupping Therapy (Funduzi) / Народна медицина – Вендузи (фъндузи)
Татяна Томова / Tatyana Tomova
Мариана Ангелчева / Mariana Angelcheva.....16

CULTURAL HISTORY AND MODERNITY

Cultural Tourism as a Means of Improving the Quality of Living Environment in a Peripheral Region in Bulgaria (the Mesta River Region) / Културният туризъм като средство за подобряване на качеството на жизнената среда в периферен регион в България (регионът на река Места)
Желю Владимиров / Zhelyu Vladimirov.....26

Local History Resources in Libraries – Cultural Heritage and Local Memory of Shared History and Values / Краеведските ресурси на библиотеките – културно наследство и местна памет за споделена история и ценности
Анета Дончева / Aneta Doncheva
Цветанка Панчева / Tsvetanka Pancheva 40

NATURAL HERITAGE AND MODERN SOCIETY

Some Observations on the Legal Status of the Product "Strandzhanski Manov Med" / Някои наблюдения около правното положение на продукта „Странджански манов мед"
Даниела Симеонова-Коруджиева /
Daniela Simeonova-Koroudjieva 50

Research and Applied Perspectives on the Socialization of the Natural Monument: Gradishteto – est. Nahodishte na Sinya Hvoyna" / Изследователски и приложни перспективи за социализиране на пз „находище на синя хвойна в м. Градището"
Дияна Добрева / Diyana Dobreva 62

Music Therapy as a Holistic Intervention for Enhancing Wellness Lifestyle and Oxygen Saturation / Музикотерапията като холистична интервенция за подобряване на уелнес начина на живот и кислородната сатурация
Бистра Димитрова / Bistra Dimitrova 72

Synergistic Factors in Healthy Youth Development / Синергични фактори в здравословното развитие на подрастващите
Николина Димитрова / Nikolina Dimitrova 80

Synergistic Factors in Healthy Youth Development

Nikolina Dimitrova
National Sports Academy "V. Levski"

DOI: https://doi.org/10.58894/AR-HBg.2025.9.81-89

Abstract: *Healthy lifestyle development in youth benefits from combining judo training with outdoor activities.* ***Purpose:*** *To examine their joint influence on key health indicators and propose a conceptual statistical model.* ***Methods:*** *A theoretical–analytical design was applied, including a systematic literature review, comparative analysis and conceptual modelling. The model illustrates direct, mediated and interaction effects between judo (X), outdoor activities (M) and health indicators (Y).* ***Results:*** *Judo improves fitness, self-regulation and social competence, while outdoor activities enhance these effects.* ***Conclusion:*** *Their synergy yields the highest health outcomes and supports holistic youth development.*

Keywords: *judo; youth development; healthy lifestyle; outdoor activities*

INTRODUCTION[1]

In the contemporary educational and social environment, the need to view child development as a holistic process is becoming increasingly evident. It is not sufficient for a child to be merely physically active; it is essential that they grow into an emotionally resilient, socially adapted, and morally oriented individual. Motor culture and psychological development are interrelated and particularly important during preschool and early school age, when fundamental patterns of behaviour, self-regulation, and social interaction are formed.

Motor culture encompasses coordination, rhythm, spatial orientation, and the child's ability to control their body and behaviour. It is closely linked to sensorimotor integration and the development of the nervous system, as good motor competence supports emotional resilience and social responsibility (Gallahue, Ozmun and Goodway, 2012 ; Haywood and Getchell, 2018 ; Payne and Isaacs, 2020).

Against this background, judo stands out as an effective pedagogical tool that combines physical activity, motor precision, and core values such as respect, self-discipline, and mutual assistance. The principles of *Seiryoku Zenyo* and *Jita Kyoei* emphasize the unity between physical and personal development. Research consistently shows that judo improves motor skills, coordination, self-control, and emotional regulation (Franchini, Del Vecchio, Ferreira Julio, Matheus and Candau, 2015 ; Sterkowicz-Przybycień, Miarka, and Fukuda, 2017 ; Lakes and Hoy, 2004 as well as social skills (Vertonghen, J. and Theeboom, M., 2010).

