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Contemporary Troyan Ceramics (Bulgaria): Between Tradition and Authorial Experiment

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Abstract: *This study examines contemporary Troyan ceramics as a dynamic field of interaction between inherited craft tradition and individual artistic pursuit. The analysis is based on fieldwork conducted in the town of Troyan and its surrounding villages, incorporating interviews with members of the local ceramic community – master artisans who inherited the craft through family traditions. The research traces the preservation of established aesthetic and technological models characteristic of the so-called Troyan "pattern" (sharka)[1] as well as the development of authorial interpretations and innovative approaches. On the one hand, practices aimed at maintaining and reproducing established ornamental and formal principles stand out, perceived as carriers of local identity and cultural continuity. On the other hand, processes of experimentation with new decorative solutions, forms, and functionalities are observed, reflecting both the personal creative signature of the master artisans and their adaptation to contemporary market demands.*

Keywords: *Troyan ceramics; tradition; individual talent; intangible cultural heritage; craft practices*

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Even in the earliest stages of human history, ceramics combined utilitarian and artistic principles, simultaneously satisfying everyday pragmatic needs and ceremonial functions. Over time, craft practice gradually transcended its purely practical dimensions. It established itself as a form of artistic expression in which plastic form, decoration, and technological solutions reflected the complex interaction between tradition, the geographic environment, and the individual creative choice of the master artisan (Arbaliev 1961, pp. 18 – 130). In this sense, the development of the craft did not merely follow the logic of technical progress; it was directly linked

[1] The term was used by the old master potters of Troyan. It was introduced into the academic literature by Petar Hadzhiev and later consolidated by Stoyan Nikolov (Hadzhiev, 1954, pp. 38-39 ; Nikolov, 1973, p. 8).

to fulfilling aesthetic and symbolic needs, transforming traditional pottery into "artistic craftsmanship" (Daskalov, 1907, pp. 3 – 58).

Troyan ceramics has occupied an important place among Bulgarian crafts in the years leading up to and following the Liberation. Its development was conditioned both by the region's natural attributes and by the socio-economic conditions of the era. The presence of high-quality clay, combined with active trade links and exchange of artisinal knowledge, created the prerequisites for forming a sustainable and recognizable artistic style. In traditional everyday life, clay was not merely a raw material, but a valuable natural resource and a vital part of cultural existence – linked to livelihoods and endowed with important symbolic meanings throughout the human life cycle (Tsanov, 2000, p. 45).

Although developing in dialogue with traditional pottery from neighboring regions, Troyan ceramics gradually forged its own recognizable dynamics of color and ornamentation (Saychevski, 1977, p. 3). To understand the contemporary character of Troyan ceramics, it is essential to first highlight the factors that shaped this tradition. Every craft emerges and evolves within a dynamic interaction between human agency, the natural environment, and accumulated collective experience. The physical and geographical features of the Troyan Balkan region and the deposits of suitable clay raw materials predetermined the emergence of local pottery and contributed to establishing a specific regional identity.

The consolidation of Troyan as one of the most significant ceramic centers in Bulgaria resulted from combining a favorable geographic environment with specific historical circumstances. The region features deposits of high-quality clay characterized by high plasticity and thermal resistance. This natural resource fueled the pottery craft as early as the Bulgarian National Revival. However, favorable climate and soils were not the sole contributing factors; the strategic location of the region played a pivotal role. Troyan was situated along an important transportation and trade route crossing the Balkan Mountains (Stara Planina), facilitating the commercial distribution of vessels far beyond local markets. During major trade fairs, Troyan potters not only sold their wares but also adopted new technological techniques, glaze recipes, and ornamental motifs from masters across other parts of the country (Tsanov, 1980, p. 29).

Gradually, ceramic production became the primary livelihood for many local families. The craft was passed down from generation to generation, and working with clay began to shape a distinct way of life, a value system, and a sense of community belonging. In this context, clay was not simply a raw material; it became a cultural mediator between nature and humans, between daily necessity and artistic creation. When discussing Troyan ceramics[2], we are not merely examining material objects, but addressing cultural memory, accumulated practical expertise, and a tradition that continues to define the region's identity today.

A defining feature of contemporary Troyan ceramics is the synthesis of two knowledge transmission mechanisms. On the one hand stands family continuity, through which practical skills and artisanal experience are acquired within the domestic workshop. On the other hand lies institutional artistic education, embodied by the "Prof. Venko Kolev" National School of Applied Arts in Troyan and the National Academy of Arts in Sofia. It is precisely the interaction between these two educational paths that creates the conditions for new authorial interpretations within the framework of tradition.

It is important to note that the Troyan "pattern" (*sharka*) is not a static decorative motif. It arose in direct connection with the technological process of throwing and decorating vessels on the potter's wheel, gradually acquiring an independent aesthetic value. Its most recognizable element – the characteristic multicolored ornament known as the "Troyan

[2] Today, the term *Troyan ceramics* is predominantly known as referring to ceramic items that are "decorated" (Nikolov, 1973, p. 8) with that lavish Troyan "pattern" (*sharka*) that became so recognizable after the beginning of the 20th century (**See Figure 1**).

drop" (*Troyanska kapka*) or "feather" (*perushina*) – became the hallmark of local artistic production (Markov and Kisyov, 1988, pp. 144 – 147).

During the second half of the 20th century, with the rise of cooperative labor forms and the industrialization of the craft, pottery production underwent substantial transformations. The introduction of refined clays, plaster molds for slip-casting, and electric kilns for firing directly impacted decoration. Patterns became universalized and standardized, leading to a loss of the masters' individual talent and artistic judgment within the production process.

In contemporary practice, the Troyan "pattern" serves a dual function. On one level, it functions as a marker of local identity and a guarantee of continuity with tradition; on another, it becomes a canvas for authorial interpretations through which individual master artisans forge their own artistic signatures. Throughout the 20th and 21th centuries, masters have preserved the core principles of the "pattern" while enriching it with new compositions, color palettes, and personal interpretations.

Today, Troyan ceramics enjoys a certain revival and international recognition, not only through its traditional "pattern" (*sharka*), but also through the contemporary artistic experimentation of today's master artisans. On the one hand, this is due to their own dedication, but it is also supported by local institutional backing through festivals, exhibitions, and related initiatives.

According to the 2003 UNESCO Convention, intangible cultural heritage is preserved not through physical objects themselves, but through the knowledge, skills, and practices transmitted and passed down from one generation to another. In this sense, Troyan ceramics should be viewed not merely as a collection of wares, but as a system of knowledge, techniques, and cultural meanings that continue to be reproduced and evolved in contemporary times.

In the following lines, I will focus on several examples of contemporary interpretations and artistic experiments by presenting master artisans from Troyan with whom I conducted interviews between 2023 and 2026. In an era of digitalization and mass production, these examples demonstrate how certain crafts remain timeless, and how traditional knowledge stays vital through direct connections and the invisible thread linking generations.

Miroslav Yankov (a third-generation potter) and his wife Svetla are among the contemporary bearers of the Troyan ceramic tradition, developing it through a synthesis of established decorative models and a personal artistic touch. Their work clearly highlights a drive to interpret classic forms by reimagining them within a more modern visual context. Master Miro prefers to call himself a potter (a craftsman) rather than adopting the modern title of "company director" (Boho Soulz, 2023). For him, clay is not just raw material or a job, but a calling. His lineage originates from the village of Terziysko – the birthplace of the so-called Troyan "pattern" (*sharka*) according to historical records (Hadzhiev, 1954, pp. 38 – 44).

Miroslav Yankov's journey in the craft began in 1977, immediately after completing his military service. His mentor was his grandfather Tsocho, who, despite his advanced age, returned to the wheel to pass on the nuances of the trade to his grandson. This training was marked by extraordinary meticulousness; the old masters made no compromises regarding quality or proportions, and Master Miro notes that if he were to teach someone the craft today, he would be equally exacting (FNAIF, 3531). However, the roots of this craftsmanship reach even further back in time. Miro Yankov's great-grandfather, Vasil Shabanov, held an official master certificate issued by the Ruse Chamber of Commerce and Industry in the distant year of 1935. Today, Miroslav's son, Emiliyan Yankov, also holds a master certificate, although he is not currently practicing actively. For Master Miro, pottery is a journey of continuous growth. Looking back at the vessels he turned 20 years ago, he realizes just how much his skill has evolved in the craft (Boho Soulz, 2023).

Today, Miroslav and his wife continue to work side by side—he turns the vessels on the wheel, while she paints the "pattern" (*shari*). Svetla recalls learning the intricacies first from Grandfather Tsocho, then from friends and other female painters in the vil-

lage, thus "stealing the trade," as she puts it (Boho Soulz, 2023). To this day, the decoration on their vessels features the traditional Troyan pattern with consistent color combinations for the drop motif (though distinct from those of Grandfather Tsocho) and the so-called "bouquet" (*buket*). They do not alter their color palette, as they serve regular clients - primarily traditional taverns (*mehani*) – who maintain a consistent product line. Their work illustrates how the traditional vocabulary of Troyan ceramics can be adapted and enriched without losing its identity, thereby sustaining the living character of a craft that continues to evolve through the personal choices of contemporary masters. By working primarily within established ornamentation and eschewing radical experiments in color combinations or shapes, they nevertheless develop a distinct, recognizable style that sets them apart within both family and local traditions (**See Fig. 1 and Fig. 11**).



Figure 1. Plates and traditional *gyuvech* (covered pots) decorated with the Troyan drop motif (*Troyanska kapka*) from the Yankov family workshop. Photo: Zhenya Georgieva

The next example illustrates the contemporary state of the Troyan ceramic craft from the late 20th century and the first decades of the 21th century through the application of traditional motifs. This is exemplified by the Iliev family (Plamen and Tanya Ilievi and their two daughters, Ilina Ilieva and Radina Tarakchieva) and their workshop, "Radilina." They showcase a successful blending of intergenerational continuity with a modern perspective on the craft. Founded by Plamen and Tanya Ilievi, the workshop now actively involves their daughters, who continue the family legacy. Plamen Iliev's professional path is tied to institutionalized forms of training. He graduated in the first cohort of the modern School of Applied Arts in Troyan, studying under established authorities such as the painter Vlado Yovkov and the ceramicist Tsonko Todorov, while simultaneously acquiring practical wheel-throwing skills from local hereditary master potters. His career developed through the Atelier at the Museum of Folk Craft and Applied Arts in Troyan (1982 – 1988) and the Guild of Masters of Folk Fine Crafts, which shaped his strict standards regarding technological requirements and adherence to authentic forms (FNAIF 3469).

The transition from a state-organized production to a private entrepreneurial initiative in the late 1980s (20th century) initially posed difficulties and administrative hurdles – such as connecting to the power grid and building a private electric kiln – before eventually granting liberation from the price controls of craft commissions (Official Website of "Radilina" Workshop). The family preserves traditional Troyan techniques and ornaments while simultaneously developing diverse forms and decorative solutions tailored to the modern consumer. Family memory holds the nuanced technique of crafting the traditional "flag pattern" (*na bayrak*), which Tanya Ilieva, Plamen's wife, demonstrates with ease. Tanya continues to paint using a foot-powered wheel, despite the convenience offered by modern electric wheels. Beyond traditional motifs, the family creates custom decorative elements driven by contemporary market demands.

The current phase of the workshop illustrates the impact of globalization, showing a clear differentiation in consumer demand: Bulgarian clients and emigrants primarily seek traditional vessels with nostalgic value, whereas the international market demands greater adaptability. "Radilina" Workshop successfully exports products to France, Greece, Serbia, and the USA, and recently

secured a joint contract alongside Ralitsa Yovkova to supply yogurt bowls for a major Japanese manufacturer. The work of the Iliev family demonstrates how Troyan ceramics can remain true to its roots while seamlessly finding its place in contemporary cultural and everyday environments (**See Fig. 2 and 3**).



Figure 2. Demonstration of the Troyan pattern (*sharka*) at the "Radilina" workshop. Photo: "Radilina" company website (https://www.radilina-bg.com/bg/about)



Figure 3. A dinnerware set combining tradition with a modern feel, featuring added roses. Photo from the "Radilina" workshop website: https://www.radilina-bg.com/bg/collection/collection-1

ops a more contemporary and experimental approach to form and materials, including mixing various artistic techniques. This coexistence of tradition and innovation imparts a clearly recognizable, multifaceted artistic identity to the studio. The exploration of contemporary dimensions in Troyan ceramics demonstrates how traditional practices evolve into modern plastic art through intergenerational family continuity. The studio is the direct successor of the family ceramic workshop founded in 1956 by Mariana's father—the renowned master potter Tsonko Todorov. The connection between generations and the enrichment of the craft found symbolic expression in their contemporary exhibition "*Pro.dalzhenie*" ("Pro.longation / Continuation") at the "Seryakova House" Gallery in Troyan, whose title reflects both professionalism and the transmission of knowledge (**See Fig. 4**).

The first master in the family was Tsonko Todorov (originally from the village of Gradnica, Gabrovo region). He completed his craft training in Sofia and at the Ceramics School in Troyan, where he later became an instructor (1976 – 1981). Renowned for crafting fine *krondiri* (traditional vessel types), he passed down

At "NeDa" Studio, Mariana Licheva (a second-generation ceramicist) and Neda Licheva (a third-generation practitioner in the craft) combine two distinct yet complementary creative paths: Mariana remains closer to traditional Troyan ornamentation and classic decorative language, whereas Neda develto his daughter Mariana the skill of throwing lightweight, precise vessels (FNAIF 3470).

Both Mariana and Neda Licheva completed their secondary education at the Troyan Art School (now the "Prof. Venko Kolev" National School of Applied Arts), where both taught at various periods. Both earned their higher education degrees in Ceramics at the National Academy of Arts – Mariana graduated in 1982 from the class of Prof. Venko



Figure 4. The "*Pro.dalzhenie*" ("Pro.longation / Continuation") exhibition, opened on December 12, 2025. Photo: "Seryakova House" Gallery (https://www.facebook.com/profile.php?id=100057717630470&sk=photos)

Kolev, and Neda from the class of Prof. Krasimir Dzhidrov. Mariana Licheva worked for a year and a half before entering the Academy at the "Troyanska Keramika" Cooperative, and according to her, that practical experience provided comprehensive training in the craft – from throwing on the wheel to slip-painting with a bulb compressor (*pompichka*) and brush painting.

In their family practice, a seamless transition is observed wherein each generation transforms the artistic vocabulary. Mariana translates traditional Troyan decorative elements (drops, spirals, *chezhii*, *zaharievi kitki*) onto modern forms. Her signature items are miniature decorative and souvenir plates and *krondiri*, affectionately called "candies" (*boncheta*) in their workshop. She also crafts masks upon which she paints variations of Troyan patterns with a brush. Neda, on the other hand, leans toward dynamic, mixed-media creative formats. Alongside functional ceramics and exploring ceramic volume and form, she works with stained glass, metal and scrap art panels, and art photography. Both love experimenting with colors and glazes (**See Fig. 5 and 6**). "We argue constantly because each of us has her own vision. We are very different, and in a way, that is a good thing," said Mariana Licheva. "I wouldn't say we influence each other – we are distinct both in style and work" (Ivanova, 2025).



Figure 5. Plates and souvenirs by Mariana Licheva showcasing a contemporary interpretation of tradition, from the Lichev family studio. Photo: Zhenya Georgieva



Figure 6. A contemporary-style plate featuring a spiral and peppers pattern by Neda Licheva. Photo: Neda Licheva's Facebook profile (https://www.facebook.com/photo/ ?fbid=1023895 1619501657&set=pcb.10238951809786414)

Contemporary Bulgarian applied arts, and ceramics in particular, exist within a dynamic dialogue between a rich cultural heritage and the demands of modern aesthetics. A striking example of successfully blending traditional craft skills with an individual authorial vision is found in the work of Ralitsa Yovkova. As a representative of contemporary Troyan pottery and a fourth-generation ceramicist in her family, she grew up in an environment closely tied to Troyan's craft tradition. She graduated from the National School of Applied Arts in Troyan and later from the National Academy of Arts in Sofia in 2001 under the class of the distinguished Bulgarian ceramicist Prof. Krasimir Dzhidrov (Troyan Database), where she deepened her artistic education in ceramics. Her life experience and professional trajectory are deeply rooted in family memory and continuity. As the daughter of the prominent master Nikolay Yovkov, she grew up around the potter's wheel and, like Mariana and Neda Licheva, shares that the scent of clay was deeply imprinted on her mind from early childhood. She does not remember her grandfather, who was also a master potter, but admires his plates painted with "Zahari bouquets" (*zaharievi kitki*) (FNAIF 3473, FNAIF 3470). In her work, Yovkova combines traditional wheel-throwing techniques and motifs with a modern design approach to decoration, developing authorial ceramics grounded in the legacy of Troyan pottery while interpreting it within a contemporary visual context.

The technological process in her studio is characterized by extreme precision, patience, and a deep understanding of the physical and chemical properties of the raw materials. Fully completing even a single vessel requires approximately two weeks of intensive, entirely manual labor, she explains. Every stage – from shaping on the wheel to uniform drying – demands a specific microclimate to prevent thermal distortion and cracking in the living clay. For her, the most exciting stage of production is decoration and painting, where creative ideas and personal experiments reach visual completion. Nevertheless, the path to achieving a flawless vessel is long and accompanied by numerous trials with colors and firing cycles (FNAIF 3473).

From a stylistic standpoint, Ralitsa Yovkova's work distances itself from traditional Troyan ceramics in terms of ornamentation and color schemes, though remaining technologically bound to it through the use of the same tools and raw materials utilized by her grandfather (Todorov, 2015). Her distinctive signature is recognized through sharp contrast, graphic qualities, and a minimalist vision that elevates her vessels into works of art (**See Fig. 7 and 8**).



Figure 7. A plate featuring a contemporary interpretation of the Troyan pattern (*sharka*), custom-made for a prominent Bulgarian furniture company. Limited edition.
Photo: Courtesy of Ralitsa Yovkova



Figure 8. A ceramic mug from Ralitsa Yovkova's new blueberry line. Photo: Ralitsa Yovkova's personal Facebook profile (https://www.facebook.com/photo.php?fbid=26705932555662582&set=pb.100000175995131.-2207520000&type=3).

The final example of contemporary Troyan ceramics examined in this study is Nadezhda Hristova and her studio, "The World of Hope," where she develops personal ceramics with a strong individual style. She holds a distinctive place through her ability to combine traditional craftsmanship with the pursuit of new artistic expressions. She has been practicing ceramics for nearly three decades. After graduating from the National School of Applied Arts in Troyan in 1995, she worked in various ceramic production factories in the town, honing her skills as a thrower, and later worked in Ralitsa Yovkova's studio as a decorator (*sharach*). The practical experience she accumulated established her high level of technical expertise, making her one of the finest throwers in Troyan today. For several years, she has been developing her own studio, producing both commercial wares for the broader market and artistic compositions designed for exhibitions and collectors. According to her, market demand significantly shapes her individual style, as functional ceramics call for modern decorative motifs, whereas the traditional Troyan pattern (*sharka*) finds its place primarily in her art pieces (**See Fig. 10**). In recent years, Nadezhda Hristova has deliberately deepened her study of traditional Troyan ornamentation with the intent of interpreting it in a modern way (FNAIF 3530). She presented such works at the International

Ceramic Exhibition in Jingdezhen, China (Georgieva, 2024), subsequently developing new compositions for the upcoming "Troyan Master 2026" competition. Nadezhda does not view tradition as a static model, but as a living cultural resource to be reinterpreted through modern design and creative experimentation. A signature feature of her pieces is the hand-sanding of the engobe surface prior to glazing, which imparts a distinct effect of a naturally aged texture (**See Fig. 9**). Nadezhda also makes a vital contribution to preserving the craft. In 2015, she was among the founders of the Guild of Masters of Folk Fine Crafts – Troyan, where she serves as president. Concurrently, she teaches children at the Center for Personal Development as well as in her own studio, thereby securing intergenerational continuity. Her conviction that tradition must not fade into obscurity finds expression both in her public efforts to promote the Troyan pattern and in her drive to give it a fresh, relevant artistic resonance (FNAIF 3530).