Nikolina Dimitrova *is a Full time Professor, Doctor of Science. Member of the Bulgarian national team in Judo. Dimitrova is the scientific expert on IT Tech & Sports informatics and biomechamics. She is member of the researchers team of the National Sports Academy" V. Levski" – partner in the Center of Excellence "Heritage BG". Nikolina Dimitrova is a member of the editorial board of the scientific journal "Smart Innovations in the Recreational Wellness Industry and Niche Tourism" (https://scjournal.globalwaterhealth.org/; eISSN: 2603-4921). She is an active researcher at the Balkan Cluster for Health, Wellness and Spa Tourism.*
Email: ninansa@abv.bg
ORCID:
https://orcid.org/0000-0003-2224-2409

[1] AI tools (ChatGPT) were used only for linguistic editing and translation.

At the same time, activities in natural environments function as a natural regulator of behaviour and emotions. Outdoor pedagogy enhances concentration, reduces stress, and stimulates social Engagement (Becker et al., 2017 ; Mygind et al., 2019). These effects are particularly pronounced in children who respond positively to dynamic environments outside the classroom.

A healthy lifestyle in childhood includes regular physical activity, quality sleep, balanced nutrition, and psychological wellbeing. International recommendations highlight the need for at least 60 minutes of moderate-to-vigorous physical activity daily (World Health Organization, 2020), and scientific evidence confirms the benefits for both physical and mental health (Janssen and LeBlanc, 2010 ; Lubans et al., 2016). In this context, judo and outdoor activities complement each other: the former provides structure and discipline, while the latter offers freedom, resilience, and connection with nature.

Contemporary research emphasizes the importance of integrated approaches to health and recreation. The work of Dimitrova and colleagues (Dimitrova et al., 2018 ; Dimitrova et al., 2020 ; Dimitrova and Tomova, 2025) demonstrates that a wellness-oriented lifestyle, recreational practices, and holistic methods support emotional intelligence, resilience, and health culture. Additional studies highlight the benefits of wellness activities for specific groups (Dimitrova and Nesheva, 2021) and the significance of nature-based practices for stress management (Dimitrova, 2024). In the field of adapted physical activity, Aleksandrova (2021) underscores the role of swimming in the development of children with disabilities.

Taken together, these arguments outline the need for models that examine the interaction between judo training, nature-based activities, and health indicators in youth. The model presented in this study offers an integrated perspective for understanding how these factors work together to support healthy child development.

METHODS[2]

The study was conducted using a combined approach that integrated a theoretical–analytical review with an experimental design, aiming to evaluate the impact of judo training and outdoor activities on the physical and psychosocial health indicators of adolescents.

OBJECTIVE

The main objective of this study is to examine the influence of judo training, extracurricular activities, and nature-based experiences on key physical, psychological, and social health indicators in adolescents.

METHODOLOGY

The methodological framework includes a systematic review of scientific literature from international databases (Scopus, Web of Science, ERIC, SPORTDiscus), a critical analysis of pedagogical models, conceptual modelling, and an experimental study involving real participants.

The experimental component of the study was conducted with a total of 90 participants aged 10–14, divided into three equal groups of 30: Control Group (CG) with no structured sports activities; a Judo Group participating in three weekly training sessions; and a Judo + Outdoor Group combining judo practice with one weekly outdoor session involving hiking, orienteering, and team-based tasks. The intervention lasted 12 weeks, with assessments administered at baseline and post-intervention.

Physical fitness was evaluated using the EUROFIT Test Battery (Council of Europe, 1988), while psychosocial indicators were assessed through a composite Psychosocial Index (PCI), integrating normalized scores from the Self-Control Scale (self-regulation and emotional control) (Tangney, Baumeister and Boone, 2004), the SSIS (social competence) (Gresham and Elliott, 2008), and the CD-RISC (psychological resilience) (Connor and Davidson, 2003). Overall health and wellbeing were

[2] Declarations of informed consent have been signed regarding the publication of survey data.

measured using the KIDSCREEN-27 instrument, which served as the composite health index (Y) (Ravens-Sieberer et al., 2007).

Data analysis included descriptive statistics, paired t-tests to determine within-group changes, and one-way ANOVA to identify differences between groups. When significant effects were detected, post-hoc comparisons were conducted to determine the source of group differences. Statistical interpretation followed the methodological recommendations of Field (Field, 2018) and Tabachnick & Fidell (Tabachnick and Fidell, 2019). The study adhered to the ethical principles of the Declaration of Helsinki, with written informed consent obtained from parents and full anonymity guaranteed for all participants.

RESULTS

The theoretical and analytical review demonstrates a clearly defined relationship between the practice of judo and the development of key health indicators in adolescents, with the literature confirming its multidimensional physical, psychological, and social impact. Systematic reviews show that regular training leads to significant improvements in physical strength, coordination, flexibility, and overall motor performance (Shi and Feng, 2022), and in younger children—enhanced motor competence, physical fitness, and executive functions (Getchell, Tortella, Fumagalli and Sääkslahti, 2022). Outdoor activities, particularly mountain-based ones, complement these outcomes by stimulating endurance, immune function, and adaptability. Specific studies on young judoka report substantial improvements in explosive strength and conditioning performance (Kons et al., 2024). Data from the *Judo in Schools* program further indicate notable benefits for social integration and academic engagement (International Judo Federation, 2020). A summary of the main findings is presented in **Table 1**

Table 1. Main effects and evidence

Category of Effects	Specific Benefits	Empirical Evidence
Physical Development	• Improved strength, coordination, and flexibility • Development of motor culture and proper posture • Reduced risk of obesity	Systematic review on motor development – Shi & Feng (2022); Neurodevelopment and sensorimotor integration – Getchell et al. (2022); Physical conditioning in judo – Kons et al. (2024).
Psychological Development	• Increased self-confidence • Enhanced self-control and emotional regulation • Reduced stress through structured activity	Self-regulation through martial arts – Lakes & Hoyt (2004); Cognitive functions – Biedrzycki & Laskowski (2024); Psychological effects – Vertonghen & Theeboom (2010);
Social Development	• Improved social interaction • Strengthened cooperation and teamwork • Enhanced social adaptation	Social and academic benefits – IJF (2020); Socio-psychological outcomes – Vertonghen & Theeboom (2010); Social effects of outdoor environments – Mygind et al. (2019).

Figure 1 illustrates a positive linear relationship between the level of judo training and five key health indicators: physical fitness, posture, self-confidence, stress management, and teamwork skills. All lines show an upward trend, highlighting the systematic effect of the training.

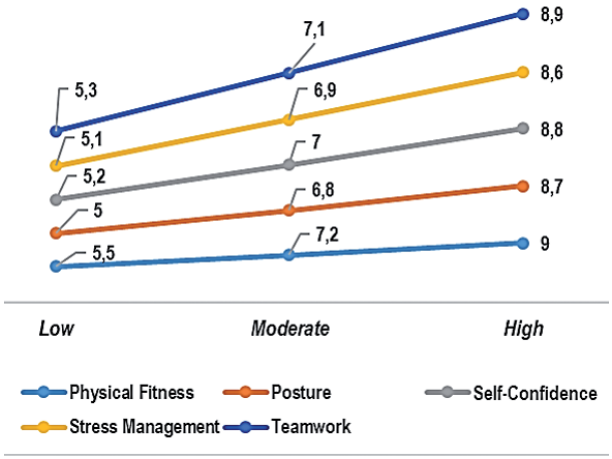


Figure 1. Relationship between training intensity and health indicators in adolescents.

Extracurricular activities play an important role in adolescent development because they expand the traditional educational environment and provide opportunities for children to explore new interests, socialize, and diversify their physical activity. They create conditions for more informal learning, in which students develop skills that often remain outside the boundaries of the classroom.

Figure 2 presents the conceptual statistical model describing the relationship between judo training (X), extracurricular and nature-based activities (M), and health indicators in adolescents (Y). The model assumes that X exerts a direct effect on Y, while M functions as a mediator that amplifies the impact of training. The inclusion of the interaction term ($X \cdot M$) indicates that combined participation leads to disproportionately higher values of Y, which aligns with trends reported in the literature.

$$Y = \beta_1 \cdot X + \beta_2 \cdot M + \beta_3 (X \cdot M) + \varepsilon$$

where:

($\beta_1 = 0.45$) – direct effect of judo

($\beta_2 = 0.30$) – effect of outdoor activities

($\beta_3 = 0.25$) – amplifying (interaction) effect

($\varepsilon = 0.10$) – unmeasured variance

This model clearly demonstrates that the highest values of the health indicators are achieved through simultaneous and intensive participation in both judo and nature-based activities. The synergistic effect between X and M highlights the importance of integrated pedagogical programs that combine sport and natural environments as a means of fostering the holistic development of adolescents.