The featured artisans demonstrate varying strategies for engaging with tradition, united by the fact that they work entirely by hand without using molds. They clearly outline the living and adaptable nature of lo-



Figure 9. Cups featuring floral motifs and a distressed/sanded-down effect, crafted by Nadezhda Hristova.
Photos: Personal archive of Nadezhda Hristova

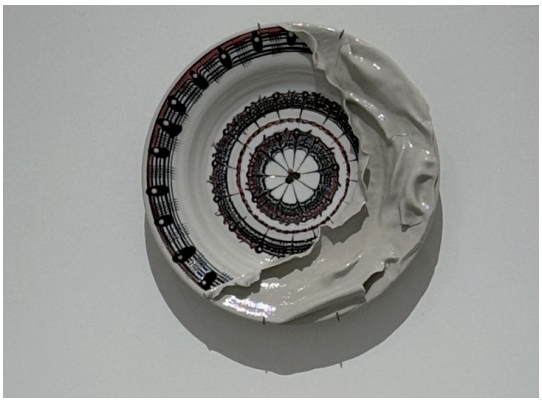
cal heritage. Miroslav Yankov and the Iliev family display a stronger orientation toward preserving classic forms and decorative principles. At "NeDa" Studio, tradition serves as a launching point for experimenting with form, material, and concept. Ralitsa Yovkova and Nadezhda Hristova utilize traditional techniques to adapt contemporary designs, forging distinct individual styles.

In the context of this study, the term "artistic experiment" (*avtorski eksperiment*) does not signify a rejection of tradition, but rather its creative reinterpretation. It manifests through new forms, alternative decorative solutions, combinations of materials, altered functionality of ceramic objects, or the introduction of modern artistic concepts. Consequently, experiment and tradition are not opposing forces, but interconnected processes of development.

The conclusions reached allow us to summarize that living heritage should not be viewed as a static monument of the past, but as a dynamic system that evolves through continuous transformation and enrichment within the context of the contemporary cultural environment and socio-economic realities.

In this sense, safeguarding intangible cultural heritage does not imply freezing it in time, but sustaining it as a living practice reinterpreted in dialogue with modernity. It is precisely through this adaptation that tradition remains relevant and resilient.

Although the number of masters fully possessing traditional craft skills is declin-



ing, the contemporary artists examined here demonstrate that Troyan ceramics continues to evolve and discover new forms of expression. This confirms its capacity to blend tradition and modern interpretations within a sustainable artistic framework.

Figure 10. A contemporary interpretation of the Troyan pattern (*sharka*) by Nadezhda Hristova for the Bulgarian-Chinese exhibition "Ceramic Transitions" in Jingdezhen, China, 2024. Photo: Personal archive of Nadezhda Hristova

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Съвременната троянска керамика: между традицията и авторския експеримент

Женя Георгиева

Резюме: Настоящото изследване разглежда съвременната троянска керамика като динамично поле на взаимодействие между наследена занаятчийска традиция и индивидуално художествено търсене. Анализът се основава на теренни проучвания, проведени в град Троян и околните села, включващи интервюта с представители на местната керамична общност – майстори, наследили занаята в рамките на семейни традиции. Изследването проследява проявленията на съхраняване на утвърдени естетически и технологични модели, характерни за т.нар. троянска „шарка“ както и развитието на авторски интерпретации и иновативни подходи. От една страна се открояват практики, насочени към поддържане и възпроизвеждане на утвърдени орнаментални и формообразуващи принципи, възприемани като носители на локална идентичност и културна приемственост. От друга страна, се наблюдават процеси на експериментиране с нови декоративни решения, форми и функционалности, които отразяват както личния творчески почерк на майсторите, така и адаптацията към съвременните пазарни изисквания.

Ключови думи: троянска керамика, традиция, индивидуален талант, нематериално културно наследство, занаятчийски практики



Figure 11. Plates and traditional clay casseroles (gyuvech) with Trojan drop decoration from the Yankov family workshop. Photo Zhenya Georgieva.

Folk Medicine – Cupping Therapy (Funduzi)

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Abstract: ***Folk medicine*** *is a complex cultural and historical phenomenon that brings together centuries-old traditions, empirical knowledge, and philosophical beliefs of various peoples. It can be defined as part of Bulgarians' everyday experience in maintaining and restoring health. One of the most emblematic and oldest methods in our folk medicine, preserved to this day, is* ***Cupping Therapy (CT). Cupping therapy****, or "funduzi" (as it is known in some dialects), as it is called in our lands, has been a leading remedy for treating a number of diseases. However, the mechanism of its action is not fully understood (Ghods, Sayfouri and Ayati, 2016 ; Al-Bedah, 2019).This review aims to analyze the historical development of Cupping Therapy and to identify possible mechanisms of its action from the perspective of modern medicine, as well as to propose possible explanations for its effects.*

Keywords*: historical heritage; Cupping Therapy; physiological mechanisms*

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FOLK MEDICINE AS A CULTURAL AND HISTORICAL PHENOMENON[1]

Folk medicine is an important part of folk culture, in which religious beliefs, rational knowledge, cultural rituals, superstitions, healing practices, and deep rational knowledge are intertwined. It represents folk wisdom that has stood the test of time in the field of so-called alternative, unconventional medicine. In the recent years, there has been a growing interest in folk healing practices. The interest in it is understandable, and the focus on the traditions of folk medicine is most timely, presenting it precisely as a rich, thousands-of-years-old system of knowledge and accumulated experience. We have witnessed its development over the centuries, as it has shed "the magic and enrichment itself" with the methods and tools of scientific medicine. The interaction between folk and scientific medicine is undeniable. Historical facts show that scientific medicine is the offspring of folk medicine, and that it has systematically adopted the best achievements (Todorova, 2019).

[1] ChatGPT is used for English grammar revision and translation.

The purpose of this study is to examine the traditions and innovations in the application of cupping therapy, their development over time, and their mechanism of action, their functional characteristics and their ability to protect and preserve people's health today.

HISTORICAL AND CULTURAL CONTEXT

The development of knowledge about CT has a long history. It is an ancient healing practice known in nearly all major civilizations. For centuries, this method of treatment has been practiced, becoming a unique imprint of its time that has carried over to the present day.

- **Ancient Egypt and Greece**: Cupping therapy was first mentioned and described in the 'Ebers Papyrus' (1550 B.C.), the oldest medical manuscript. In Greece, it was used by Hippocrates and was part of the methods for "extracting diseased fluids" from the body (Xun, Hon and Shih Chau, 2018).
- **Eastern tradition:** In Traditional Chinese Medicine, cupping is used to regulate the life energy "Qi" and improve blood circulation (Tao and Qu, 2009 ; Xun, Hon and Shih Chau, 2018).
- **The Islamic world:** The practice is known as **"Hijama"** (capillary bloodletting) and is closely linked to spiritual and religious traditions (Big Box Labs, 2018).
- **Bulgarian lands**: Archaeological evidence proves that cupping was used as early as the First and Second Bulgarian Empires as part of local folk healing practices (BNT, 2017).

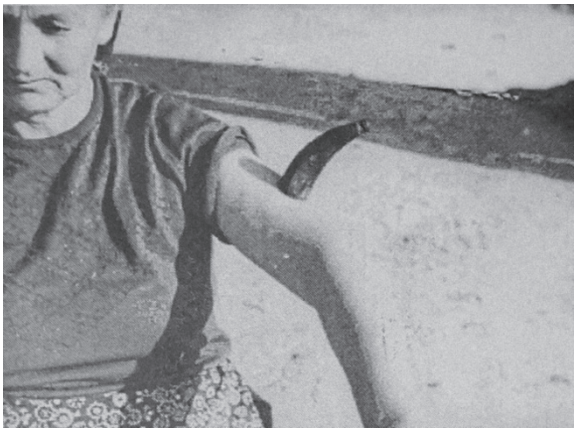
FOLK MEDICINE AS A CULTURAL AND HISTORICAL PHENOMENON

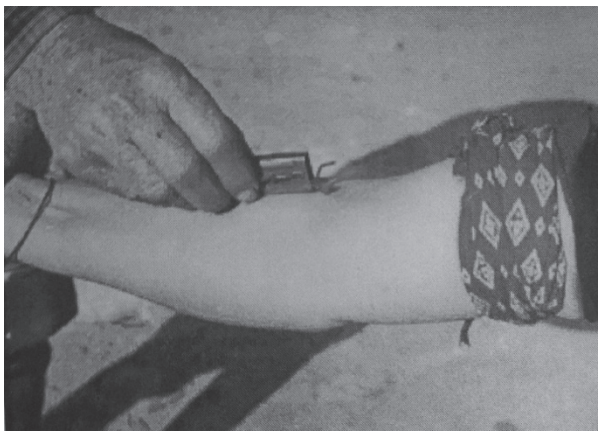
Cupping, or "funduzi" as it is known in our region, has been a primary method of treating a variety of diseases. In order to do this, a vacuum is created on the skin using specially crafted glass cups of a specific shape and size, medium-sized wine glasses with thick, even rims, animal horns, glass bottles, and the application of hard clay pots (based on the principle of cupping) (Stefanov, 2006). CT are used to treat the flu, the cold, and a sore throat (Tzvetkov, 2013); they are also used to treat colds and pneumonia (Marinska, 2025), stinging, cough, shortness of breath, rheumatism, bruises, boils, infertility, heartache, bloodletting, etc. They had been placed by healers and relatives of the patients on the back, chest, lower back, hips, and directly on the affected area. The number of cups depends on the size of the area affected. The CT had been placed immediately after their walls were burnt. When the cup is positioned correctly, the skin beneath it swells and turns blue. The cups had been left on children for about 10 minutes and on adults for about 20 minutes. After removing them, the area had been rubbed with olive oil or petroleum jelly, or a bath or compress was given. The principle of CT had been used to draw out pus from a boil by placing the mouth of a heated bottle on it; to place a pot on the navel in cases of heartache and an enlarged navel, as well as a horn on a bruised area (Yaneva-Balabanska et al., 2018, p. 119-120).

TOOLS AND REMEDIES OF THE PAST

Bloodletting (BL) using a CT or a horn had been also a primary therapeutic method in the past. It is an ancient healing ritual, attested to both in Old Bulgarian written sources and by travelers who had visited our lands. BL is a widely used treatment for stings, burns, high blood pressure, coughs, headaches, tuberculosis, rabies, and other illnesses. BL is based on the need to purify the blood, the impurity of which (bad blood) is the cause of the diseases mentioned, especially in a person who "eats fatty foods and drinks strong wine." People say of such individuals: "a person with a lot of blood," "the blood has gotten the better of him," "blood brings trouble," or that a person "walks through fire" or "a burden has fallen upon his body." Leeches or special instruments were used for this purpose. Most often, this had been done as follows: the arm is tightened and then pierced with a sharp knife or a special tool called a "neshterche" (scarifier) (Figs. 1 and 2). An animal horn is placed over the made incision, and the blood is drawn out using a vacuum. Bloodletting is also performed at other points on the body—

under the tongue, on the forehead, on the back, and on the shoulders (Kableshkova, 2003 ; Yaneva-Balabanska et al., 2018). After the BL, bleeding is stopped, and the patient rests for up to half an hour and takes the appropriate medications. Old folk medicine books are full of recommendations for KP for many diseases (Yaneva-Balabanska et al., 2018).





Figures. 1 and 2. Bloodletting with neshterche (scarifier) and a horn

THE ESSENCE OF THE METHOD

Cupping therapy is a type of physiotherapy in which specially designed cups are applied to specific acupoints or areas of the body in order to create localized congestion or stasis using negative pressure, either through heat or mechanical suction (Dimitrov, Staykova and Pirovski, 2020, p. 36-40 ; Xun, Hon and Shih Chau, 2018 ; Tao and Qu, 2009).

MECHANISM OF ACTION

1. Mechanical and warming stimulation – CT induce a form of mechanical and warming stimulation in the treated tissues.

2. They regulate yin-yang energy, replenish protective qi, and eliminate pathogenic factors. CT can regulate yin-yang energy through various combinations of acupoints or in combination with other therapies.

3. Cleansing the meridians and the circulation of qi and blood, especially where there is stagnation of qi and blood. They also activate the functions of the internal organs.

4. Establishing two-way regulation and treating multiple pathologies using the same point in a single therapy session (Xun, Hon and Shih Chau, 2018 ; Tao and Qu, 2009).

FUNCTIONAL CHARACTERISTICS OF CUPPING THERAPY

Functions

1. Regulating the body's balance – CT can regulate the body's balance, stimulate effective exchange between the blood and tissues, modulate the expansion and contraction of capillaries, and improve local blood circulation. They have a regulating effect on metabolism, ensure better local nourishment of cells, and regulate lymphatic circulation by enhancing phagocytosis of lymphocytes, thereby eliminating pathogenic conditions and restoring normal body functions.

2. Replenishing protective qi and eliminating pathogenic factors—CT can draw out pathogenic factors from the body—such as wind, cold, dampness, and heat—while replenishing protective qi.

3. Draining and improving the flow of energy channels/meridians - CT can effectively improve circulation and the smooth flow of qi and blood in the meridians and activate the function of the internal (Zang-Fu) organs through various CT techniques—static, dynamic, and blood-letting CT.

4. Lubrication of the joints – as CT can dispel cold and wind, disperse dampness, and improve the circulation of qi and blood, they thereby lubricate and nourish the joints and relieve joint pain.

5. Removing toxic substances from the body and draining pus – by applying stronger negative pressure, cupping can be used to treat internal conditions such as boils, carbuncles, wounds, ulcers, stagnant blood, and the accumulation of toxic substances. In cases of suppuration, cupping can draw out pus, relieve pain, and accelerate the healing process (Xun, Hon and Shih Chau, 2018 ; Tao and Qu, 2009).

A CONTEMPORARY APPROACH

Although cupping therapy is a treatment that dates back centuries and had been used by various cultures and societies, its mechanism of action is not well understood. Today, cupping therapy is being rediscovered by modern medicine as a complementary therapy in rehabilitation for various musculoskeletal disorders of the musculoskeletal system, to relieve pain symptoms, as a restorative method in sports, to improve quality of life, and to support the body's natural healing processes.

1. How do cupping therapy work? The physics of decompression

A vacuum is created by drawing the skin into the cupping cup. This causes increased blood flow, drawing blood to the surface, which improves microcirculation. The fascia is stretched, which relieves tension in the muscles, allowing them to relax. When the cupping cup is applied and a vacuum is created, the skin is drawn upward and inward into the cup. During suction, blood is "drawn" toward the surface, and blood vessels enlarge due to the action of certain vasodilators such as adenosine, noradrenaline, and histamine. As a result, blood circulation in the affected area increases. This allows for the instant elimination of toxins trapped in the tissues, thereby detoxifying the body. The capillaries expand, and in areas of the body with issues (affected areas), some of them may rupture slightly (which is why redness or purple discoloration occurs after CT). Microcirculation increases from within, blood flows upward, stagnant blood begins to circulate, lymphatic flow is activated, and nerve endings are stimulated (Al-Bedah et al., 2019, pp. 90-97).

REGISTRATION OF GENERAL AND PATHOLOGICAL REACTIONS AFTER APPLICATION OF CUPPING THERAPY. TRACE DECODER (Fig. 3).

After the suction cups are removed, the skin may turn reddish or develop purplish-reddish spots (ecchymosis). These marks are a natural reaction of the body, and these changes usually disappear over time, depending on the body's initial condition.

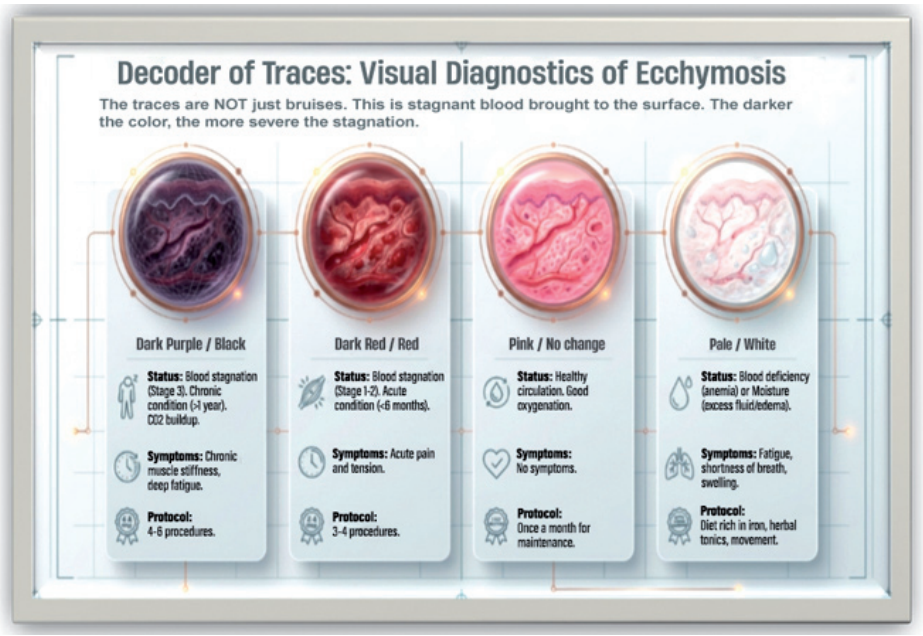


Figure 3. Trace decoder. Visual diagnosis of ecchymosis

This isn't just a bruise, but "stagnant" blood and lymph that has been drawn to the surface; the darker the discoloration, the more stagnation there was, which the body then breaks down and clears away. **After the cupping cup is removed**, the blood begins to flow back as a new, fresher supply of blood arrives, effectively "resetting" the treated area. Simply said, CT does this (**Fig. 4**):

☞ → pulls → loosens → activates → clears

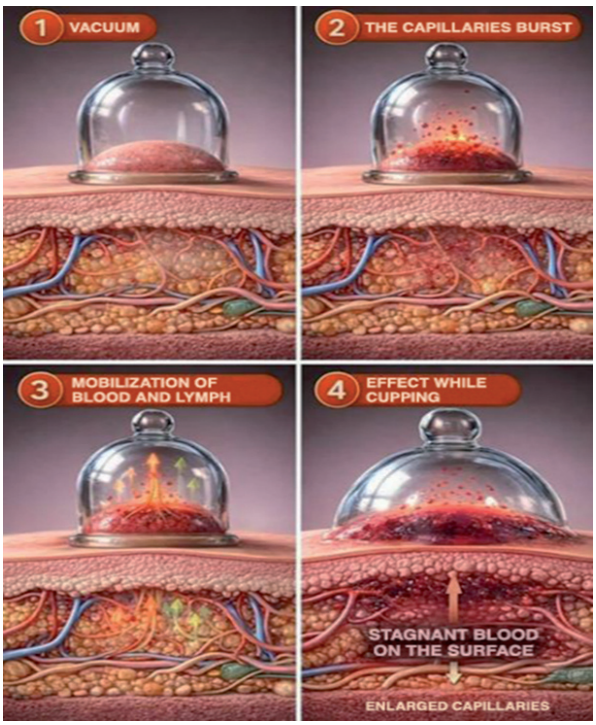


Figure 4. Mechanism of action of Cupping Therapy

How do suction cupping work? Six scientific mechanisms of action

Many theories have been proposed to explain the numerous effects of cupping therapy and its mechanisms of action. A recent review of the scientific literature identifies six main mechanisms of action at the cellular and systemic levels:

1. The Gate Control Theory of Pain. The Gate Control Theory of Pain, proposed in 1965 by Ronald Melzak and Patrick Wall, explains how the nervous system modulates pain signals. According to this model:

- **Small nerve fibers:** They transmit pain signals. When they are active, they open the "gate", allowing the signal to reach the brain.
- **Large nerve fibers**: They transmit non-painful sensory signals (touch, pressure). Their activity stimulates inhibitory (suppressing) neurons in the spinal cord, which "close the gate" and block the passage of pain impulses

This explains why instinctively rubbing an injured area relieves pain—stimulating the touch receptors sends signals along the large nerve fibers, which suppress the pain (Ahmadi, Schwebel and Rezaei, 2008 ; Moayedi and Davis, 2012). This theory forms the basis of modern pain management methods, such as:

- The use of TENS (transcutaneous electrical nerve stimulation) devices
- Application of therapeutic massage and acupuncture (Science Direct, n.d.).

2. Diffuse Noxious Inhibitory Control (DNIC). Diffuse Noxious Inhibitory Control **(DNIC)** is a natural pain-relieving mechanism of the central nervous system, known as **"pain suppresses pain."** In this process, the application of a second, distant, and strong stimulus (e.g., immersing a hand in ice water) reduces the perception of the initial pain (Morgan and Whitney, 1996 ; Le Bars, Villanueva and Willer, 1991).

Mechanism of action

- **Process**: The activation of nociceptors (pain receptors) by the second stimulus triggers descending nerve pathways (from the brainstem to the spinal cord).
- **Result:** These pathways suppress the activity of sensory neurons in the spinal cord that transmit pain signals.
- **Biochemistry:** The process is primarily mediated by the neurotransmitters, noradrenaline and serotonin (Sherman, 2016 ; Schouenborg and Dickenson, 1985).

3. The theory of reflex zones. Reflexology demonstrates the existence of a neurological connection between specific zones that, through nerve pathways, correspond to certain internal organs and systems. This connection is established by applying pressure to specific reflex points (through massage or cupping) located on various areas of the human body, thereby sending impulses to the corresponding organ via nerve pathways, which aids blood circulation and relieves

tension (Schouenborg and Dickenson, 1985 ; Marquardt, 2000), and the pulses sent have a soothing and healing effect (Lett, 2000).

4. Release of nitric oxide. Vacuum therapy stimulates the local production and release of nitric oxide (NO) in the treated tissues. The vacuum increases blood circulation and causes microtraumas that trigger the body's immune response (Moncada, Palmer and Higgs, 1991).

Mechanism of action:

• ***Vasodilation***: Released NO acts as a powerful vasodilator (it widens blood vessels). This improves the flow of oxygen and nutrients to the muscles and skin (Jin, Liu, Meng, Li and Guo, 2010 ; Tian, Qin and Zhang, 2007 ; Ernst and Lee, 1986).

• ***Angiogenesis:*** This process stimulates the formation of new capillaries, promoting long-term recovery;

• ***Pain relief:*** NO modulates nerve signals and helps clear inflammatory mediators and lactic acid from the treated areas quicker.

Health benefits:

• Boosting cellular metabolism and lymphatic drainage:

• Relief from muscle spasms, chronic back pain, and joint pain.

• Boosting overall immunity as a result of local stimulation.

5. Activation of the immune system. Cupping therapy stimulates the immune system through localized vacuum pressure, which improves blood circulation and lymphatic drainage in the treated area. This accelerates the movement of white blood cells, helps eliminate toxins, and activates the body's natural defense mechanisms against colds, muscle aches, and inflammations (Mohammad Khalil, Mahmoud Al-Qaoud and Shaqqour, 2013).

How do cupping therapy support the immune system?

• Chen and Li (2004) claim that cupping therapy is a form of autohemolysis that can produce histamine-like substances and thereby enhance tissue and organ activity, as well as immunity. A recent study by Yang Guo et al. (2017) suggests that the microenvironment changes when the skin surface is stimulated, and physical signals are transformed into biological signals that also interact with one another within the body. These signaling cascades activate the neuroendocrine-immune system, producing a therapeutic effect (Al-Bedah et al., 2019).

• ***Enhanced circulation:*** The vacuum attracts oxygen- and nutrient-rich blood to specific areas, which helps with tissue repair.

• ***Lymphatic drainage:*** Stimulates the lymphatic system, which is responsible for cleansing the body of pathogens and waste products.

• ***Stress relief:*** Reduces physical stress, which often suppresses immune function.

6. *Body detoxification.* Cupping therapy aids in the body's detoxification by stimulating blood circulation and accelerating lymphatic drainage, which facilitates the elimination of metabolic waste from the tissues and activates the body's natural cleansing processes (Daniali, VaezeMahdavi, Ghazanfari and Naseri, 2008 ; Gok, Kazanci, Erdamar and Gokgoz, 2016).

How cupping therapy helps with detoxification:

• ***Lymphatic drainage:*** Stimulates lymph flow to help eliminate toxins.

• ***Microcirculation***: Expands capillaries and increases oxygen flow.

• ***Cellular metabolism:*** Accelerates cell renewal in the treated areas.

• ***Organ facilitation:*** It assists the liver and kidneys by removing waste products locally.

It is possible that these theories interact harmoniously to produce beneficial effects from cupping therapy in the treatment of patients with various conditions and to enhance the well-being of healthy people (Al-Bedah et al., 2019).

IMPORTANT CONTRAINDICATIONS

• In cases of hemorrhage and a tendency to bleed, or persistent post-traumatic bleeding such as hemophilia, purpura, and leukemia; In cases of varicose veins and enlarged capillaries;

• In cases of severe allergic skin irritations (extremely dry or cracked skin, infectious

skin conditions such as scabies, open wounds, or ulcers), varicose (enlarged) veins, deep vein thrombosis, and large blood vessels;

- In cases of malignant skin cancer or if there are localized lesions, wounds, inflammation, eczema, or moles in the treatment area.
- Traumatic fractures;
- In patients with a high fever and convulsions;
- On the abdomen, lumbosacral area and chest of pregnant women, for whom gentle application of the oil is necessary on other parts of the body; During the menstrual cycle
- Patients with advanced stages of tuberculosis;
- In addition, suction cups should not be applied to the heart area in cases of severe cardiovascular disease, heart failure, respiratory failure, or severe edema;
- In people with severe anxiety, generalized convulsions or spasms, manic states, and an inability to communicate effectively;
- In people who have consumed large amounts of food, alcohol, or opiates, or who are malnourished or exhausted;
- On lymph knots and mammary glands, dislocated joints, severe anemia, muscular dystrophy, the placement of static suction cups in children under 2 years of age, abscesses, excessive swelling, pacemakers, the sensory organs, and the genital area.
- Botox and fillers: During a vacuum facial massage, areas where injections have been administered should be avoided, as the vacuum can accelerate their breakdown.

CONCLUSIONS

1. Cuppping Therapy, whether performed on their own or in combination with other physical modalities, demonstrate a high therapeutic effect, enrich treatment approaches, enhance the potential for more effective treatment, and are suitable for treating many conditions (Subev, Atanasova and Nedev, 2015);

2. Cupping therapy helps increasing the blood flow to inflamed areas in the muscles (Rozenfeld and Kalichman, 2016), provide the necessary nutrients to the treated area and enhance healing by shortening the recovery period and enabling athletes to return to training and competition sooner;

3. Cupping therapy can provide pain relief, help reduce symptoms associated with common musculoskeletal disorders, and improve quality of life (Al-Bedah, Khalil and Elolemy, 2011).

4. Cupping therapy can be very relaxing and can help reduce muscle restrictions, scars, and adhesions, as well as reduce swelling and increase range of motion (Komal et al., 2024, p. 109).

5. Cupping therapy is an effective alternative for combating daily and work-related stress; they improve metabolic processes, restore vitality and psycho-emotional balance, relieve fatigue, and eliminate tension in the body.

6. Venduses are a powerful factor in enhancing our functional capabilities and our level of antioxidant protection; they are also very important for accelerating healing processes, facilitating recovery, and strengthening the immune system.

DISCUSSION

A historical review confirms that cupping therapies have ancient origins; over time, as all sciences have developed, they have consistently progressed and been continuously refined. Not a single theory could explain the mechanisms of action behind cupping therapy, along with its numerous effects. It likely triggers multiple effects through multiple mechanisms (Tagil et al., 2014). Through the power of decompression, it removes barriers within the body (pain, toxins, spasms) and awakens its own self-healing and regenerative systems.

Detailed studies on its mechanisms of action, supported by well-developed scientific research, would help ensure the safe and effective use of cupping therapies. However, consulting a specialist is recommended before incorporating this method into treatment programs.

CONCLUSION

Today, we are rediscovering the intelligence of this ancient healing art through the

lens of modern science. Cupping therapy is neither magic nor a substitute for conventional medicine. It is a precise, scientifically proven biomechanical tool. Today, Cupping therapy treatments are becoming increasingly common and popular in SPAs and Wellness centers, massage studios, and specialized physical therapy clinics as a good alternative for treating various health issues and high levels of stress (Dimitrova, 2023).

Cupping therapy is an excellent way to improve health and regain energy. It would be suitable medical wellness tools for many modern health conditions (Dimitrova, 2019 ; Tomova, 2021 ; Nesheva, 2023). The problems facing today's society, caused by a dynamic and stressful lifestyle, are increasingly contributing to rising rates of illness and a decline in quality of life. This is driving greater interest and attention toward finding effective methods, rituals, and approaches for managing stress and discovering unconventional ways to maintain good physical and psycho-emotional health (Chipeva, 2022 ; Ignatova, 2022). The implementation of procedures focused on relaxation and ensuring physical and mental well-being using Cupping Therapy as a therapeutic method - either on its own or in combination with other physical therapies - in the Spa and Wellness industry would be an effective alternative for combating stress and tension (Angelcheva and Tomova, 2025 ; Dimitrova, 2023 ; Dimitrova, 2018 ; Tomova, 2024). There is no doubt that Cupping Therapy will continue to gain recognition and evolve in the future. Time has preserved this valuable practice, which will continue to prove itself as an effective method for preventing illness and maintaining the health of future generations.

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Народна медицина – Вендузи (фъндузи)

Татяна Томова, Мариана Ангелчева

Резюме: Народната медицина е сложен културно-исторически феномен, който обединява хилядолетни традиции, емпирични знания и философски вярвания на различни народи. Тя може да бъде определена като част от всекидневния опит за запазване и възстановяване на здравето. Един от най-емблематичните методи, съхранени и до днес, е вендузотерапията. Това е един от най-старите методи в народната ни медицина. Вендузи или „фъндузи" (известно в някои диалекти), както са наричани по нашите земи, са били водещо средство за лекуване на редица заболявания. За целта се създава вакуум върху кожата, като се използват стъклени, специално изработени чаши с определена форма и големина, животински рогове, стъклени шишета, калени гърнета. Вендузотерапията набира все повече популярност като алтернативен метод за лечение на различни здравословни проблеми.

Ключови думи: *историческо наследство; вендузотерапия; физиологични механизми*

Cultural Tourism as a Means of Improving the Quality of Living Environment in a Peripheral Region in Bulgaria (the Mesta River Region)

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Abstract:

The article analyses the quality of the living environment in four municipalities along the Mesta River (Gotse Delchev, Garmen, Hadzhidimovo and Satovcha) and the possibilities for its improvement through cultural tourism. The region is peripheral, with a weak economy and relatively high unemployment, but it has a rich cultural, historical and natural heritage. A composite index, including economic, social and environmental indicators, shows that despite this heritage, the municipalities lag behind economically and in terms of tourism. In this regard, a model for the development of tourism through four thematic routes is proposed - cultural, ethnographic, natural and festival. This approach does not require large investments, but can increase employment, income, retain young people and extend the stay of tourists. The conclusion is that cultural tourism could be an effective tool for sustainable development and improvement of the living environment through the use of local cultural resources.

Keywords: *cultural heritage; cultural tourism; living environment; peripheral region; River Mesta*

INTRODUCTION

The article examines the quality of the living environment in four municipalities from a peripheral region of Bulgaria along the Mesta River and the opportunities for its improvement through the development of cultural tourism. The municipalities of Gotse Delchev, Garmen, Hadzhidimovo and Satovcha are characterized by relatively weak economic development, depopulation and poor quality of part of the municipal and inter-village road network. At the same time, the region has a rich cultural, historical and religious heritage; well-preserved traditions, crafts and local identity; valuable natural resources; and active local communities.

The comparison of the quality of the living environment of these municipalities together with five other neighbouring municipalities using a composite index shows that despite their rich cultural, historical and natural heritage, they report a weak tourist flow and a low share of tourism in the structure of the local economy. On this basis, a model for the development of tourism through four thematic routes is proposed. The model is based on the existing cultural, ethnographic and natural resources. These thematic routes (cultural-historical, rural, natural and event) would contribute economic benefits, increase local employment, retain young people and, ultimately, improve the quality of living environment in this region.

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THE QUALITY OF THE LIVING ENVIRONMENT IN FOUR MUNICIPALITIES ALONG THE MESTA RIVER REGION

General characteristics of the municipalities

The Mesta River region includes four municipalities – Gotse Delchev, Garmen, Hadzhidimovo and Satovcha. The relief of the region is mountainous with rich water resources from the Mesta River and its tributaries. The economic development of these municipalities is not high. Micro-enterprises from the service sector dominate, followed by those in the industrial and agricultural sectors. The only type of developed transport in these municipalities is the automobile. Transport accessibility is not good. Part of the municipal road network is in poor condition, there are no road signs and plates.

In all municipalities there is a process of depopulation due to high migration and aging of the population. Only for 2024 the municipality of Garmen has a positive natural increase. The mortality rate is lower, but there is demographic aging and an increase in the number of lonely elderly people. The tendency is for the population to migrate to larger settlements. Ethnically, the population in these municipalities is mixed, predominantly including Bulgarians, Bulgarian Mohammedans/Muslims, Turks, Roma and others. Health services are concentrated in the municipality of Gotse Delchev, where the only hospital for active treatment is located. People from other municipalities mainly use the services of this hospital (PIRO of Gotse Delchev, PIRO of Garmen, PIRO of Satovcha, and PIRO of Hadzhidimovo municipalities).

The average gross salary of employees in these municipalities is not high. For example, in the municipality of Gotse Delchev for 2024 it was 708 euros/month, which ranked the municipality in 230th place out of a total of 265 municipalities. In the other three municipality the average gross salary was even lower. The unemployment rate for 2024 was relatively high compared to the national average (4.2%) - from 10.6% in Gotse Delchev municipality to 24.5% in Garmen municipality (Institut za pazarna ikonomika, 2026a).

Analysis of companies from these municipalities shows that the economy is based mainly on textiles and trade (APIS, 2026). Gotse Delchev stands out as a leading economic centre with the largest number of registered companies and the highest average number of employees. Garmen and Satovcha are characterized by smaller-sized companies and lower average profit values. Hadzhidimovo has relatively small companies, but with the highest average profit, which indicates higher productivity or more capital-intensive activities (**Table 1**).

Table 1. General characteristics of the business structure in four municipalities
Source: author's results of data processing from APIS (2026)

Municipality	Number of companies	Average number of staff	Average profit/loss (thousand BGN)
Gotse Delchev	10 332	6.23	26.63
Garmen	4 066	4.95	17.77
Satovcha	3 445	5.66	15.16
Hadzhidimovo	2 546	2.93	45.75

These data confirm the peripheral nature of the region in which the studied municipalities are located. In this analysis, "peripherality" is understood as a complex territorial characteristic, including limited access to specialized services, weaker infrastructure deficits, lower economic diversification and unfavourable demographic profiles (Tsiotas and Tselios, 2023).

Assessment of the quality of the living environment in nine municipalities through a composite index

Methodology for constructing the composite index and its indicators

The concepts of quality of life, quality of living environment and regional well-being are often used as synonyms, but they represent different analytical constructs. Research on quality of life usually integrates objective and subjective aspects of individual well-being, while quality of living environment focuses on the territorial conditions that shape the life of the population – economic, infrastructural and environmental (Rypl, Macků and Pászto, 2024; Uysal, Berbekova and Wang, 2025; Eurostat, 2024).

The approach of a composite index is applied to the analysis of complex and multidimensional phenomena, where individual dimensions cannot be adequately represented by single indicators (Nardo et al., 2005a ; Greco, Ishizaka, Tasiou, and Torrisi, 2019). Since four municipalities are too few for a composite index, we included five more neighbouring municipalities (Bansko, Razlog, Sandanski, Dospat and Sarnitsa), with the focus on the first four.

The structure of the composite index includes three sub-indices – economic, social and environmental and corresponds to the so-called pillar-based approach (OECD, 2008 ; Purvis, Mao and Robinson, 2019). In total 24 indicators were used, grouped into three sub-indices: economic, social and environmental. The data were taken from the initiative "265 Stories about Economics" (Institut za pazarna ikonomika, 2026a).

With 10 indicators, the economic sub-index covers: entrepreneurship and economic activity; employment and income; local finances; tourism economy. The focus of the social sub-index is on: human capital; demography; education; health and social services with 11 indicators. The environmental sub-index refers to: environment and includes 3 indicators: share of recycled household waste; state of national roads; share of solar RES. Environmental conditions are an important dimension of well-being, especially in peripheral and mountainous areas, where household practices and infrastructure deficits have a significant impact on daily life (OECD, 2008 ; Eurostat, 2024).

All indicators are normalized respectively for positive indicators according to the scheme: (value of x – x minimum) / (x maximum – x minimum), and for negative indicators – vice versa (x maximum – value of x) / (x maximum – x minimum). Thus, all indicator values are between 0 and 1, with 1 being the best performance and 0 being the worst performance. Each sub-index represents an average value of the normalized indicators in the group. Initially, the index was calculated with equal weights for all indicators and sub-indices (Carrino, 2017), and additionally, a sensitivity analysis was conducted for alternative weighting schemes.

Results

Table 2. Results of sub-indices and of a composite index for 9 municipalities

Rank	Municipality	Economic	Social	Ecological	Composite index
1	Bansko	**0.886**	0.415	0.598	**0.633**
2	Gotse Delchev	0.415	**0.638**	**0.709**	**0.587**
3	Razlog	**0.581**	0.524	0.599	**0.568**
4	Sandanski	**0.587**	0.490	0.454	**0.510**
5	Satovcha	0.124	0.424	**0.781**	0.443
6	Garmen	0.090	0.563	0.616	0.423
7	Hadzhidimovo	0.200	0.255	**0.731**	0.395
8	Sarnitsa	0.067	0.412	0.404	0.295
9	Dospat	0.248	0.317	0.190	0.252

The results of the calculation of the composite index and the sub-indices are presented in Table 2, and visually – in Fig.1.

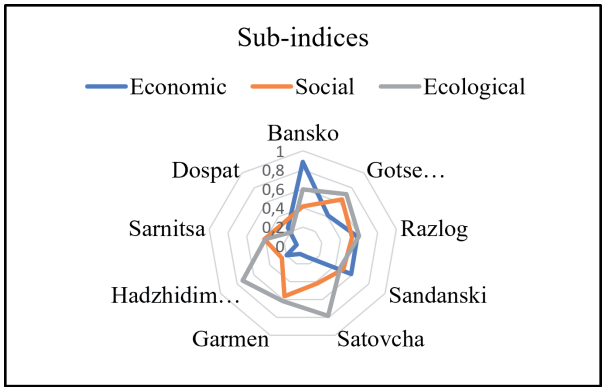

Figure 1. Ranking of municipalities by 3 sub-indices

The values of the composite index outline significant differences between the studied municipalities. Bansko comes in first place mainly due to the economic sub-index: tourism (volume and revenues), income, entrepreneurship, renewable energy and infrastructure. Gotse Delchev occupies a second place mainly due to the high social sub-index (education, services and lower crime). Razlog and Sandanski have a balanced profile with a more stable socio-economic structure. Satovcha, Hadzhidimovo and Gotse Delchev also stand out with real environmental advantages. In general, however, smaller municipalities are structurally limited by demography, economic scale and access to services (Decancq and Lugo, 2013).

As the composite indices are sensitive to the choice of normalization, weights and aggregation, the sensitivity analysis was conducted (Saltelli et al., 2019). The weight scenarios studied are the following (Table 3).

Table 3. Weight scenarios studied

Scenarios	Economic	Social	Ecological
Equal weights (base)	1/3	1/3	1/3
Economic focus	0.50	0.30	0.20
Social focus	0.30	0.50	0.20
Environmental focus	0.30	0.20	0.50

The ranking of municipalities under these scenarios is shown on **Table 4**.