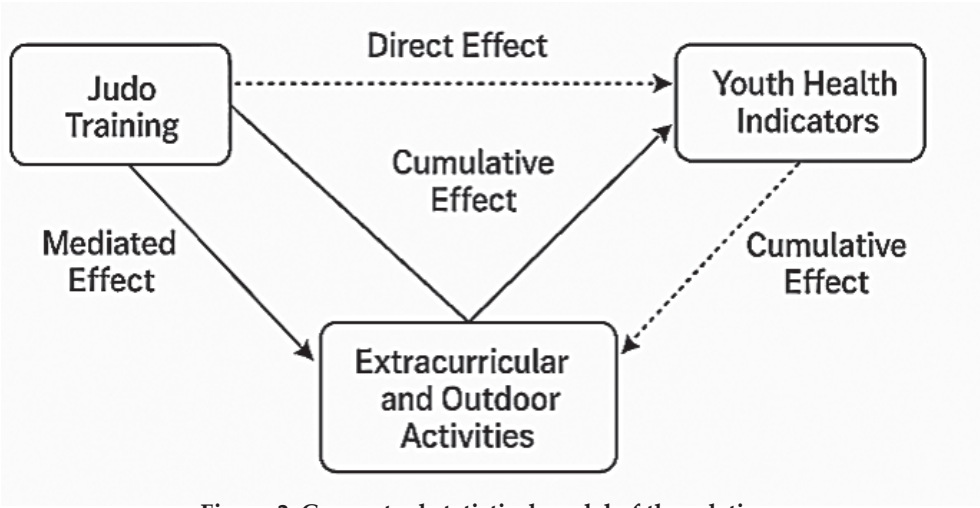


Figure 2. Conceptual statistical model of the relationships between variables

The model (**Fig. 2**) shows that the combined participation in judo and nature-based activities leads to the highest values of Y (physical fitness, psychological resilience, social skills). The visualization presents three interconnected pathways of influence:

√ a direct effect of judo training (X → Y);

√ a mediating effect of outdoor activities (X → M → Y);

√ an amplifying interaction effect (X·M → Y).

The mathematical model is expressed as:

$$Y = 0{,}45 \cdot X + 0{,}30 \cdot M + 0{,}25(X \cdot M) + 0{,}10$$

demonstrates that all three components—judo training (X), outdoor activities (M), and their interaction—contribute positively to the health indicators (Y) (**Table 2**).

Table 2. Structure and contribution of the model components

Component	Description	Coefficient	Contribution to Y	Interpretation
X	Judo training	*0.45*	Direct effect on Y	Enhances physical fitness, self-control, and discipline
M	Outdoor activities	*0.30*	Direct effect on Y	Improves endurance, psychological resilience, and adaptability
X·M	Interaction between X and M	*0.25*	Amplifying (multiplicative) effect	The combination leads to disproportionately higher values of Y
Constant	Baseline value	*0.10*	Initial level of Y	Minimal health potential without participation

If we assume that participation in judo and outdoor activities is measured on a scale from 0 to 10, then at a moderate level of involvement (X = 5, M = 5) we obtain:

$$Y = 0.45 \cdot 5 + 0.30 \cdot 5 + 0.25(5 \cdot 5) + 0.10 = 10.10$$

This result shows a strong cumulative effect—the interaction term X·M (0.25·25 = 6.25) contributes more to the outcome than either factor on its own.

At a high level of participation (X = 8, M = 8):

$$Y=0.45\cdot8+0.30\cdot8+0.25\cdot64+0.10=$$
$$=3.60+2.40+16.00+0.10=22.10$$

It becomes evident that when judo training and outdoor activities are practiced at higher intensity, the health indicators increase disproportionately — a result driven by the interaction effect (**Fig. 3**). Figure 3 illustrates the three pathways of influence and shows that combined programs do not merely add their effects but amplify them. Judo provides structure, discipline, and motor control, while outdoor activities contribute to resilience, adaptability, and psychological strengthening.

Taken together, the model highlights the value of integrated educational programs that combine sports training with nature-based activities. Such an approach not only enhances physical performance but also supports the development of sustainable healthy habits, emotional stability, and social adaptation — all essential components of healthy development in children and adolescents within today's educational context.

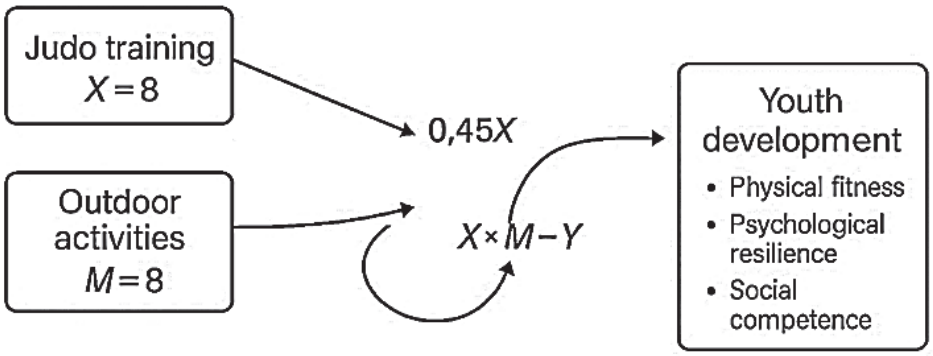


Figure 3. Judo training: conceptual effect pathway

The analysis of the collected data reveals clear and consistent patterns across all measured indicators. Participants practicing judo demonstrate significantly higher levels of physical fitness, self-control, and social competence compared to the control group (CG) (**Table 3**).

Table 3. Statistical indicators of the effects of judo training and outdoor activities

Indicator	CG (M±SD)	Judo (M±SD)	Judo + Outdoor (M±SD)	t / F value	p value
Physical Fitness	5.2 ± 1.1	7.8 ± 1.0	9.3 ± 0.9	F = 18.42	p < 0.001
Self-Control Emotional Regulation	4.9 ± 1.3	7.1 ± 1.2	8.6 ± 1.0	F = 15.77	p < 0.001
Social Competence	5.4 ± 1.0	7.6 ± 1.1	8.8 ± 0.8	F = 16.05	p < 0.001
Psychological Resilience	5.0 ± 1.2	7.3 ± 1.0	8.9 ± 0.9	F = 19.11	p < 0.001
Adaptability	5.3 ± 1.1	7.0 ± 1.0	8.7 ± 0.9	F = 17.88	p < 0.001
Composite Health Index (Y)	5.16 ± 0.9	7.36 ± 0.8	9.08 ± 0.7	F = 22.54	p < 0.001

Statistical testing confirmed that outdoor activities function as a significant mediator, strengthening the relationship between judo training and overall health outcomes. Overall, the findings support the assumption that integrating judo with structured outdoor activities creates a synergistic developmental environment. The model explains a substantial proportion of the variance in youth health indicators and provides a solid foundation for future empirical validation.

DISCUSSION

The findings of the study indicate that judo provides a meaningful pedagogical and health-promoting environment that supports the physical, psychological, and social development of young people. Both the literature

review and the conceptual statistical model suggest that judo training has a direct positive influence on key health indicators, with the strongest improvements observed in physical fitness, self-control, and social functioning. These results are consistent with previous research highlighting the contribution of combat sports to the development of discipline, resilience, and motor competence.

A particularly noteworthy aspect is the mediating role of extracurricular and nature-based activities. The model shows that outdoor experiences do more than simply complement judo training—they enhance its overall impact by strengthening endurance, adaptability, and psychological well-being. The interaction term emerges as the most influential component, indicating that the combination of judo and outdoor activities produces health outcomes that exceed the sum of their individual effects. This finding reinforces the value of a holistic approach in which sport and natural environments work together to support youth development.

The relationships identified in the analysis point to the importance of incorporating both judo and outdoor activities into school and club-based programs. Such an integrated approach can foster long-term healthy habits, encourage social participation, and build psychological resilience—qualities that are increasingly important for young people in contemporary educational contexts. Although the study is theoretical in nature, the proposed model offers a clear foundation for future empirical research aimed at testing and refining these relationships

CONCLUSION

This study emphasizes the important role of judo as an integrative pedagogical approach that supports the development of healthy lifestyle habits among young people. The review of existing research, together with the proposed conceptual statistical model, shows that judo training influences physical, psychological, and social development in a multifaceted way. The most notable improvements are observed in discipline, self-control, motor competence, and the ability to cope with stress.

The findings also highlight the strengthening effect of extracurricular and nature-based activities, particularly those carried out in mountain environments. These activities not only complement the benefits of judo but also enhance them, leading to higher overall health outcomes. The strong interaction effect in the model confirms that combining sport with outdoor experiences creates a more powerful developmental impact than either component alone.