Table 4. Ranking of municipalities under 4 scenarios with different weights

Municipality	Equal weights	Economic focus	Social focus	Ecological focus
Bansko	**1**	**1**	**1**	**1**
Gotse Delchev	**2**	3	**2**	**2**
Razlog	**3**	**2**	**3**	**3**
Sandanski	**4**	**4**	**4**	5
Satovcha	5	5	6	4
Garmen	6	6	5	7
Hadzhidimovo	7	7	7	6
Sarnitsa	8	9	8	8
Dospat	9	8	9	9

Bansko is the undisputed leader in all scenarios, regardless of the focus. The first four municipalities (Bansko, Gotse Delchev, Razlog, Sandanski) remain the same under all weighting schemes. There is no "reversal" of the ranks, which confirms the internal consistency of the index.

Additionally, the composite index for the 9 municipalities was calculated without the tourism indicators with the remaining indicators being retained (**Table 5**).

Table 5. Ranking of municipalities by index with tourism and index without tourism

Municipality	Index with tourism	Index without tourism	Difference (with - without)
Gotse Delchev	**0,470**	**0,526**	-0,056
Hadzhidimovo	0,382	0,415	-0,033
Garmen	0,405	0,447	-0,042
Satovcha	0,313	0,343	-0,030
Sandanski	0,439	0,469	-0,030
Bansko	**0,553**	**0,495**	0,058
Razlog	**0,495**	**0,523**	-0,028
Dospat	0,284	0,304	-0,021
Sarnitsa	0,293	0,328	-0,035

The comparison of the ranking of municipalities in the index with and without tourism shows that Bansko clearly "wins" from the inclusion of tourism indicators. Gotse Delchev and Razlog retain their positions as having more balanced development outside of tourism. Small and peripheral municipalities are practically not affected by the removal of tourism (**Table 5**). Therefore, the municipalities along the Mesta River can improve their composite index through more active development of tourism or another alternative source of income

Compared to the leading tourist municipalities in Bulgaria, the four municipalities along the River Mesta report a relatively weak tourist flow (**Table 6**). None of these municipalities reported more than 40 thousand overnight stays, with the exception of the municipality of Garmen in 2023. The number of overnight stays in the municipality of Hadzhidimovo is particularly low.

Table 6. Overnight stays in 9 municipalities

Municipalities/years	2021	2022	2023	2024	2025
Bansko	151774	233562	307294	313830	309965
Sandanski	83253	113565	142263	146281	151205
Razlog	71888	107916	132173	144672	140262
Garmen	26131	28856	41004	34288	38106
Gotse Delchev	15396	19353	19084	18656	20114
Dospat	5044	5951	9470	10395	10290
Hadzhidimovo	1423	2108	936	1206	n.i.
Satovcha	n.i.	n.i.	n.i.	n.i.	n.i.
Sarnitsa	n.i.	n.i.	n.i.	n.i.	n.i.

Source: Institut za pazarna ikonomika (2026b).

These data again suggest that despite the cultural, historical and natural heritage of the municipalities along the River Mesta, it is not sufficiently socialized to attract more visitors.

CULTURAL TOURISM AS A MEANS OF IMPROVING THE QUALITY OF LIVING ENVIRONMENT IN THE MUNICIPALITIES ALONG THE MESTA RIVER

The route model as a strategic solution

The development of tourism in the municipalities of Gotse Delchev, Garmen, Hadzhidimovo and Satovcha can be based on capitalization of existing cultural-historical, religious, ethnographic and natural resources, and not on the construction of infrastructure and capital-intensive tourist complexes. The region has a high concentration of sites of national and international importance - archaeological reserves (Nikopolis ad Nestum), architectural reserves (Kovachevitsa, Leshten, Dolen), religious complexes (St. George the Victorious Monastery – Hadzhidimovo), as well as intangible heritage included in the UNESCO lists (high singing in the Satovcha municipality) (https://www.uvanestum.com/en/experience). The idea is how to turn this rich heritage into an "experience".

The studied municipalities cannot compete with developed resorts with mass winter tourism and large hotel complexes, such as Bansko or Sandanski. It is appropriate for them to start developing *route-based tourism* (1–3 days); slow tourism; cultural-historical and ethnographic tourism; hiking, pilgrimage and festival tourism, i.e., tourism without heavy infrastructure, but with local employment (Pedrosa, Martins, and Breda, 2022). The main idea is to connect the municipalities in thematic routes, and not each municipality on its own (Dayoub B., Yang, Dayoub, A., Omran and Li, 2020). This would ensure a longer stay (2–4 nights for the entire region), more local services (food, guides, crafts, transport), and a more even distribution of benefits.

This model for the development of tourism through thematic routes has the following advantages: it does not require significant investments in road or hotel infrastructure; corresponds to the current tourist capacity of the municipalities; encourages the participation of local communities, community centers, LAGs and NGOs. The specific routes allow the transformation of individual sites and holidays into a connected tourist experience, which extends the stay and increases local income. Such tourism would contribute economic benefits through more local employment – with small but higher incomes for many households; sustainability due to non-seasonal dependence and retention of young people as entrepreneurs, guides, etc. (Beltramo, Taglio, and Bonadonna, 2025).

Tourist routes as a tool for economic development

Four thematic routes are proposed, in which specific objects of the tangible and intangible cultural and natural heritage are integrated: Route A – cultural; Route B – rural / ethnographic; Route C – natural / eco; Route D – event (festival). The integrated specific objects are: monastery "St. George the Victorious"; architectural reserves (Dolen, Kovachevitsa, Leshten); Nikopolis ad Nestum; ecozones "Belite Skali", "Omaya"; maintained reserve "Konski Dol". The intangible cultural heritage (high singing) is also included, as well as natural landmarks and ecozones (**Fig. 2**).



Figure 2. Proposed tourist routes[1]

Route A "River Middle Mesta – Culture, Memory and Faith" is a cultural-historical and pilgrimage type and includes the municipalities of Gotse Delchev → Garmen → Hadzhidimovo. The route offers a journey through the history, spirituality and cultural memory of the region – from the Bulgarian National Revival tradition to the ancient heritage and living religious faith. The specific sites along the route are as follows (**Fig. 3**):



Figure 3. Route A

[1] The visual schemas of the routes are made with the help of AI

- 🏛️ Historical Museum - Gotse Delchev (anchor site)
- ⛪ Cathedral "St. Cyril and Methodius and St. Elijah"
- 🕌 Mosque "Karaja Pasha"
- 🏘️ Renaissance village of Delchevo
- 🏺 Nikopolis ad Nestum (national significance)
- 🏘️ Architectural reserves Kovachevitsa and Leshten
- 🙏 Monastery "St. George the Victorious"

Route B "Living Rhodopes – Village, Craft and Intangible Culture" is a type of ethnographic/rural route related to "experience", and includes the municipalities of Satovcha → Garmen → Hadzhidimovo. The route offers a touch of authentic life in the Rhodopes – traditions, customs, music and craftsmanship. The specific sites along the route are as follows (**Fig. 4**):



Figure 4. Route B

- 🏘️ Architectural reserve of the village of Dolen
- 🎶 High singing (UNESCO)
- 🎭 Traditional customs ("Pryadai", "Navik")
- 💍 Wedding rituals in the village of Ribnovo
- 🧶 Crafts and community centre activities
- 🍲 Traditional local cuisine

Route C "Nature and Man in the Western Rhodopes" is a type of natural, eco and educational tourism and includes the municipalities of Satovcha → Hadzhidimovo → Gotse Delchev. The route offers harmony between man and nature – protected areas, biodiversity and environmental education. The specific natural sites are as follows (**Fig. 5**):



Figure 5. Route C

- 🌲 Konski Dol Reserve
- 🌿 Manastirishteto Protected Area
- 🪨 Belite Skali Ecozone and Nevrokop Fish Farm
- 🌊 Omaya Ecozone (village of Gaitaninovo)
- ⛰️ Connection with nature routes to Slavyanka and Stargach



Route D "Cultural Calendar of the Four Municipalities" is a type of event-based tourism, including cultural events in all municipalities. This is a dynamic route that follows the rhythm of local holidays and events throughout the year. Main events are among others the following (**Fig. 6**):

Figure 6. Route D

- 🎉 Holiday of the town of Gotse Delchev
- 🎶 Festival "Folklore Trails" - village of Breznitsa
- 🪗 Traditional fairs and holidays in Satovcha and Garmen
- 🙏 Pilgrimage holidays in Hadzhidimovo

A summary of route types, core value, and target audience is given in Table 7.

Table 7. Summary of Routes

Route	Type	Core value	Target audience
A	Cultural-Historical	Heritage and Spirituality	Cultural tourists, pilgrims
B	Ethnographic	Living Tradition	Foreign tourists, lovers of authenticity
C	Natural	Ecology and Nature	Ecotourists, families
D	Cultural events	Traditions and memory	Local people and tourists

The directions of route A (Culture and Faith) are: from Gotse Delchev (villages of Delchevo/Breznitsa) to the village of Garmen (Nikopolis ad Nestum/villages of Kovachevitsa and Leshten) and from there to Hadzhidimovo (Monastery of St. George the Victorious).

The directions of route B (Living Rhodopes) are: from the village of Satovcha (villages of Dolen, Valkosel and Slashten) to the village of Garmen (village of Ribnovo) and from there to Hadzhidimovo (kitchen/guest houses).

The directions of route C (Nature) are from the village of Satovcha (Konski dol area) to Hadzhidimovo (Ecozone Omaya/Manastirishteto), from there to Gotse Delchev (White Rocks/Nevrokop) and connections to the Slavyanka and Sturgech mountains.

The directions of route D (Events) depend on the relevant holidays and events between the four municipalities.

The expected economic effects for people and local businesses from the proposed routes are given in Table 8 (See also Acampa and Pino, 2026 ; Apostolakis and Viskadouraki, 2017).

Table 8. Expected economic effects of the proposed tourist routes

Object / Event	Route	Municipality	Main economic impact
House of Culture	A – cultural	Gotse Delchev	Cultural visits, services, establishments
Historical Museum (after renovation)	A	Gotse Delchev	Guided tours, educational tourism
Folklore Trails Festival – Breznitsa	D – event	Gotse Delchev	Peak income, crafts, accommodation
Architectural Reserve Nikopolis ad Nestum	A	Garmen	Year-round cultural flow
Architectural Reserves Kovachevitsa and Leshten	B – village	Garmen	Guest houses, local products
Traditional Weddings – Ribnovo	B	Garmen	Experience tourism, services
St. George the Victorious Monastery	A / D	Hadzhidimovo	Pilgrimage tourism, food, trade
St. Dimitar Fortress	A	Hadzhidimovo	Cultural and historical visits
White Rocks + Nevrokop Ecozone	C – natural	Hadzhidimovo	Ecotourism, guides, small groups
Dolen Architectural Reserve	B	Satovcha	Overnight stays, handicrafts
High Singing (UNESCO)	B / D	Satovcha	Cultural image, festival tourism
Custom “Pryadai / Navik”	B	Satovcha	Events, local products
Supported Reserve “Konski Dol”	C	Satovcha	Nature, educational tourism
Cultural Festivals (Vaklinovo, etc.)	D	Satovcha	Temporary employment, direct sales

The specifics of these routes are that one site performs several functions (e.g., the St. George the Victorious Monastery offers both cultural and event tourism). One route implies small revenues, but distributed among more households, and small and medium-sized businesses. Each of the routes is associated with low investment risk, since existing heritage is used.

The integration of specific cultural and natural sites into a route structure can turn the currently weak tourist flow along the Mesta River into a real opportunity for sustainable economic development, based on identity, authenticity and local resources (Beták, Suchánková, and Vitková, 2025; Mitrović et al., 2023).

CONCLUSIONS

The analysis of the quality of the living environment in the municipalities along the Mesta River confirms the presence of socio-economic and demographic challenges typical of peripheral regions. However, the results of a composite index show that these municipalities have significant potential, especially in terms of environmental and social indicators, but lag behind in economic development and tourism activity. At the same time, the region has a rich cultural-historical, ethnographic and natural heritage, which is currently not sufficiently socialized through tourism. The inclusion of cultural and natural heritage in economic activity is a realistic way to overcome peripherality and achieve a higher quality of life in these municipalities.

In this regard, the proposed thematic tourist routes represent a solution that does not require large investments, but creates opportunities for generating income and employment. The development of route, culturally-oriented tourism can contribute to a longer stay of visitors and greater economic benefits. Such an approach has been recognized as an effective tool for sustainable regional development based on local resources (Pedrosa, Martins and Breda, 2022 ; Beltramo, Taglio and Bonadonna, 2025). Therefore, the development of cultural tourism can be seen as a tool for improving the quality of the living environment by stimulating the local economy, retaining young people and strengthening local identity.

The successful implementation of this model, however, requires coordinated actions between local authorities and businesses and the active participation of local communities, which is the subject of further research.

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Културният туризъм като средство за подобряване на качеството на жизнената среда в периферен регион в България (регионът на река Места)

Желю Владимиров

Резюме: Статията анализира качеството на жизнената среда в четири общини по поречието на река Места (Гоце Делчев, Гърмен, Хаджидимово и Сатовча) и възможностите за нейното подобряване чрез културен туризъм. Регионът е периферен, със слаба икономика и относително висока безработица, но разполага с богато културно, историческо и природно наследство. Композитен индекс, включващ икономически, социални и екологични показатели, показва, че въпреки това наследство общините изостават икономически и в областта на туризма. В тази връзка се предлага модел за развитие на туризма чрез четири тематични маршрута – културен, етнографски, природен и фестивален. Този подход не изисква големи инвестиции, но може да доведе до увеличаване на заетостта и доходите, да задържи младите хора и да удължи престоя на туристите. Заключението е, че културният туризъм може да бъде ефективен инструмент за устойчиво развитие и подобряване на условията на живот чрез използването на местните културни ресурси.

Ключови думи: културно наследство; културен туризъм; жизнена среда; периферен регион; река Места



Kovatchevitsa
Photo: Zlatina Bogdanova

Local History Resources in Libraries – Cultural Heritage and Local Memory of Shared History and Values

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Abstract: *This article examines the concept, objectives and activities of the project 'Local History in Support of Cultural Identity, the Creative Economy and a Sustainable Environment', which highlights the nature and significance of local information sources held in public libraries as cultural heritage and a resource for bringing the local community together. The thematic areas related to the search for, study and disclosure of local history collections are outlined – through the presentation of interesting information on: prominent local figures, events and facts relating to the preservation of identity; local history and women's education; crafts, customs, oral traditions and the urban environment. Attention is drawn to the choice of geographical regions, the limiting parameters in the selection of information, the research methodology adopted, and the structure and characteristics of the publication prepared for print.*

Keywords: *regional studies; local history; local identity; personalities; community development*

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Guided by the conviction that local studies and local history are often an underutilised key asset, despite their potential to generate significant economic and social benefits not only for local communities and authorities but also at national level, the idea for the project 'Local History in Support of Cultural Identity, the Creative Economy and a Sustainable Environment'.

Its aim is to demonstrate the significance and value of local history information and collections held in Bulgarian libraries:

– *for the development and consolidation of the local community,* including through examples to emulate and sources of pride in the achievements of our ancestors; for strengthening social ties and building local identity;

for enhancing civic engagement and social capital; the provision of information and resources on events, facts and figures of significance to the community; the preservation of cultural heritage and local memory, transforming them into a key element of education and a stimulus for creativity; and the recognition of the role of local history information as a resource for the development of the economy and cultural tourism. On some of the areas mentioned, views have been expressed by representatives at a number of national and regional forums, as well as in academic publications (Tomova, 2001 ; Kovachev et al., 2008 ; Markov, 2010 ; Radoynova, 2017) , which emphasise the uniqueness of local history resources held in Bulgarian memory institutions, but at present, these largely address the topic in a fragmentary manner or relate only to a specific locality;

– *as factual material for fundamental research in various disciplines* – history, geography, linguistics, ethnology and folklore studies, toponymy and onomastics, genealogy, literary studies, journalism, book publishing and printing, art, cultural studies, architecture and urban planning, sociology and many others (Zapryanova, 2005);

– *for addressing major and significant national issues* in any given chronological period; the local history information gathered in libraries adds colour to the historical narrative of significant national events and facts, lending it depth and authenticity through the specific actions of local figures and the involvement of local communities in national events (Radeva, 2010 ; Kovachev, 2008 ; Boychev and Radulova, 2024) (uprisings, wars, etc.); the preservation and promotion of these collections form an integral part of the shaping of our national historical and cultural memory and are an essential component in the creation of a future innovative information resource within the development of the digital society.

It is also important to emphasise that these libraries serve various categories of users, partner with state, public and business institutions, and regularly provide information and resources relating to the socio-political, economic, social and cultural life of the regions; they systematically organise public events and disseminate knowledge about local communities and the natural landmarks in their vicinity; and they engage in publishing activities.

Library-based local history provides a valuable context for the present, supports academic and amateur genealogical research, and helps to foster a sense of identity, cultural awareness and civic engagement. Work with local history collections in the modern context is aimed at the authentic restoration of historical and cultural heritage, focusing on transforming it into a far more accessible digital resource that facilitates its reinterpretation by future generations. In this regard, it is worth noting that, over the past decade, regional libraries and some community centre libraries have carried out a substantial amount of work on digitising local history resources and building digital libraries – in order to ensure high-quality remote user access to them.

The project tasks are being carried out by researchers from both Sofia University 'St. Kliment Ohridski' as well as from libraries across the country, which are key centres for research in the field of regional studies and local history, boasting exceptionally rich collections of *books and anthologies, periodicals, cartographic, graphic, audio-visual and official/administrative publications, photographs, postcards, and sometimes unpublished sources as part of donations from the personal libraries and archives of prominent figures, etc.*

The selection of libraries participating in the project comprises five regional libraries – Dobrich, Silistra, Pazardzhik, Smolyan, Kyustendil and one community centre library in the town of Gotse Delchev – and is based on several criteria relating to: the presence of distinctive features, primarily in the region's historical development, which have influenced the country's development as a whole; the types of collections and documents they hold, as well as the extent to which this information is made available; the professional knowledge, skills and competences of the librarians engaged in local history research. It should be emphasised that this local history project is the first to seek common trends characteristic of such large and geographically distant regions of Bulgaria.

The thematic areas of research outlined in the project involve:

– Research and the search for information and resources relating to community identity and a sense of belonging – *prominent local figures of national significance and contribution; events and facts;*

– Research and the search for information and resources relating to local history – national ideas and doctrines across the various historical periods of Bulgaria's development. Following in-depth research into existing information databases, which revealed the existence of a vast volume of locally-focused sources with a historical orientation, this initial concept had to be narrowed down to a more specific research topic. We settled on the topic of education, but with a focus on the role of women – *'The contribution of women to the development of education and enlightenment in Bulgaria – local history aspects (from the National Revival to the end of the Second World War)'*. This will be examined from several angles, including: girls' education; notable female teachers and educators; women's organisations, societies and charitable work in support of education and enlightenment; the education and social development of women from minority communities; and others;

– Research and collection of information and resources relating to the community's enduring identity and distinctiveness – *crafts, customs, oral traditions, and the urban environment.*

In addition to the three thematic areas mentioned, the project's research and outreach objectives also include:

– Digitisation of significant local history sources from the six participating libraries (up to five items per library) and ensuring wide access to them;

– Conservation of local history sources from the six participating libraries (up to five items per library);

– Organising a training seminar for local history specialists working in libraries, focusing on the use of modern technologies and artificial intelligence;

-– Staging of the 'Shared Heritage' exhibition;

– Organising an academic conference with the working title 'Local History and Its Unique Role in Preserving Cultural Heritage and Inspiring Creativity'.

During the course of the work, the challenges facing the team became apparent in several areas:

– *Defining the scope of the research*, given the vast volume of local history information resources in the libraries under study. Reasoned thematic and quantitative restrictions were imposed on the selection of sources to be identified, examined and analysed, with a view to the planned activities and final outcomes of the project (academic publications, educational and academic forums, outreach activities, information products);

– *Selection of an appropriate* research *methodology*, based not only on purely research-oriented methods but also on the formulation of precise methodological guidelines for the selection, description and structuring of information sources, and the creation of draft layouts for future publications. As the bibliographic method is one of the leading approaches in this study, the development of such Methodological Guidelines and Layouts was a prerequisite for standardising the work requirements for the team of specialists from various libraries. Similar methodological guidelines were also drawn up for the selection of local history sources earmarked for digitisation and conservation, which will be carried out using the technological infrastructure established at the 'Heritage BG' Centre of Excellence at Sofia University 'St. Kliment Ohridski';

– *Development of a suitable structure* for the publications envisaged in the project, in line with the main focus of the research, namely to present to a wider audience previously unexplored or little-known areas of local history, whilst promoting local resources in particular.