The study outlines a conceptual framework that can guide future empirical research and support the development of practical programs for children and adolescents. Overall, the synergy between judo and nature-based activities offers a promising and sustainable pathway for fostering healthy habits, personal growth, and social adaptation in contemporary educational settings.

REFERENCES

Aleksandrova, V. (2021) *Adapted swimming for children with disabilities*. Sofia: IPRESS.

Becker, C., Lauterbach, G., Spengler, S., Dettweiler, Ulrich and Mess, F. (2017) "Effects of regular classes in outdoor education settings", *International journal of environmental research and public health*, 14(5), 485.

Biedrzycki, J. and Laskowski, R. (2024) "The impact of judo training on cognitive functions", *Baltic journal of health and physical activity*, 16(4).

Connor, K., Davidson, J. (2003) "Development of the CD-RISC resilience scale", *Depression and anxiety*, 18(2), pp. 76 – 82.

Council of Europe (1988) *EUROFIT: handbook for the EUROFIT tests of physical fitness*. Rome: Italian National Olympic Committee, Central Direction for Sport's Technical Activities Documentation and Information Division

Dimitrova, B., Tomova, T. (2025) "Wellness lifestyle, emotional intelligence, workplace and leadership success", *Smart innovations for the recreative & wellness industry and*

niche tourism, 6(2), pp. 51 – 56.

Dimitrova, B., Nesheva, I. (2021) "Research to improve health care for women with normal pregnancy", *Trakia journal of sciences*, 19(1), pp. 684 – 690.

Dimitrova, B. (2024) "The role of wellness, SPA and thalassotherapy in stress management", *Smart innovations for the recreative & wellness industry and niche tourism*, 6(2), pp. 7 – 14.

Dimitrova, B., Polomenov, M., Treneva, V., Nesheva, I., Ivanova, V. and Trendafilov, D. (2018) *Sotsialna znachimost na uelnes kulturata*. Sofia: Avangard.

Dimitrova, B., Geshev, P., Treneva, V., Nesheva, I., Aleksandrova, V., Ivanova, V. and Trendafilov, D. (2020) *Wellness lifestyle and youth development*. Sofia: Avangard.

Field, A. (2018) *Discovering statistics using IBM SPSS statistics*. 5th ed. London: Sage.

Franchini, E., Del Vecchio, F. B., Ferreira Julio, U., Matheus, L. and Candau, R. (2015) "Specificity of performance adaptations to a periodized judo training program", *Revista Andaluza de medicina del deporte*, 8(2), pp. 67 – 72.

Gallahue, D., Ozmun, J. and Goodway, J. (2012) *Understanding motor development: infants, children, adolescents, adults*. New York: McGraw Hill.

Getchell, N., Tortella, P., Fumagalli, G. F. and Sääkslahti, A. (2022) "Promoting motor development in children in the COVID-19 era", *Frontiers in public health*, 10, 988085.

Gresham, F. and Elliott, S. (2008) *Social Skills Improvement System (SSIS) rating scales*. Minneapolis: Pearson.

Haywood, K. and Getchell, N. (2018) *Life span motor development*. 7th ed. Champaign: Human kinetics.

International Judo Federation (2020) *Judo for children: educational and social benefits*. Budapest: IJF Education Department.

Janssen, I. and LeBlanc, A. (2010) "Systematic review of the health benefits of physical activity in youth", *International journal of behavioral nutrition and physical activity*, 7, 40.

Kons, R. L., Detanico, D., Costa, F. E., Franchini, E., Dopico-Calvo, X., Aznar, J. M., Loturco, I. and Weldo, A. (2024) "Strength and conditioning practices of judo coaches", *International journal of sports science and coaching*, 19(2), pp. 573 – 585.

Lakes, K. and Hoyt, W. (2004) "Promoting self-regulation through school-based martial arts training", *Journal of applied developmental psychology*, 25(3), pp. 283 – 302.

Lubans, D., Richards, J., Hillman, C., Faulkner, G., Beauchamp, M., Nilsson, M., Kelly, P., Smith, J., Raine, L. and Biddle, S. (2016) "Physical activity for cognitive and mental health in youth", *Pediatrics*, 138(3), e20161642.

Mygind, L., Mygind, E., Kjeldsted, E., Hartmeyer, R. D., Bıılling, M. and Bentsen, P. (2019) "Mental, physical and social health benefits of immersive nature experience", *Health & place*, 58, 102136. doi: https://doi.org/10.1016/j.healthplace.2019.05.014.

Payne, G. V., Isaacs, Larry (2020) *Human motor development: a lifespan approach*. 10th ed. New York: Routledge.

Ravens-Sieberer, U., Auquier, P., Erhart, M., Gosch, A., Rajmil, L., Bruil, J., Power, M., Duer, W., Cloetta, B., Czemy, L., Mazur, J., Czimbalmos, A., Tountas, Y., Hagquist, C. and Kilroe, J. (2007) "The KIDSCREEN-27 quality of life measure", *Quality of life research*, 16(8), pp. 1347 – 1356.

Shi, P. and Feng, X. (2022). "Motor skills and cognitive benefits in children and adolescents: relationship, mechanism and perspectives", *Frontiers in psychology*, 13:1017825. doi: https://doi.org/10.3389/fpsyg.2022.1017825.

Sterkowicz-Przybycień, K., Miarka, B. and Fukuda, D. (2017) "Sex and weight category differences in time-motion analysis of elite judo athletes", *Journal of strength and conditioning research*, 31(3), pp. 817 – 825.

Tabachnick, B. G. and Fidell, L. S. (2019) *Using multivariate statistics*. 7th ed. New York: Pearson

Tangney, J. P., Baumeister, R. F. and Boone, A. L. (2004) "High self-control predicts good adjustment", *Journal of personality*, 72(2), pp. 271 – 324.

Vertonghen, J. and Theeboom, M. (2010) "The social psychological outcomes of martial arts practice among youth", *Journal of sports science and medicine*, 9, pp. 528 – 537.

World Health Organization (2020) *Guidelines on physical activity*. Geneva: WHO.

Синергични фактори в здравословното развитие на подрастващите

Николина Димитрова

Резюме: Изследването разглежда синергичния ефект между тренировките по джудо и природобазираните дейности като интегриран подход за подпомагане на здравословното развитие на подрастващите. Джудото се утвърждава като ефективен педагогически инструмент, който развива моторни умения, самоконтрол, дисциплина и социална компетентност. Както е посочено в текста, „judo improves fitness, self-regulation and social competence, while outdoor activities enhance these effects“, което подчертава допълващия характер на двете практики. Дейностите в природна среда допринасят за намаляване на стреса, подобряване на концентрацията и повишаване на психологическата устойчивост. Те създават условия за неформално учене, социална ангажираност и адаптивност, което ги прави ценен компонент в детското развитие. Методологията включва теоретико-аналитичен преглед, концептуално моделиране и експериментално изследване с участие на 90 деца, разделени в три групи: контролна, джудо и „джудо + природа“. Физическите и психосоциалните показатели са оценени чрез EUROFIT, стандартизирани психологически скали и композитен здравен индекс. Резултатите показват, че джудото значимо подобрява физическата подготовка, самоконтрола и социалните умения, а природните дейности усилват тези ефекти. Концептуалният модел $Y = 0{,}45X + 0{,}30M + 0{,}25(X \cdot M) + 0{,}10$ демонстрира, че най-високи здравни резултати се постигат при комбинирано участие. Заключението подчертава, че интегрираните програми „джудо + природа“ представляват устойчив и ефективен подход за формиране на здравословни навици, емоционална стабилност и социална адаптация при подрастващите.

Ключови думи: джудо; развитие на младежта; здравословен живот; дейности на открито

Брой 9 / 2025 е резултат от изпълнението на проект BG16RFPR002-1.014-0011 „Устойчиво развитие на Център за върхови постижения „Наследство БГ“, финансиран по процедура за предоставяне на безвъзмездна финансова помощ №BG16RFPR002-1.014 „Устойчиво развитие на Центрове за върхови постижения и Центрове за компетентност, в т.ч. и на конкретни инфраструктури или техни обединения от Национална пътна карта за научна инфраструктура“.

Issue 9 / 2025 is a result of the implementation of project BG16RFPR002-1.014-0011 Sustainable Development of the Center of Excellence “Heritage BG,” funded under the grant aid procedure BG16RFPR002-1.014 “Sustainable Development of Centers of Excellence and Centers of Competence, Including Specific Infrastructures or Their Associations from the National Roadmap for Scientific Infrastructure”.