The clearly defined parameters of the project and the chosen methodology provided a solid foundation for the team's work and, to a large extent, determined the positive results achieved in carrying out its tasks within the first thematic area. The research into information and resources concerning prominent local figures of national significance and contribution, whose lives and work help to

unite the local community, proved to be very fruitful. A 390-page publication entitled *'Personalities and Local Identity'* has been prepared for printing. It features *80 individuals who have made significant contributions to the Dobruja region, parts of the Rhodope and Thracian regions, the Kyustendil and Gotse Delchev regions*, with the compilers' main aim being to bring these individuals out of anonymity or to highlight their life stories using information drawn primarily from lesser-known local sources.

RESEARCH CARRIED OUT BY THE TEAM FOR THIS SPECIFIC PUBLICATION

In preparation for the publication, a vast amount of research was carried out, drawing on the local history collections of the participating libraries, as well as on information sources (primarily photographs) from related memory institutions in the regions under study, and on numerous electronic resources.

To illustrate the scale of the work carried out on this part of the project, we would point out that, between December 2025 and the end of February 2026:

– over 2,000 information sources were reviewed;

– over 180 texts were drafted;

– over 180 texts, bibliographic entries and photographs were selected and edited.

The main source for information gathering, and indeed the sources cited, remained the local history collections of the libraries, whose size, thematic diversity and broad chronological scope – particularly in regional libraries – are impressive. These vary depending on the size of the region and the characteristics of its infrastructure, the specifics of its historical development and natural features, the degree to which cultural heritage and indigenous traditions have been preserved, and many other factors. Of particular significance in this regard are the number, volume and focus of local periodicals published during the various chronological periods, as these constitute the most complete and comprehensive source of information on life within the local community. The diversity of their content is revealed to varying degrees through bibliographic data held in the individual regional libraries, but it is an indisputable fact that the accumulated local information in each of them amounts to several tens of thousands of bibliographic records.

The libraries' entire reference system, built up over the years, has also been utilised; this includes the electronic catalogue of the regional (and community centre) library, including the 'Local History Database'; the traditional catalogues and local history card indexes – for documents currently and retrospectively catalogued; the local history bibliographies and written local history bibliographic references (archive of written references) held in the relevant library, to check for existing information on the subject; and bibliographies of local history references in books and articles (important citations in books and articles from the local press).

All materials have been examined 'de visu', following verification of the names of the individuals featured in the publication and their bibliographic details.

Some of the information has been provided thanks to the close cooperation between the libraries and the State Archives in the relevant regional centre, particularly regarding unpublished photographic material.

With great care and thorough checks to ensure the accuracy of the content and the availability of extensive factual evidence, electronic resources have been selected and described for most of the texts.

DEVELOPMENT OF METHODOLOGICAL GUIDELINES FOR THE SEARCH, SELECTION AND ORGANISATION OF MATERIALS

These are based on criteria and indicators for the study of place names that are well-established in the theory of local history research. For the purposes of this publication, however, they have been further refined to take account of the specific characteristics of the historical, economic, social and cultural development of the selected regions, and include:

Criteria for selecting the names of local figures across several categories and sub-categories

1. Individuals born and having lived or currently living in the area who have made a significant contribution to the development of the settlement or region through:

– *their activities* (revolutionary, educational, etc., e.g. during the National Revival; participation in the struggle for the national unification of the Bulgarian lands and for the rejection of foreign occupation; administrative – for more recent periods, e.g. mayors who have contributed to the town's prosperity);

– *their profession* – with recognised achievements for the local community – scientists and teachers, doctors, architects and builders, cultural figures (involved in community centres, museums and other activities related to the preservation of cultural heritage, traditions and folklore), diplomats, journalists, lawyers, military personnel, engineers, clergy, etc.;

– *their creative work* – in literature, music, theatre, dance, fine and applied arts, etc.;

– *their economic enterprise* – as initiators of the establishment of factories, banks and small businesses characteristic of the village and the region;

– *their social and civic engagement* – philanthropy and charity, initiating and organising local cultural and other events of lasting significance and sustainability over time, such as festivals and other landmark local cultural initiatives; advocates for the development of community centres and voluntary civic organisations – orphanages, soup kitchens for the poor; participation in rescue operations; initiatives to protect the natural heritage, etc.;

– individuals associated with participation in major *local historical events;*

– *founders* of local institutions, organisations and events;

– *extraordinary individuals who* stand out from the rest through their political conduct, talents, distinctive civic stance, etc.;

2. Individuals born in the region but who left it, having gained national or even international renown, yet who remain connected to their birthplace through various means (referred to as 'distinguished locals'):

– artists; scientists; teachers (educators); religious figures, etc., who have also participated in significant national historical events – uprisings, guerrilla groups, wars (including volunteers);

– participants in national political or state initiatives;

– recipients of prestigious international awards, with outstanding personal achievements in various fields;

– individuals living abroad – primarily scientists and artists of international renown, fame and award-winning status, who have maintained their ties with their homeland;

– donors and benefactors who have supported their home region;

3. *Individuals born elsewhere but who have lived permanently in the region in question and made a significant contribution to its development.*

Names of individuals from all the categories and sub-categories listed have been researched and selected; these are people who have influenced the formation of local identity and contributed to the development of specific cultural, economic or social processes within the community.

Particular emphasis in the selection of names has been placed on highlighting the activities of individuals whose names have long been overlooked, often for ideological or other reasons.

Despite the overwhelming predominance of local history sources focusing on the lives and work of men, examples were sought of women whose presence and activities in the local community have left a significant mark on the historical, educational, cultural and social development of specific settlements and regions, and for whom interesting local textual and photographic evidence was discovered – for example, Maria Sutich, the only female member of Georgi Benkovski's 'Hvarkovata' detachment; about Mariola Dospevska, wife of the artist Stanislav Dospevski, founder of the first women's society in the town of Pazardzhik, who actively assisted girls affected by the April Uprising in being sent abroad; about 'the Rhodope Nightingale' Radka Kushleva; about the philanthropist Raina Tsaneva from Kyustendil, who raised and educated nearly 600 children in the orphanage she founded and ran, and so on.

In the process of researching the names of these individuals, colleagues from different geographical regions came across the same interesting trend. Regardless of the specified selection criteria they adhered to, they found that the individuals they selected were, in most cases, complex, multifaceted personalities – people with a rich inner world, diverse interests and talents, and multifaceted achievements in their professional and public activities. The community recognises them both as outstanding professionals in their field and as leaders, revolutionaries, politicians and statesmen with progressive ideas; at the same time, they are often the driving force behind the creation of educational, cultural, sporting and other events (choirs, orchestras, dance troupes, amateur theatres and many others), and they also stand out as donors and benefactors.

SCOPE AND LIMITATIONS OF THE RESEARCH MATERIALS USED IN WRITING THE TEXTS AND THE CITED BIBLIOGRAPHY

The scope of this study was determined by the specific aims and objectives set out in the project. The boundaries of the study were established by the team's decisions, as detailed in the working protocols and in the research methodology developed.

When writing the texts about the individuals and selecting the sources used and cited, local materials were given clear priority – publications of books by local authors; information from local periodicals, particularly that corresponding to the period in which the individual in question lived, in order to outline the assessment of their contemporaries; unpublished sources (photographs) from regional archives; official publications by local institutions; texts of papers from regional academic forums; and so on.

In some cases, the local information was supplemented with details and quotations from national publications of an academic nature and by authoritative authors.

In determining the scope of the names, there were a number of challenges relating to striking a balance between the breadth and depth of the research, the limited time available for its completion – particularly given the requirement to verify facts using several different sources – as well as the uncertainty regarding the volume of sources that would be found for the various individuals. In order to achieve a consistent and largely standardised presentation of the texts on the individuals in this edition, it became necessary during the course of the research to introduce restrictive parameters regarding:

– the number of individuals represented by a single library;

– the length of the texts;

– the number of bibliographic details and photographs included with each text.

We hope that, through our joint efforts, we have identified the most appropriate scope for this study.

SOURCES FOR RESEARCHING LOCAL HISTORY INFORMATION AND RESOURCES

The Methodological Guidelines drawn up specifically identified the resources of libraries and other local institutions in the regions under study, which will form the information base for the research.

Attention was drawn to the research methods – bibliographic, 'de visu', comparative, and others.

Bibliographic standards were outlined, along with numerous specific examples, to highlight the particular features involved in describing the various types of printed sources and electronic resources.

STRUCTURE AND LAYOUT OF THE PUBLICATION

A layout was created to define the structure and technical presentation of the materials submitted for editing and printing.

This publication is organised into three parts, corresponding to the country's major regions, which are linked to established historical-geographical areas with a reasonably clear geographical definition, whose populations share a similar historical fate. In the course of researching the material on individual figures, it became increasingly clear that people living in neighbouring regions

are united by a multitude of factors – geographical conditions, historical events, political structures, cultural ties, economic interdependencies, migration processes, and so on. This gave rise to the idea of using the chosen structure to demonstrate how these factors have influenced the historical destinies of the various individuals and communities. And that, despite their individual differences, they share common geographical, political and cultural characteristics which unite them and make them part of a larger historical and geographical community. On this basis, the material on the individuals is grouped into three main sections, which are further subdivided according to the collections of the libraries operating in these regions and participating in the project, namely:

1. *Individuals – both well-known and overlooked – who have made a significant contribution to the Dobruja region; for the Dobrich region in particular, individuals from various professions and with contributions at both local and national levels have been selected, for example: Anastas Petrov Dachev (1899 – 1978)* – Founder of professional ballet in Bulgaria, actor, ballet dancer, ballet master and teacher, founder of the country's first children's ballet school; *Blaga Alexandrova Ambrozhevich (1901 – 1991)* – Teacher, publicist and distinguished lecturer, intellectual and social activist, also known for her famous speech on the occasion of the first Day of the National Revival Leaders in liberated Dobruja – 1 November 1940; *Yosif Yosifov Dushek (1893 – 1986)* – A distinguished figure in the world of music, composer and violin teacher, the driving force behind the establishment of the first symphony orchestra in Dobrich and its conductor; *Nikola Petrov Takhtunov (1873 – 1947)* – Bulgarian artist, one of the first painters in Dobruja, an educator and teacher. A founding figure in Dobrich's artistic life from the early 20th century; *Father Pavel (Pascal) Atanasov Stoyanov (1867 – 1960)* – priest, teacher of the Bulgarian National Revival, singer and folklorist, collector and researcher of folk songs, dances and customs, self-taught folk singer, memoirist, and one of the founders of Dobruja regional studies; *Peter (Pesach) Izrailevich Gabe (1857 – 1927)* – a prominent public figure and journalist, a Dobrujan farmer and innovator, who contributed to the spiritual and economic development of Southern Dobruja and was a champion of its liberation from Romanian occupation; *Yani Parashkevov Hadzhiyanev – Kaliakrenski (1898 – 1944)* – A prominent Dobrujan journalist, writer and public figure, an active participant in the struggle for the liberation of Dobruja and for the establishment and preservation of Bulgarian educational and cultural centres in Southern Dobruja. He was arrested and killed without trial or sentence on the night of 8 – 9 September 1944, and the People's Court subsequently legalised his murder. One of the long-silenced names of Dobruja.

Notable figures from the Silistra region include: Asparuh Yanakiev Aydemirski (1892 – 1965) – Lawyer, journalist and leading figure in the Dobruja National Liberation Movement, chairman of the Internal Dobruja Revolutionary Organisation (VDRO), who contributed to the struggle for national unification; *Geno Atanasov Cholakov (1834 – 1904)* – A figure of the Bulgarian National Revival, a social and cultural leader of the Bulgarians in Silistra, an active participant in the church-national struggles and the Bulgarian national liberation movement, exiled to Asia Minor, twice mayor of the town, and a member of the First Grand National Assembly in Tarnovo (1879); *Georgi Stoykov Mamarchev (1786 – 1846)* – A leading figure in the Bulgarian people's armed struggle against Ottoman rule and organiser of two attempts at popular uprisings during the second quarter of the 19th century. The first commandant/mayor of Silistra; *Nikola Atanasov Radulov (Aydemirov) (1877 – 1947)* – Literary critic, playwright, writer, diplomat and public figure, who contributed to the study of Dobruja's local history. After 1944, his name was marginalised in literary history due to his publications dedicated to Tsar Boris III; *Pencho Stefanov Peev (1894 – 1967)* – Music teacher and the longest-serving conductor of the 'Sedianka' choir. His name is associated with the development of choral art, music education in schools and the establishment of Silistra as the musical centre of Dobruja; *Yanko Todorov Grekov (1838 – 1914)* – a teacher of the Bulgar-

ian National Revival period, a comrade-in-arms of Vasil Levski and an active participant in Bulgaria's national liberation struggles.

2. Notable figures – both well-known and overlooked – who have made a significant contribution to the Rhodope and Thracian regions. This section features figures from the Smolyan region who are recognised for their contributions: Anastas Petrov Staykov (1905 – 1988) – The first artist from the Rhodopes to graduate from the Academy of Fine Arts in Sofia, having specialised in France. He dedicated his work to his native Rhodope Mountains; *Vladimir Georgiev Serafimov (1860 – 1934)* – The colonel who defied a military order and led his soldiers into battle for the liberation of the Smolyan region, thereby earning the gratitude of the people of the Rhodopes. He took part in four wars: the Serbian–Bulgarian War, the Balkan Wars, the Inter-Allied War and the First World War; *Kosta Raichev Chilingirov (1897 – 1932*) – A prominent Rhodope cooperative, economic and cultural figure who dedicated his life to the social and economic development of the Smolyan region; *Dr Nikola Tashev Gerzhikov (1876 – 1968)* – A gynaecologist who studied and practised in Geneva. From there, he played an active role in the VMRO's overseas mission to promote the Bulgarian cause in Macedonia; a comrade-in-arms of Simeon Radev and a volunteer in the Balkan Wars. Far from the battlefields of the Inter-Allied War and the First World War, he worked tirelessly for Bulgaria's interests as a distinguished doctor and public figure, and as an activist with the International Red Cross. He was involved in various charitable initiatives related to the Smolyan region; *Stana Nikolova Mavrodieva (1890 – 1971)* – The first woman in the Rhodopes to engage in the complex commercial activities of exploring, developing, mining and trading lead-zinc and copper ores, earth pigments and other materials; *Hristo Ivanov Karamandzhukov (1876 – 1952)* – A cultural, educational and social activist, revolutionary and participant in the Macedonian-Adrianopolitan Movement. He was a publicist and publisher of the long-running magazine *Rodopa*.

The Pazardzhik region is also represented *by figures such as: Boris Ivanov Pozharov (1866 – 1942)* – Theatre figure, actor and director, one of the founders of Bulgarian theatre, who performed with the Rumelia Theatre Company in Plovdiv – the first professional theatre in Bulgaria; *Georgi Gerasimov Petkov (1905 – 1977)* – a graphic artist educated in Europe, a master of artistic illusion of international renown. One of Pazardzhik's greatest benefactors, he bequeathed his entire cultural and material estate to his hometown, which today is held by various cultural institutions – the 'Stanislav Dospevski' Art Gallery, the Regional History Museum, the 'Nikola Furnadzhiev' Regional Library, the 'State Archives' Regional Directorate – Pazardzhik'; *Georgi Konstantinov Hristovich (1863 – 1926)* – A renowned Bulgarian scholar, zoologist, academician, public figure, hunting enthusiast, and lover and protector of nature; *Elena Nikolay (1905 – 1993)* – The greatest mezzo-soprano of the 20th century: 'I carry my homeland in my heart'; *Dr Nikola Lambrev Ivanov (1875 – 1941)* – Doctor of Law, economic and cooperative activist, public figure, philanthropist, author of the 1905 Water Act in Bulgaria, who bequeathed all his movable and immovable property to the poor children of Pazardzhik; *Spasiya Dimitrova Dzurenova (1890 – 1961)* – A renowned singer and eloquent storyteller of folk tales, known as 'the Bulgarian Scheherazade'.

3. Notable figures – both famous and overlooked – who made significant contributions to the Kyustendil and Gotse Delchev regions. Among the notable figures of the Kyustendil region are: Asen Vasiliev (1900 – 1981) – Artist, art historian and researcher of the Bulgarian National Revival period's visual arts, who contributed to the study and popularisation of the artistic heritage of Western Bulgaria; *Georgi Angelov Drumoharski (1843 – 1912)* – a cultural figure of the Bulgarian National Revival, public figure, the first historiographer and mayor of Kyustendil, who contributed to the preservation of cultural and historical memory and urban development; *Efrem Tsvetkov Karanov (1852 – 1927)* – A prominent figure of the Bulgarian intelligentsia during the National Revival and the post-liberation period, a teacher, historian, folklorist, ethnographer, translator and revolutionary, whose work spanned key ar-

eas of Bulgaria's national and cultural history; *Archimandrite Zinovy Poppetrov (1838 – 1911)* – A figure of the Bulgarian National Revival, a freedom fighter, clergyman, teacher and public figure, lecturer and rector of the Samokov Theological Seminary; *Krum Georgiev Lekarski (1898 – 1981)* – a military, political and sporting figure, a pioneer of equestrian sport in Bulgaria and a competitor of international renown. He took part in the Olympic Games in Paris (1924), Amsterdam (1928), Stockholm (1956) and Rome (1960) – a rare example of longevity in a sporting career. Despite his high-ranking positions and sporting successes, his biography also includes periods of political repression and subsequent rehabilitation; *Raina Hristova Tsaneva (1886 – 1971)* – a social activist and philanthropist, founder of an orphanage and of the 'Miloserdie' women's charitable society in Kyustendil.

Some of the notable figures from the Gotse Delchev region featured in this publication are: Zafir Todorov Kanchev (1915 – 1987) – an ethnographer and researcher of the traditions, customs and folklore of the Nevrokop region, and founder of the first amateur ensemble in Bulgaria; *Ivan Blagoev Kyulev (1872 – 1956)* – a distinguished folklorist, collector and researcher of folk songs from the Pirin and Rhodope regions, a composer who created original works based on folk songs, choir conductor who introduced three-part and two-part choral singing, a teacher during the National Revival and a participant in the National Revival struggles in Macedonia and Thrace; *Iliya Atanasov Dukov (1806 – 1896)* – Public figure and educator, participant in the struggle for Bulgarian ecclesiastical independence, founder and first chairman of the Nevrokop Bulgarian Community, benefactor; *Petar Valchov Sarafov (1842 – 1915)* – a Bulgarian National Revival-era teacher, an advocate for the introduction of the Bulgarian language in schools and the church. Fluent in five languages, he authored several textbooks, as well as a comprehensive work on the study of Bulgarian church music.The materials from the collections for each region are arranged in alphabetical order by the names of the individuals, who are each presented with a separate entry.

The subheadings for each individual highlight their most significant achievements of local and national importance.

The main text on each individual often includes quotations, which lend authenticity and colour to the account.

Each of the biographical entries is accompanied by a list of *Sources Used* (up to 15 entries), *Electronic Resources* (up to 5 entries), as well as *photographs*, which were intended to enhance the informational and visual value of the publication.

Due to the large number of names – 80 – this edition is accompanied by a further reference feature: *an Index of Names of Individuals for whom separate entries and a bibliography are provided*. This allows for quicker and more relevant navigation through the individual biographical sections, as it establishes links between all forms of a person's name by which they are known, including pseudonyms, nicknames and so on.

CONCLUSION

The individuals featured in this volume can unequivocally be characterised as:

– prominent representatives of local communities who played a role in shaping local identity;

– individuals of high moral character and active civic engagement, devoted patriots, prepared to sacrifice themselves for lofty national ideals and local principles;

– highly educated and erudite individuals for their time, with established professions, as well as outstanding talents (musicians, artists, architects, singers, literary figures and uncompromising journalists), generous donors and benefactors;

– individuals whose life stories must be brought out of anonymity, because the names of many of them have already been largely forgotten or have long been deliberately overlooked or underappreciated.

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Краеведските ресурси на библиотеките – културно наследство и местна памет за споделена история и ценности

Цветанка Панчева, Анета Дончева

Резюме: В статията се проследяват идеята, целите и дейностите на проекта „Краезнанието в подкрепа на културната идентичност, креативната икономика и устойчивата среда", който откроява същността и значението на местните информационни източници, съхранявани в обществените библиотеки като културно наследство и ресурс за сплотяване на конкретната общност. Посочени са тематичните направления, свързани с издирването, проучването и разкриването на краеведските фондове – чрез представяне на интересни данни за: видни местни личности, събития, факти, кореспондиращи с опазване на идентичността; локална история и образование на жените; занаяти, обичаи, устно творчество, градска среда. Обърнато е внимание на избора на географските региони, ограничителните параметри при подбора на информацията, възприетата методология на изследването, структурата и особеностите на подготвеното за печат издание.

Ключови думи: краезнание; местна история; местна идентичност; личности; развитие на общността

Some Observations on the Legal Status of the Product "Strandzhanski Manov Med"

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Abstract: *This paper presents a study, observations, and an analysis of the current legal status of the product Strandzhanski manov med within the framework of the European Union system of geographical indications. Particular attention is paid to the legal protection linking the product to the Strandzha geographical region and to its specific natural and traditional production factors, as a key mechanism for both protecting the economic value of traditional products and indirectly preserving the knowledge and practices associated with them.*

In this context, the paper examines whether this legal framework functions solely as an instrument of protection or whether it also participates in processes of transforming tradition through its standardisation, institutionalisation, and integration into market mechanisms.

Keywords: *geographical indications; Protected Designation of Origin (PDO); intellectual property; cultural heritage*

INTRODUCTION

The current legal status of Strandzhanski manov med [Strandzha Manov Honey][1] is significant not only in its own right but also as a contribution to the broader scholarly discourse on the Strandzha region. The subject is inherently interdisciplinary, situated at the intersection of legal scholarship and cultural studies. From a legal perspective, it falls within the field of intellectual property, more specifically industrial property (Draganov, 2016, p. 230). At the same time, the distinctive nature of designations linked to geographical origin, together with their connection to traditional production practices, knowledge, and skills, makes them highly relevant to cultural and anthropological research concerned with the cultural practices, traditions, and heritage of the region.

Historically, the association between the distinctive qualities of a product and its geographical place of origin gave rise to the concept of geographical indications, primarily for commercial purposes (Blakeney, 2024). The reputation enjoyed by products such as Burgundy wine and similar goods created the need to protect the competitive advantage derived from their local reputation and quality. Merchants therefore began marking goods with signs indicating their place of origin, using images of local animals, characteristic

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[1] Strandzhanski manov med / Manov med ot Strandzha

buildings, heraldic symbols, and well-known local figures. Such indications of origin may be regarded as an early form of trademark, serving as a guarantee of the product's quality. As international trade expanded during the 18th and 19th centuries, it became increasingly evident that products originating from certain regions were preferred over comparable products from elsewhere because of their superior quality. That quality resulted from favourable geographical conditions, including climate and geology, as well as from traditional recipes, locally specific production techniques, and specialised regional craftsmanship (Blakeney, 2024). With the development of industrialisation, the need emerged not only to indicate the geographical origin of products but also to protect producers' commercial reputation, thereby contributing to the establishment of trademark registration systems. However, the evolution of the trademark system did not lead to the disappearance of geographical indications. In Europe, in particular, the identity and recognition of many products have remained inseparably linked to their geographical origin (Blakeney, 2024).

According to Blakeney (2024), the reputation of appellations of origin depends on the image they create in the minds of consumers. That image, in turn, is determined primarily by the product's specific characteristics and, more broadly, by its quality. Ultimately, it is this quality upon which the product's reputation is founded. For consumers, the relationship between producers' reputation and product quality also depends on their confidence that products marketed under a particular appellation of origin are authentic. Consequently, legislation governing geographical indications constitutes an instrument of the common agricultural policy, intended primarily to ensure that a geographical indication registered under the applicable legal framework possesses, by virtue of its origin in a specific geographical area, particular characteristics and thereby provides a guarantee of quality attributable to that geographical origin.

The development of private trademark systems has therefore not resulted in the disappearance of geographical indications. Particularly in Europe, substantial markets for processed food products and alcoholic beverages continue to depend upon the continued recognition of geographical indications (Blakeney, 2024).

TERMINOLOGICAL AND THEORETICAL REMARKS

Numerous scholars of the law of geographical indications (GIs) have noted the considerable diversity of the terminology associated with this field (Blakeney, 2024). According to some authors, this terminological diversity may be attributed to the various international agreements that have sought to regulate geographical indications[2].

In a survey of national legislation, the Secretariat of the World Trade Organization (WTO) identified twenty-three different terms and consequently adopted the expression "indications of geographical origin" as a generic concept encompassing the various forms of designation used by WTO Members to protect the geographical origin of products (Blakeney, 2024). Gangjee (2012) argues that this terminological diversity reflects the multiple policy objectives that geographical indi-

[2] For example, Blakeney (2024) notes that Article 10 of the Paris Convention for the Protection of Industrial Property (1883) provided for the seizure of imported goods bearing *false indications of the source of the goods*. This terminology was subsequently reproduced in the Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods (1891). The International Convention on the Use of Appellations of Origin and Denominations of Cheeses (the Stresa Convention) (1951) adopted the term *appellations d'origine* from French legislation. The same concept was later incorporated into the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (1958). Article 2 of the Lisbon Agreement defines an *appellation of origin* as:
"the geographical denomination of a country, region, or locality, which serves to designate a product originating therein, the quality or characteristics of which are due exclusively or essentially to the geographical environment, including natural and human factors."
Article 22 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) defines *geographical indications* as:
"indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin."

cations are intended to serve, including agricultural marketing, rural development, the preservation of traditional knowledge, and the safeguarding of cultural heritage.

Gangjee (2012) identifies several principal objectives of the legal protection of geographical indications. These include, first, the protection of consumers against deception; second, the protection of producers of GI products; third, the promotion of territorial, local, regional, and rural development; and fourth, the conservation of biological resources, biodiversity, and cultural diversity.

According to Hughes (2006), the European enthusiasm for the protection of geographical indications reflects contemporary agricultural policy to a greater extent than a desire to preserve historical institutions or traditions.

What can be observed in this regard today? Products regarded as embodying European cultural heritage, local traditions, quality, and authenticity (Geographical Indications in the EU, 2025) are protected through the Geographical Indications (GI) quality scheme, which safeguards their names by virtue of their unique link with a specific geographical area.

Until 2024, the legal protection of products associated with a particular region, quality, or tradition was governed through sector-specific regulations. Agricultural products and foodstuffs, for example, were regulated by Regulation (EU) No 1151/2012 (now incorporated into the new framework), wines by Regulation (EU) No 1308/2013, and spirit drinks by Regulation (EU) 2019/787. The legal framework could therefore be characterised as sectorally fragmented. By contrast, Regulation (EU) 2024/1143 of 11 April 2024 on geographical indications for wine, spirit drinks and agricultural products, as well as traditional specialities guaranteed and optional quality terms for agricultural products, amending Regulations (EU) No 1308/2013, (EU) 2019/787 and (EU) 2019/1753, and repealing Regulation (EU) No 1151/2012, seeks to establish a more unified and horizontal regulatory framework.

As noted above, geographical indications are closely connected with the broader system of intellectual property. EU law – particularly Directive (EU) 2015/2436 and Regulation (EU) 2017/1001 – generally accords priority to protected geographical indications over later trademarks where there is a risk of misleading consumers or of the unlawful appropriation of the reputation associated with a protected geographical name. In addition, Directive 2005/29/EC on unfair commercial practices complements this regime by prohibiting misleading commercial practices and protecting consumers against so-called "pseudo-local" products.

In addition to promoting greater regulatory coherence, Regulation (EU) 2024/1143 introduces several important developments, including enhanced digital protection extending to online platforms, a strengthened role for producer groups and the collective management of geographical indications, as well as the incorporation of sustainability considerations through environmental practices and social standards. The latter is particularly significant in the context of intangible cultural heritage, understood as a living and continuously evolving body of traditional practices.

From this perspective, geographical indications may be understood as protecting not merely the product and its name, but also, indirectly, the knowledge, skills, traditions, and local communities associated with it at the intersection of cultural policy, intellectual property, and regional development. They therefore function as a legal mechanism through which elements of intangible cultural heritage are translated into economically valuable and legally protectable assets. At the same time, geographical indications operate both as instruments for the valorisation of heritage and as mechanisms of standardisation, potentially "fixing" tradition in legally defined forms and creating a risk of excluding alternative local knowledge and practices.

ANALYSIS

Strandzhanski manov med is protected in the European Union as a Protected Designation of Origin (PDO), which provides the highest level of legal protection by linking the product entirely to the geographical area of

Strandzha and to the specific natural and traditional factors of production[3]. The registration was carried out pursuant to Regulation (EU) No 1151/2012, as is evident from the registration act itself. This Regulation established the classical legal framework for the protection of geographical indications through a product specification, control, and protection against imitation.

The registration of Strandzhanski manov med in the European Union as a Protected Designation of Origin (PDO) is officially evidenced by Commission Implementing Regulation (EU) 2019/537, by which the name was entered in the Register of Protected Designations of Origin and Protected Geographical Indications[4]. In accordance with the Single Document accompanying the application for registration, it is expressly stated that the product falls within the category of Protected Designation of Origin (PDO) rather than Protected Geographical Indication (PGI). This distinction concerns the level of legal protection afforded to the product and will be discussed separately below.

As noted above, the registration was carried out pursuant to Regulation (EU) No 1151/2012 on quality schemes for agricultural products and foodstuffs, which lays down the conditions and procedure for the registration of geographical indications, including the requirement to submit a product specification defining the characteristics of the product, the geographical area, and the link between them. Within this legal framework, the registration of a name as a Protected Designation of Origin (PDO) gives rise to legal protection throughout the territory of the European Union.

This status means that all stages of the production, processing, and preparation of the product take place within the designated geographical area and that its quality or characteristics are essentially or exclusively attributable to the specific geographical environment, including both natural and human factors. It is precisely this close and comprehensive link between the product and the geographical area that distinguishes a Protected Designation of Origin (PDO) from the other categories of geographical indications and justifies the higher level of protection.

Since its registration in 2019, Strandzhanski manov med has enjoyed the full legal protection provided under EU law for Protected Designations of Origin, including protection against the unlawful use of the name, imitation, and any practices that may mislead consumers as to the origin of the product.

Although the legal framework governing geographical indications was subsequently revised through the adoption of Regulation (EU) 2024/1143, this does not alter the status of the product but rather integrates it into the new, more unified system for the protection of geographical indications in the European Union. In other words, the adoption of Regulation (EU) 2024/1143 introduces an updated legal framework which does not change the status of the product but expands the possibilities for its protection and management through enhanced digital protection, a greater role for producers, and the integration of sustainable practices.

PRODUCT SPECIFICATION OF STRANDZHANSKI MANOV MED AS A PROTECTED DESIGNATION OF ORIGIN (PDO)

The Single Document accompanying the application for the registration of Strandzhan-

[3] Other documents:
Ministry of Agriculture and Food: https://www.mzh.government.bg/bg/politiki-i-programi/politiki-i-strategii/politiki-po-agrohranitelnata-veriga/zashiteni-naimenovaniya/znp-strandzhanski-manov-medmanov-med-ot-strandzha/ (02.06.2026).
The European Commission approves a new Bulgarian protected designation of origin https://cap18.europe.bg/en/node/253 (27.03.2026).
Single document: https://www.mzh.government.bg/media/filer_public/2018/12/21/edinen_dokument_strandzhanski_manov_med.pdf (02.06.2026)

[4] Act of registration: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX%3A32019R0537 (02.06.2026).

[5] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018D1213(01) (27.03.2026).

ski manov med as a Protected Designation of Origin (PDO)[5] constitutes a key legal instrument through which a traditional practice is translated into the language of law. Published in the Official Journal of the European Union as part of the registration procedure, it contains a concise presentation of the essential elements of the product specification on the basis of which the registration was granted (see Single Document – "Strandzhanski manov med", OJ C 418, 23 November 2018, CELEX: 52018XC1123(02)).

Within this document, the product is defined through a set of objectively verifiable characteristics, including physicochemical parameters, organoleptic properties, and specific features of the raw material that distinguish it from other types of honey. Its dark colour, high mineral content, and characteristic aromatic profile are described not merely as empirical observations but as legally relevant criteria subject to verification and official control. In this way, traditionally recognised qualities are transformed into standardised indicators capable of being certified within an administrative procedure.

A further essential element of the Single Document is the definition of the geographical area, encompassing the territory of Strandzha, together with the description of the link between the product and its environment. This link is substantiated through a combination of natural factors – specific climatic conditions and vegetation favourable to the production of honeydew honey – and human factors associated with traditional beekeeping practices transmitted across generations. It is precisely this combination of the natural environment and accumulated traditional knowledge that justifies the product's qualification as a Protected Designation of Origin (PDO) and legally substantiates its uniqueness.

An analysis of the Single Document demonstrates how the law "describes" tradition through a process of selection, formalisation, and standardisation. Living and inherently variable practices are translated into stable criteria capable of institutional application and control. In this sense, the document not only reflects an existing tradition but also participates in shaping it by determining which of its elements are considered legally relevant and how they are to be reproduced in the future.

FINDINGS

The legal status of Strandzhanski manov med illustrates the transformation of a traditional local practice into a legally protected economic resource while simultaneously raising the question of the limits of legal protection in relation to intangible cultural heritage.

At the same time, an important research question arises as to whether there is an inherent tension between the law's protection of a standardised version of tradition and the continuing vitality of that tradition as expressed through diverse and informal production techniques.

Several scholars have also drawn attention to the limitations of systems of geographical indications (GIs) and Protected Designations of Origin (PDOs). According to Tregear (2007), their function as indicators of quality and authenticity is not always perceived unambiguously by consumers. In some cases, a product's high level of recognition and established reputation may render such legal designation almost redundant, whereas in others these schemes may impose a standardised and institutionalised representation of local product identity. They have also been criticised for "fixing" resources, practices, and understandings of authenticity within a particular historical and cultural framework, thereby potentially constraining innovation and alternative development trajectories. Against this background, Tregear raises the question of the extent to which GI systems create opportunities for entrepreneurs and producers developing new products outside established territorial and cultural models, including in regions characterised by a high degree of typicity and strongly established local product identities (Tregear, 2007).

The positive effects of these schemes are undeniable, including increased economic value, market recognition, and protection against imitation. Nevertheless, concerns re-

main regarding the "fixation" of tradition, the exclusion of peripheral producers, and the bureaucratisation of traditional practices. These considerations also invite a comparison between the legal frameworks governing such practices – which, in essence, constitute forms of intangible cultural heritage – namely the European Union legal framework on geographical indications (GIs) and the 2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage.

The fundamental difference between the two regimes lies in their respective objects of protection. EU law protects the product and its name, following a market-oriented logic and relying upon a standardised product specification designed to secure legal protection and economic value. By contrast, the UNESCO Convention (2003) for the Safeguarding of the Intangible Cultural Heritage protects practices, knowledge, and skills as elements of the intangible cultural heritage of communities, with the aim of preserving their vitality and ensuring that traditional practices remain dynamic and living. Conceptually, therefore, the EU legal framework codifies and stabilises tradition, whereas the UNESCO approach seeks to sustain its continuity, adaptability, and vitality as a living cultural practice. Their common ground lies in recognising the intrinsic relationship between community and practice, acknowledging local specificity, and creating mechanisms of legitimacy. It may therefore be argued that the system of geographical indications (GIs) codifies and partially fixes particular aspects of tradition, whereas the 2003 UNESCO Convention approaches tradition as a living cultural value.

It may thus be concluded that geographical indications (GIs) within EU law function as a hybrid mechanism that simultaneously protects the economic value of traditional products and indirectly safeguards the knowledge and traditional practices associated with them. In this process, however, intangible cultural heritage is transformed into a standardised and legally fixed form, raising important questions concerning the boundary between safeguarding and the regulatory limitation of its vitality.

The literature further emphasises that the economic and social effects of Protected Designations of Origin (PDOs) and Protected Geographical Indications (PGIs) do not arise automatically from registration itself. According to Marescotti (2003), the recognition of a product as a PDO or PGI may create favourable conditions for rural development and the retention of local added value, but the actual distribution of benefits depends largely upon the organisational capacity of local producers, the governance strategies adopted for managing the designation, and the ability of local stakeholders to retain control over supply chains. In this sense, geographical indications (GIs) not only protect existing traditions and practices but also participate in restructuring the relationships between local communities, markets, and institutions, creating both opportunities for development and new forms of dependency and uneven distribution of benefits (Marescotti, 2003).

The role that a typical regional product may play within a broader territorial development strategy is well illustrated by Marescotti's example of the cherries of Lari (Italy). In this case, a product of relatively limited economic importance to the local economy became recognised by the local community as a "cultural marker" and was used as a means of attracting consumers to a broader basket of goods and services offered within the region. The reputation of the Lari cherries thus functioned as a catalyst for the development of other local activities. The application for PDO recognition itself stemmed, in part, from the intention of the local public administration and tourism association to capitalise on the symbolic value of the product in promoting the entire territory, including its castle, agriculture, agritourism, festivals, and other cultural attractions. The principal value of the product therefore resided in its role as a cultural marker reinforcing local identity and social cohesion while simultaneously promoting the wider region (Marescotti, 2003, p. 13). At the same time, however, Marescotti demonstrates that PDO/PGI recognition may also have restrictive consequences for primary

producers. The mandatory requirements contained in the product specification may limit the diversity and variability that might otherwise characterise local production.

The use of a geographical indication (GI) may also be understood as a form of symbolic capital contributing to the construction of narratives, traditions, and local identity (Dimitrov, 2017, p. 179). Similarly, Vukov (2017, p. 207) identifies a close relationship between geographical indications (GIs) and the rediscovery of tradition in the context of transformations in agriculture.

From this perspective, the process of legal protection through geographical indications (GIs) may be viewed not only as a mechanism for safeguarding local knowledge and traditional practices but also as a process of institutionalisation, in which the questions of who defines the content of "tradition" and who ultimately benefits from it become matters of central importance (Marescotti, 2003).

For this reason, research conducted from a cultural-anthropological perspective is particularly well suited to revealing this dimension of the instrumentalisation of heritage and its use as an economic resource (Petrova, 2017, p. 243).

DISTINGUISHING BETWEEN THE DIFFERENT LEGAL CATEGORIES OF GEOGRAPHICAL INDICATIONS

The relationship between geographical indications (GIs) and Protected Designations of Origin (PDOs) is both hierarchical and functional. The former constitutes the general legal category, while the latter represents its most stringent subcategory.

Within the legal framework governing geographical indications (GIs), several categories exist, one of which is the Protected Designation of Origin (PDO). A PDO is granted to a product that satisfies three cumulative requirements: origin (the product originates from a specific geographical area), quality (its qualities or characteristics are essentially or exclusively attributable to that geographical environment), and complete localisation of production (all stages of production take place within the defined geographical area). Accordingly, a PDO represents the strictest form of legal protection within the broader category of geographical indications (GIs), requiring an exceptionally close connection between the product and its geographical area.

A Protected Geographical Indication (PGI) constitutes a more flexible category. Its defining characteristics are that the product is associated with a particular geographical region and possesses a specific reputation, quality, or other characteristic attributable to that origin, while only one stage of production, processing, or preparation is required to take place within the designated geographical area. Consequently, the territorial link is less stringent than that required for a PDO.

By contrast, a Traditional Speciality Guaranteed (TSG) does not require any geographical connection. The product must be traditional in character and produced using a specific traditional method. In this case, legal protection is granted to the traditional recipe or method of production rather than to the place of origin or geographical area.

Accordingly, within EU law, geographical indications (GIs) constitute the overarching legal framework encompassing several categories that differ in the degree of connection required between the product and its geographical origin.

LEGAL ANALYSIS OF STRANDZHANSKI MANOV MED

As noted above, the adoption of Regulation (EU) 2024/1143 does not alter the legal status of Strandzhanski manov med but rather integrates it into the new legal framework. This has several important legal consequences.

First, the product's registration as a Protected Designation of Origin (PDO), effected through Commission Implementing Regulation (EU) 2019/537 pursuant to Regulation (EU) No 1151/2012, remains fully valid without interruption. The new Regulation neither requires re-registration nor provides for a review of previously recognised designations as a condition for maintaining their legal validity. This follows both from the general principle of legal continuity in EU law and from the explicit transitional provisions of the new

Regulation, which ensure the continued protection of all previously registered geographical indications (GIs)[6].

The conclusion that existing geographical indications (GIs) remain valid and are incorporated into the new system without the need for re-registration follows directly from Article 93 of Regulation (EU) 2024/1143, which provides for the automatic entry of previously registered names into the new Union Register of Geographical Indications[7].

Second, this process of "integration" means that previously registered designations automatically fall within the scope of the new, broader, and more unified legal framework. In other words, the product's status as a Protected Designation of Origin (PDO) remains unchanged, whereas the rules governing its protection, management, and enforcement are now contained in the new Regulation. These include, for example, the new provisions concerning online protection, the strengthened role of producer groups, and the possibility of incorporating sustainability practices into product specifications.

Third, integration also entails a form of functional enhancement. The product does not receive a new type of legal protection but benefits from an expanded set of legal and administrative instruments for its protection and management, while its defining characteristics as a Protected Designation of Origin (PDO), namely its close territorial link and the requirement that all stages of production occur within the designated geographical area remain unchanged.

DIFFERENCES BETWEEN THE NEW AND THE PREVIOUS LEGAL FRAMEWORK

Although the adoption of Regulation (EU) 2024/1143 constitutes a substantial reform of the legal framework governing geographical indications (GIs) in the European Union, it does not alter the legal status of products that had already been registered, including Strandzhanski manov med, which remains registered as a Protected Designation of Origin (PDO).

Instead, the new Regulation functions as an instrument of systemic integration and modernisation through which existing rights are effectively translated into a more unified, horizontally structured, and functionally expanded regulatory framework. This transformation does not affect the substance of the right itself – that is, the legally protected relationship between the product, the geographical area, and its specific qualities that characterises a Protected Designation of Origin (PDO) – but rather the manner in which that right is administered, implemented, and enforced.

From this perspective, the reform may be understood as a transition from a relatively fragmented, sector-specific regulatory approach to a more coherent legal model. The new framework strengthens legal protec-

[6] An application is required only for geographical indications that fall within the scope of the new Regulation but were not covered by the previous legal framework, although they enjoyed protection under national law. Article 92 of Regulation (EU) 2024/1143 provides that the national protection granted to geographical indications which did not fall within the scope of Regulation (EU) No 1151/2012, but do fall within the scope of the new Regulation, shall expire on 14 May 2025, unless an application for registration has been submitted to the Commission by that date. After that date, such geographical indications may still be registered under the new Regulation; however, registration will take effect without preserving the national protection previously granted.

[7] *Article 93*

Continuity of the registers

1.Each designation of origin and geographical indication of wine and agricultural products, and each geographical indication of spirit drinks, including all relevant data and data concerning pending applications for registration, amendment or cancellation, entered in the respective registers of geographical indications referred to in Article 11 of Regulation (EU) No 1151/2012, Article 104 of Regulation (EU) No 1308/2013 and Article 33 of Regulation (EU) 2019/787, on 12 May 2024 shall be entered automatically in the Union register of geographical indications.

2. Each traditional speciality guaranteed entered in the register of traditional specialities guaranteed referred to in Article 22 of Regulation (EU) No 1151/2012, including all relevant data and data concerning pending applications for registration, amendment or cancellation, on 12 May 2024, shall be entered automatically in the Union register of traditional specialities guaranteed. https://eur-lex.europa.eu/eli/reg/2024/1143/oj (11.05.2026).

tion, including in the digital environment, institutionalises the role of producer groups as representatives of collective interests, and introduces the possibility of incorporating sustainability practices directly into product specifications. Consequently, the legal framework governing geographical indications (GIs) evolves from an instrument primarily concerned with certifying origin and quality into a broader mechanism for managing the economic, social, and cultural value of traditional products, while preserving the legal continuity of existing rights.

The principal difference between the previous regime established by Regulation (EU) No 1151/2012 and the new framework introduced by Regulation (EU) 2024/1143 may therefore be understood as structural in nature: a transition from a fragmented to a unified regulatory system. Whereas the previous regime regulated different product sectors through separate legislative instruments, the new Regulation consolidates these regimes within a coherent legal framework by establishing common rules applicable across different categories of products. In this respect, Regulation (EU) 2024/1143 expressly pursues the objectives of harmonisation, simplification, and a broader systemic approach. It also forms part of a wider reform of the EU system of geographical indications (GIs), which includes a separate legal framework for craft and industrial products.

The new Regulation also significantly strengthens legal protection, particularly in the digital environment, while enhancing the role of producer groups. One of its most important innovations is the explicit extension of protection to online platforms, internet domain names, and electronic commerce. It imposes obligations on Member States and relevant stakeholders to combat the misuse of geographical indications (GIs) in the digital environment.

Whereas under the previous legal framework producer groups performed primarily functional tasks, the new Regulation expressly recognises them as key actors and grants them broader powers, including responsibilities relating to the management of registered names, participation in control mechanisms, and the initiation of enforcement actions against infringements. It also permits the inclusion of voluntary sustainability commitments in product specifications or in accompanying documents prepared by producer groups. These elements did not constitute a central component of the regime established under Regulation (EU) No 1151/2012. From this perspective, the new legal framework may be viewed as reflecting broader global concepts of sustainable agriculture and sustainable development and their implementation at the local level (Stancheva, 2017, 247). It also seeks to accelerate registration procedures and to establish a clearer allocation of competences between Member States and the European Commission as part of the broader reform aimed at simplification and efficiency.

It may therefore be concluded that the essential difference between the two legal frameworks lies not in the substance of the protection itself but in the governance of the system, the expanded scope of protection – particularly in the digital environment – the enhanced role of producer groups, and the introduction of new policy objectives, including sustainability and administrative efficiency. Importantly, the new Regulation does not alter the legal status of previously registered products but rather modernises and expands the legal framework within which that status operates.

Within EU law, geographical indications (GIs) do not create an exclusive right in favour of the applicant but establish a collective system of use under which the right to use the protected name is not confined to those who submitted the registration application. Under both Regulation (EU) No 1151/2012 and Regulation (EU) 2024/1143, the right to use a registered designation belongs to all producers operating within the defined geographical area who produce the relevant product in accordance with the approved product specification. Under Regulation (EU) No 1151/2012, this principle follows from a systematic interpretation of the provisions governing the definition of Protected Designations of Origin (PDOs) and Protected Geographical Indications (PGIs), the content of the product speci-

fication (Articles 5 and 7), and the protection afforded to registered names (Article 13).

The new Regulation expressly confirms this approach through provisions establishing that every operator whose production complies with the relevant product specification is entitled to use the registered geographical indication (GI)[8]. Consequently, the applicant (typically a producer group) does not acquire an exclusive right to the registered name but merely initiates the registration procedure.

Accordingly, under both legal frameworks, geographical indications (GIs) function as a form of collective right based on open access, where entitlement to use the protected name depends not upon membership of a particular organisation or legal entity but upon objective compliance with the legally prescribed requirements (Regulation (EU) No 1151/2012, Articles 5, 7, 13 and 49; Regulation (EU) 2024/1143).

CONCLUSION

Viewed within the broader legal context of intellectual property and geographical indications, Hughes' distinction (Hughes, 2006, 303) between the fundamental functions of geographical terms used in product names remains valid. According to Hughes, such terms serve several core purposes: indicating geographical origin, signalling particular qualities, and creating emotional and aesthetic value.

Accordingly, Hughes argues that, since 2004, the European Union has sought to "reclaim" more than forty geographical terms that have become generic names for food products in other jurisdictions (such as Parmesan cheese and Champagne). In the author's view, however, the underlying objective is straightforward: to secure control over geographical terms because of their emotional value in the marketplace. The monopoly over such terms, together with the exclusive control over their emotional value, has shaped the European Union's position in debates and policymaking concerning geographical indications (Hughes, 2006, p. 305).

The current legal status of Strandzhanski manov med is therefore significant not only in its own right but also as a gateway to a broader range of research questions concerning the Strandzha region. The subject is inherently interdisciplinary, situated at the intersection of legal scholarship and cultural studies. Research on products protected by geographical indications demonstrates that such products function as markers of identity, playing an important role in various legitimising narratives within the broader processes of the "culturalization of products and the economisation of culture" (Petrov, 2017, p. 158).

From a legal perspective, the issue falls within the field of intellectual property – and more specifically industrial property – as it concerns the legal framework governing geographical indications. Accordingly, this paper has examined the applicable legal framework together with the innovations introduced by European Union secondary legislation, in particular Regulation (EU) 2024/1143, which establishes a directly applicable and binding legal framework in this field.

At the same time, the analysis has highlighted that geographical indications function not merely as legal instruments for the protection of economic interests but also as mechanisms that mediate and structure the relationship between product, territory, and tradition. It is precisely this dual function – law acting simultaneously as a protective and transformative mediator between economy and culture, that justifies the incorporation of cultural and anthropological perspectives

[8] Article 36 of Regulation (EU) 2024/1143 expressly confirms the collective nature of the system of geographical indications. It provides that a registered geographical indication may be used by any natural or legal person marketing a product that complies with the relevant product specification. Member States are required to ensure that operators are subject to verification of compliance with the product specification in accordance with Article 39 of the Regulation or, where applicable, Article 116a of Regulation (EU) No 1308/2013. Furthermore, where a geographical indication consists of, or contains, the name of the applicant producer's holding, this does not prevent other operators from using the registered geographical indication, provided that it is used in relation to a product complying with the product specification.

into the analysis of the associated practices, knowledge, and forms of intangible cultural heritage.

Equally important is the relationship between place, cultural tradition, and product identity, since consumers frequently perceive regional products not merely as commodities but also as carriers of local history, authenticity, and cultural belonging. This symbolic and cultural dimension contributes significantly to the value created by the system of Protected Designations of Origin (PDOs) and Geographical Indications (GIs) (Tregear, 2007).

From this perspective, geographical indications may be understood not only as mechanisms for the legal protection of origin but also as instruments for institutionalising and legitimising particular conceptions of local identity, tradition[9], and authenticity, through which cultural heritage is translated into an economic resource and an object of legal protection (Tregear, 2007).

This, in turn, raises important questions concerning the limits of legal intervention in the safeguarding of intangible cultural heritage and the role of law not merely as an instrument of protection but also as an active participant in shaping and constructing that heritage. These questions are likely to become increasingly important within future interdisciplinary research.

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[9] For the purposes of Title III, Chapter 2 of Regulation (EU) 2024/1143, Article 2(3) defines *"traditional"* as proven historical use of the name by producers within a community for a period that allows transmission between generations. Such period must be at least 30 years, and the demonstrated use may include modifications necessitated by changes in hygiene practices, food safety requirements, and other relevant practices.

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Някои наблюдения около правното положение на продукта „Странджански манов мед“

Даниела Симеонова-Коруджиева

Резюме: Настоящата статия представя изследване, наблюдения и анализ на настоящия правен статут на продукта „Странджански манов мед“ в рамките на системата на Европейския съюз за географските указания. Особено внимание се обръща на правната защита, свързваща продукта с географския регион Странджа и с неговите специфични природни и традиционни производствени фактори, като ключов механизъм както за защита на икономическата стойност на традиционните продукти, така и за косвено съхраняване на знанията и практиките, свързани с тях. В този контекст в статията се разглежда дали тази правна рамка функционира единствено като инструмент за защита или дали тя участва и в процесите на трансформация на традицията чрез нейната стандартизация, институционализация и интеграция в пазарните механизми.

Ключови думи: географски указания; защитено наименование за произход (ЗНП); интелектуална собственост; културно наследство

Research and Applied Perspectives on the Socialization of the Natural Monument: Gradishteto – est. Nahodishte na Sinya Hvoyna“

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Abstract: *In the PubMed medical database, a search using the keywords “juniper oil”—with no restrictions on publication date and limited to open-access studies—yields 122 studies (Last accessed April 17, 2026). This report analyzes the areas of scientific research, the types of juniper, and the prospects for application in the fields of public health and healthcare—particularly health tourism—as part of the promotion of natural heritage, in particular Blue Juniper Site in the Gradishte Area, and its integration into various sectors of the recreational industry.*

Keywords: *Juniper oil; healthtourism; promotion of natural heritage; “Strandja” Geopark*

SCIENTIFIC RESEARCH WITH JUNIPER OIL

According to the European Environment Agency, there are 30 species names for juniper, 18 of which are classified as unique (Valid name) and 12 as synonyms (Synonym) (European Environment Agency, n.d.).

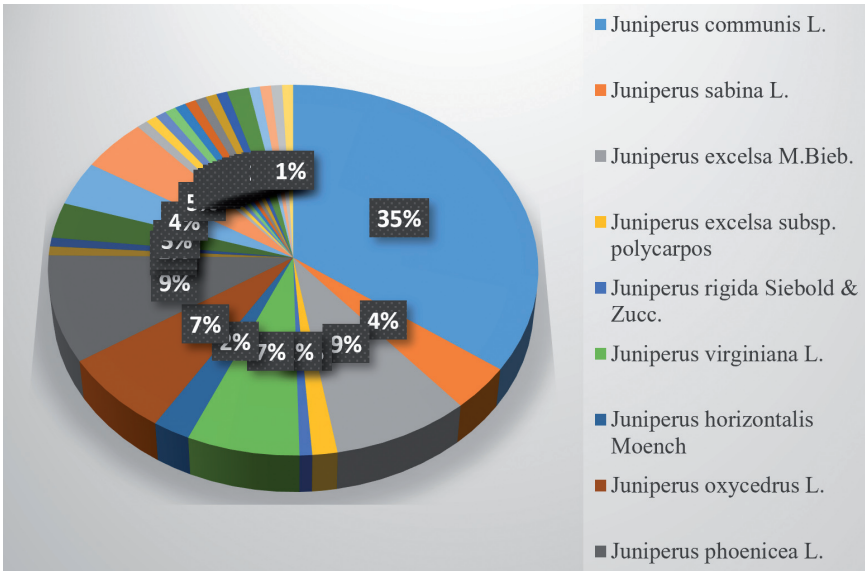

Figure 1. Juniper species (n = 28) included in the studies

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A search was conducted in PubMed using the keywords "juniper oil" with no restrictions on the publication period; free full text; the search yielded 124 studies (April 17, 2026), of which 122 were analyzed and two were irrelevant. Fig. 1 shows the juniper species included in this study. The largest percentage of the studies focused on Juniperus communis L. (35%), followed by Juniperus Phoenicia L. (9%); Juniperus excelsa M. Bieb. (9%); Juniperus excelsa M. Bieb. (9%); Juniperus oxycedrus L. and Juniperus virginiana L. (7% each); Juniperus chinensis L. (5%); Juniperus procera Hochst. ex Endl. and Juniperus sabina L. (3% each); Juniperus horizontalis Moench and Juniperus ashei J. Buchholz (2% each); and the following, each at 1%, namely: Juniperus excelsa subsp. polycarpos, Juniperus rigida Siebold & Zucc., Juniperus phoenicea subsp. turbinata (Guss.), Juniperus drupacea Labill., Juniperus formosana Hayata, Juniperus californica Carrière, Juniperus thurifera L., Juniperus seravschanica Kom., Juniperus pseudosabina Fisch. & C.A.Mey., Juniperus sibirica, Juniperus scopulorum Sarg., Juniperus recurva Buch.-Ham. ex D.Don, Juniperus brevifolia (Seub.) Antoine, Juniperus pinchotii Sudw., Juniperus turbinata Guss., Juniperus indica Bertol., Juniperus seravschanica Kom., Juniperus deppeana Steud. The data obtained identify Juniperus communis L. as the predominant juniper species of interest to researchers.

RESEARCH TRENDS

After analyzing the 122 studies published in PubMed, we categorized them into the following areas: therapeutic applications, n=52 (42%); composition and properties of oils, n=22 (18%); food industry n=17 (14%); insecticides/repellents n=16 (13%); plan cultivation n=17 (14%); livestock farming n=4 (3%); biotechnology n=2 (2%); bioenergy n=2 (2%).

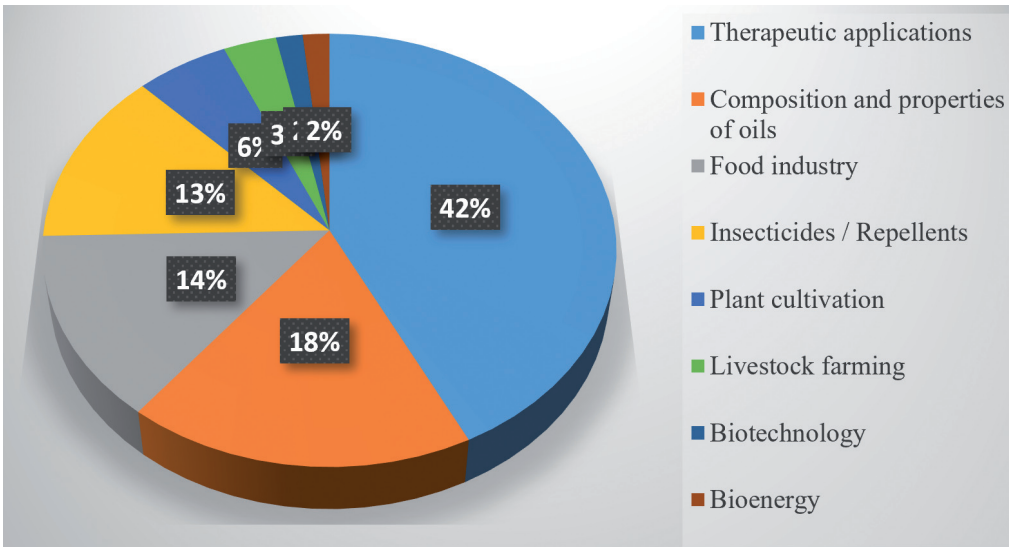

Figure 2. Research trends

Figure 2 shows that the largest number of studies focus on the therapeutic potential of juniper (n=52, 42%). Next in terms of representation are studies on the composition and properties of oils (n=22, 18%), some of which are again related to therapeutic applications and the food industry (n=17, 14%), where potential health benefits are also discussed. The text below presents the research areas and illustrative studies within each area.

Therapeutic applications

Most of the research on therapeutic applications has focused on the juniper species found in the "Gradishte" area of the Strandja Mountains. Other species studied include Juniperus rigida Siebold & Zucc., Juniperus virginiana L., Juniperus phoenicea, Juniperus oxycedrus L., Juniperus virginiana L., Juniperus excelsa subsp. polycarpos; Juniperus camphor; Juniperus procera Hochst. ex Endl.;

Juniperus chinensis L.; Juniperus morrisonicola Hayata; Juniperus sabina L.; Juniperus excelsa M. Bieb; Juniperus procera;Juniperus thurifera L.; Juniperus phoenicea; Juniperus excelsa; Juniperus seravschanica.

The effect of juniper on urinary tract function is empirically well-known, which explains the interest shown by Frydrysiak, E. et al. (2021). The authors highlight the fact that lower urinary tract inflammation is a very common problem, particularly among women. The study presents a concept for a system of preventive and supportive treatment for lower urinary tract infections. It was found that the essential oil of Juniperus communis L. inhibits the growth of S. epidermidis and E. faecalis, with no effect on E. coli. The results not only demonstrate the potential therapeutic effect of juniper in urinary tract infections but also identify the specific pathogens against which a positive therapeutic effect can be expected.

Cancer in today's world is not only widespread but is also one of the leading causes of death worldwide. It is no coincidence that the fight against cancer is a top priority for both the World Health Organization and the European Commission. Any research related to prevention and treatment is of great medical and social significance. The number of studies on the use of aromas for cancer prevention is growing; these studies focus on identifying essential oils with anticancer effects, as well as those in which aromatherapy is used to improve patients' quality of life.

Marković et al. (2024) investigated the antitumor potential of Juniperus communis fruit essential oil on cervical cancer cells. The results show that the essential oil from the berries of J. communis interferes with the molecular mechanisms of cancer cells. The authors identify the essential oil from the berries of J. communis as a promising natural agent with anticancer potential.

Acute inflammatory processes are the focus of the study by Bolunduț et al. (2026). Their study investigates the antioxidant and anti-inflammatory potential of an ethanol extract from J. communis needles, using in vitro analyses and an in vivo model of acute inflammation induced by turpentine oil in rats.

The results show that an ethanol-based extract of Juniperus communis needles is capable of modulating the redox-inflammatory response in an experimental model of acute inflammation. The observed effects suggest that simultaneously targeting oxidative stress and inflammatory signaling may represent an effective strategy for limiting acute inflammatory damage.

Of particular interest is a study conducted by Höferl et al. (2014). Essential oil from juniper berries (Juniperus communis L., Cupressaceae) is traditionally used for medicinal and aromatic purposes. As determined by gas chromatography/flame ionization detector (GC/FID) and gas chromatography/mass spectrometry (GC/MS) methods, the juniper berry oil from Bulgaria consists primarily of monoterpene hydrocarbons such as α-pinene (51.4%), myrcene (8.3%), sabinene (5.8%), limonene (5.1%), and β-pinene (5.0%). The antioxidant activity of the oil, due to electron transfer, makes juniper essential oil a powerful antioxidant with potential benefits for the production of dietary supplements, providing an effective way to improve people's health and quality of life.

Composition and properties of oils

The composition and properties of juniper essential oil were examined in 18% of the studies in our sample. Of particular interest is a study by Petroianu et al. (2018), who conducted a historical retrospective review of available sources. Turpentine and juniper were widely used in ancient times for both ritual and medical purposes, including in Egyptian kiph. The authors discovered a text on pediatrics written by John Appley in the mid-1970s, which mentions the role of Cleopatra's urine in her amorous games. Taferieophrastus (c. 371–c. 287 BCE), the father of botany: in his book "De odoribus", he mentions that juniper berries make urine pleasantly fragrant. According to Plutarch, Alexander the Great's sweat smelled of violets (Monin, 1886). The author believes that when something or someone smells of violets, it is most likely due to the ingestion of turpentine and/or juniper.

Food industry

Fourteen percent of the studies focus on the potential applications of juniper in the food industry. A study conducted by Bhatia et al. (2025) found that the inclusion of juniper berry

essential oil significantly improves the thermal degradation resistance and antioxidant activity of food packaging films. Furthermore, the films exhibited remarkable antimicrobial properties, effectively inhibiting the tested pathogenic bacteria and fungi. These findings highlight the potential of these films to serve as sustainable alternatives to traditional synthetic packaging in food applications.

Insecticides/repellents

Unlike most of the studies analyzed above, which focus primarily on the juniper species Juniperus communis L., studies on their insecticidal and repellent effects also involve the following species: Juniperus virginiana L.; Juniperus chinensis; Juniperus recurva; Juniperus procera; Juniperus oxycedrus L.; Juniperus indica Bertol.; and Juniperus phoenicea. Chang et al. (2025) investigated the chemical constituents of the essential oil from the leaves of J. chinensis var. kaizuka. The composition of the juniper was analyzed by gas chromatography–mass spectrometry and consists primarily of monoterpenoids. Its main compounds are limonene (33.33%), bornyl acetate (23.71%), β-elemol (14.99%), β-myrcene (8.11%), and sabinene (3.54%). The results indicate that monoterpenoids with an isopropenyl group may exhibit superior larvicidal activity against mosquitoes.

Plan cultivation

Six percent of the studies are related to juniper cultivation. The species studied are Juniperus communis L.; Juniperus phoenicea L.; Juniperus drupacea Labill.; Juniperus excelsa M. Bieb.; Juniperus horizontalis Moench; Juniperus excelsa subsp. polycarpos; Juniperus phoenicea; Juniperus procera; and Juniperus brevifolia (Seub.) Antoine. The significance of fungal infections and certain challenges in their treatment have led to increased interest in finding new fungicides to replace chemical ones. The results of a study by Mehdizadeh et al. (2020) show that the essential oil from the leaves of J. polycarpos var. turcomanica is a suitable alternative to synthetic fungicides for use in the agro-industry. The phytotoxic activity of the essential oil from J. polycarpos var. turcomanica on various plants may aid in the production of new herbicides for weed control.

Livestock farming

The research in the livestock section focuses on the species Juniperus communis L. At the request of the European Commission, a scientific opinion was prepared regarding the safety and efficacy of juniper oil and juniper tincture derived from the berries of Juniperus communis L., which are used as feed additives for animals. It was concluded that juniper tincture is safe up to the maximum proposed level of use in feed of 45 mg/kg of feed or drinking water (Bampidis et al., 2023)

Biotechnology

Peruč et al. (2018) investigated the effects of essential oils from juniper (Juniperus communis) and Italian immortelle (Helichrysum italicum) against Mycobacterium avium, M. intracellulare, and M. gordonae in tap water and against their adhesion to Acanthamoeba castellanii. The results show that the essential oils or their components weaken the interaction between nontuberculous mycobacteria from the environment and free-living amoebae and indirectly reduce their pathogenic potential, which could be valuable in developing strategies for maintaining water supply systems.

Bioenergy

The study conducted by Ahmouda (2026) highlights the novel relationship between the hydrophobicity of the extract, the surface chemistry of the nanoparticles, and the quality of the biodiesel, providing a green strategy for designing plant-based nanocatalysts capable of producing biodiesel compliant with EN 14214 (≤1.91 mM glycerol). The economic assessment highlights the commercial potential of this method. The production cost of biodiesel was calculated at $1.12 per kg, a figure that is highly competitive and is partly due to the use of a hydrophobic ROS-FeNP catalyst. The juniper species used in the study is Juniperus phoenicea.

The promotion of natural heritage and its integration into various sectors of the recreational industry is an area with established best practices, as demonstrated by studies by Bulgarian researchers such as Angelcheva and Petkova (2019); Dimitrova and Nesheva (2021), Dimitrova and Tomova (2024); Dimitrova (2017); Dimitrova et al. (2021), among others. The present study takes a different approach in this field. In the following text, we examine possible perspectives for the socialization of a specific natural feature

THE NATURAL MONUMENT: "GRADISHTETO - EST. NAHODISHTE NA SINYA HVOYNA" — CHARACTERISTICS AND PROSPECTS FOR PUBLIC ACCESS

The Natural Monument: Gradishteto - est. nahodishte na sinya hvoyna" falls within the jurisdiction of the Regional Inspectorates for Environment and Water/National Parks Directorates in Burgas.

The total area of the site is 2.0 hectares. It was designated as a protected area by Order No. 1427 of May 13, 1974, published in Issue No. 44/1974 of the State Gazette (1427-1974). The purpose of the designation is to preserve the only natural habitat of the blue juniper. The following activities are prohibited in the area: cutting down or pruning trees, as well as picking or uprooting any plants; grazing of livestock; the hunting of wild animals, birds, and their young, and the destruction of their nests and dens; the opening of quarries for stone, sand, and soil, which alters the natural appearance of the area, including watercourses and other features. There is an overlap (partial or complete) with the Strandja Nature Park and the Special Protection Area under the Birds Directive: Strandja (Register of Protected Areas in Bulgaria, n.d.).

A Trans-European tourism perspective on the socialization of the natural monument: "Gradishteto - est. Nahodishte na sinya hvoyna"

According to Resolution CM/Res(2023)2 on the revision of the rules for awarding the "Council of Europe Cultural Route" certification, one of the priority areas of action is "Enhancing Memory, History, and European Heritage," the essence of which is "… identifying and enhancing European heritage sites and areas other than the monuments and sites typically used for tourism, particularly in rural areas, but also in industrial zones undergoing economic restructuring" (Council of Europe, 2023).

One of the certified cultural routes is the European Route of Historic Pharmacies and Medicinal Gardens. It consists of a network of routes called "Aromas Itinerarium Salutis" which "... reflects the richness and diversity of Europe's pharmaceutical heritage and medicinal gardens." Bulgaria has an established representative in this network, namely the Botanical Garden of the Bulgarian Academy of Sciences (BAS) in Sofia, Bulgaria[20].



Figure 3. Common juniper (Juniperus communis L.), the "Gradishte" area (Dnevnik, 2014)



Figure 4. The European Route of Historic Pharmacies and Medicinal Gardens (Aroma Itinerarium Salutis, n.d.)

The European Route of Historic Pharmacies and Medicinal Gardens is managed by AIS NETWORK, which, as of April 17, 2026, has ten municipalities; nine associative and cultural stakeholders; twenty-six museums/heritage sites; thirteen universities and research centers—including the Bulgarian Academy of Sciences (BAS) in Sofia, Bulgaria; eight SMEs; five individuals; four other entities; three cooperation partners; and one cross-sectoral network. There are 48 AIS member destinations (Aroma Itinerarium Salutis, 2026).

The European Route of Historical Pharmacies and Medicinal Gardens has been a "Cultural Route of the Council of Europe" since 2024 The procedure for membership and joining the network is clearly described on the organization's website (Aroma Itinerarium Salutis, n.d.). To meet the selection criteria, an organization must engage in at least one of the following activities: Investigation and development; Cultural heritage; Education; Artistic and contemporary practices; Sustainable tourism (Dnevnik, 2014).

The call for membership in AIS is the official annual procedure with specific deadlines for selection; for 2026, it proceeded through the following phases: (Submission: October 6–December 5, 2025; Correction: December 5–31, 2025); Virtual meeting with applicants and the Scientific Committee (January 15, 2026); Evaluation (January 16–February 15, 2026); Results (March 3–10, 2026) (Dnevnik, 2014).

The rationale for including the "Natural Monument: Gradishteto - Est. Nahodishte Na Sinya Hvoyna" is that it fits within the concept of showcasing "…places of memory or symbolic significance that contribute to the broader narrative of health, care, and botanical knowledge in European history… in line with "…the Cultural Route's mission to preserve and promote a multifaceted and interdisciplinary interpretation of European cultural heritage" (Aroma Itinerarium Salutis, n.d.).

An example of such a destination is "The Scents of Turia."



Figure 5. Les Aromes del Túria (Les aromes del Turia, Riba-roja de Turia, Spain, n.d.)

The Municipal Council of Ribarroja de Turia initiated the creation of the "Aromas of Turia" destination and is also participating in the development of the "European Route of Historic Pharmacies and Medicinal Gardens". The idea is to showcase the unique diversity of aromas and medicinal plants along the Turia River. In essence, this is indeed exactly as promoted: "…a unique cultural and ecological initiative…" that "…connects the local landscape with the traditions of health and well-being." It offers "…an educational and immersive experience." (Les aromes del Turia, Riba-roja de Turia, Spain, n.d.).

Unique experiences—precisely—are the new tourism trend set by millennials and followed by subsequent generations. The "Strandja" Nature Park, and in particular the "Natural Monument: Gradishteto - Est. Nahodishte Na Sinya Hvoyna" protected zone, has great potential for the development of wellness tourism in the region.

A local tourism perspective on the socialization of the natural monument: "Gradishteto – est. Nahodishte na sinya hvoyna"

A prerequisite for the development of sustainable tourism is the existence and management of the Strandja Nature Park. A hiking trail has been built and is maintained leading to the blue juniper site in the Gradishte area. According to information available online, organized hikes to the site are rare (Hike to Golyamo Gradishte Peak with a visit to the blue juniper site, organized by the "Green Strandja" Tourist Association (Zelena Strandja, n.d.).



Figure 6. Cleanup of the "Blue Juniper" Trail (Gramofona, n.d.)



Figure 7. Strandja mountain
Photo: Dilyana Dobreva

The local perspective on promoting the destination involves publicizing it and incorporating it into wellness packages offered by major seaside hotels, in line with efforts to extend the tourist season beyond the busy summer months.

SWOT ANALYSIS

Figure 7 presents the main aspects of the SWOT analysis. Strengths. The strengths are related to the existing, well-established hiking trail. The trail is a local attraction and is visited by organized groups of tourists. Weaknesses. An important factor is that the site is located in a border region. It is not suitable for independent travel. Opportunities. Incorporating the natural landmark into a cultural route, specifically the "European Route of Historic Pharmacies and Medicinal Gardens"; Another opportunity for promotion is organized group tourism and linking the destination to the overall concept of the "Strandja" Geopark. Threats. There are risks related to safety and the underestimation of wildlife and the specific characteristics of the border zone. The area is monitored by border police, but this does not negate the need for hikes to be organized by a specialist in orienteering tourism, a mountain guide, or a local guide.

CONCLUSION

Our study demonstrates the existence of research prospects and scientific evidence regarding the therapeutic potential and applicability of juniper in various economic sectors.

The positive example of the Municipal Council of Ribarroja de Turia, Valencia Province, Spain, and the "Aromas of Turia" route it has developed, provides a similar basis for applying to include the "Natural Monument: Gradishteto - Est. Nahodishte Na Sinya Hvoyna" in the "European Route of Historic Pharmacies and Medicinal Gardens".

The natural landmarks of the Strandja Mountains, combined with existing and prospective tourist routes that incorporate aesthetic and/or educational elements of archaeological, ecological, historical, or cultural value, are a prerequisite for sustainable economic development within the context of the overall vision for the creation of the "Strandja" Geopark.

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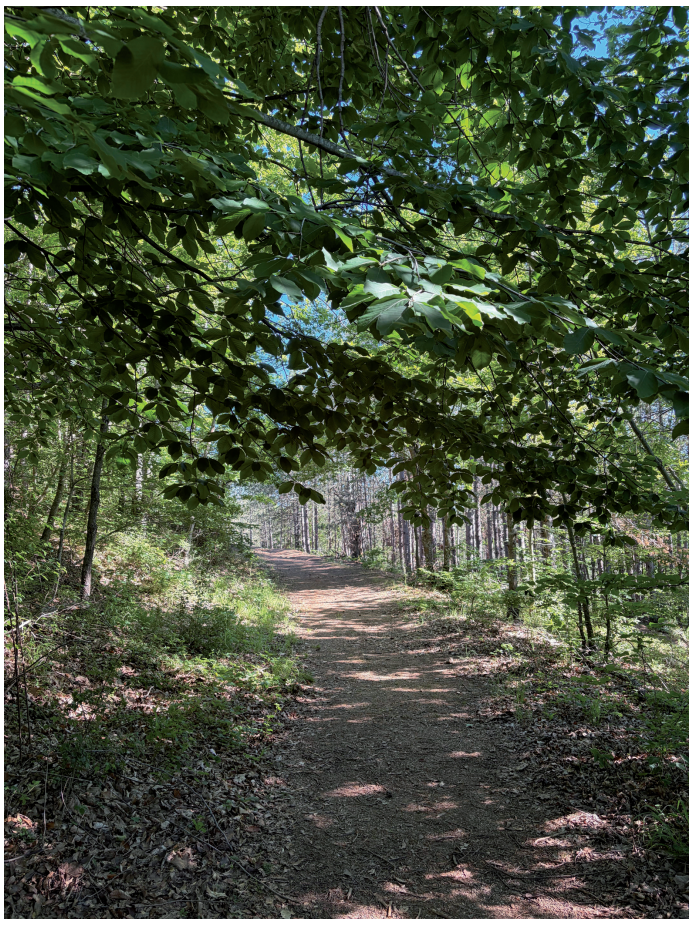
Изследователски и приложни перспективи за социализиране на ПЗ „находище на синя хвойна в м. Градището“

Дияна Добрева

Резюме: При търсене в медицинската база данни PubMed с ключовите думи „масло от хвойна“ — без ограничения по дата на публикуване и с ограничение до проучвания с отворен достъп — се получават 122 проучвания (последно посещение на 17 април 2026 г.). Настоящият доклад анализира областите на научните изследвания, видовете хвойна и перспективите за приложение в сферите на общественото здраве и здравеопазването – по-специално в здравния туризъм – като част от популяризирането на природното наследство, в частност “Находище на синя хвойна в м. Градището”, и неговата интеграция в различни сектори на развлекателната индустрия.

Ключови думи: масло от хвойна; здравен туризъм; популяризиране на природното наследство, Геопарк „Странджа“



Strandja mountain Автор: Дияна Добрева
Photo: Dilyana Dobreva

Music Therapy as a Holistic Intervention for Enhancing Wellness Lifestyle and Oxygen Saturation

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Abstract: *This study aimed to investigate the effects of music therapy as a complementary wellness intervention by evaluating its impact on both objective physiological parameters and subjective perceptions of health and well-being. Particular emphasis was placed on the influence of different sound frequencies on blood pressure, oxygen saturation (SpO_2), pulse rate, pulse intensity, and participants' self-reported wellness experiences (Selfness). The research combines physiological assessment with consumer-based evaluation to provide a comprehensive understanding of music therapy within a holistic wellness framework. The study was conducted within the activities of the Bulgarian Centre of Excellence Heritage BG, which promotes innovative, evidence-based approaches for health promotion and sustainable wellness. Experimental findings demonstrate the physiological responses elicited by selected sound stimuli and assess participants' satisfaction with this intervention. By integrating objective biomarkers with subjective health outcomes, the study contributes to the growing evidence supporting music therapy as a safe, non-invasive, and innovative strategy for enhancing health, well-being, and healthy lifestyle practices.*

Keywords: *music therapy; wellness lifestyle; O2 saturation; holistic approach; well-being*

INTRODUCTION[1]

This study explores the impact of music therapy on wellness lifestyles and physiological health indicators, focusing specifically on oxygen saturation (SpO2) as a measurable parameter of well-being (Bradt and Dileo 2014 ; Nilsson, 2008 ; Lee, 2016). A mixed-method approach was employed to evaluate how music-based interventions affect participants' subjective wellness and biological markers. Results from a three-month pilot intervention indicate statistically significant improvements in both perceived wellness and oxygen saturation levels, especially in individuals practicing regular wellness activities (Dimitrova, 2019a ; Dimitrova, 2019b). In the contemporary paradigm of holistic health and wellness, music therapy has emerged as a scientifically supported, non-invasive intervention that facilitates both psychological and physiological well-being (Antonova and Ivanov, 2023 ; Donev et al., 2019 ; Dumas et al., 2009). Rooted in the therapeutic use of sound and rhythm, music therapy is increasingly integrated into wellness programs aimed at reducing stress, managing emotional disturbances and pro-

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[1] ChatGPT is used for English grammar revision and translation.

moting homeostasis in bodily systems (Dunkel Schetter and Tanner, 2012 ; Glover, 2014 ; Goodman and Santangelo, 2011). Studies in psychoneuroimmunology and neuroradiology suggest that auditory stimuli—particularly structured musical interventions—can positively modulate the autonomic nervous system (Verma and Agarwal, 2022). Musical frequencies lead to measurable effects such as reduced cortisol levels, lowered heart rate, and improved oxygen saturation (SpO_2) (Letourneau et al., 2012 ; Nesheva 2019). The rationale for incorporating music into wellness routines stems from its multi-modal impact—engaging cognitive, emotional, and somatic domains simultaneously. As wellness strategies shift toward preventive care and personalised interventions, music therapy aligns well with the goal of sustainable health optimisation (Nesheva, 2020 ; Angelcheva and Petkova, 2019 ; Nesheva 2023). This study aims to explore the impact of music therapy on oxygen saturation and perceived wellness, with a focus on identifying empirical relationships between emotional regulation, respiratory function, and subjective quality of life (Andonov and Angelov, 2024 ; Popova-Dobreva, 2022). By evaluating changes in SpO_2 levels and wellness lifestyle indices before and after exposure to guided music therapy sessions, this research seeks to provide evidence for music therapy's role as an integral component of modern wellness practices (Tomova, 2024 ; Dimitrova, 2020). Furthermore, the study investigates the differential impact of genre, tempo, and session frequency on physiological outcomes, contributing to the development of evidence-based protocols for integrating music therapy into both clinical and recreational wellness settings. The findings may offer valuable insights for healthcare providers, wellness coaches, and spa and rehabilitation centres aiming to enhance outcomes through non-pharmacological and cost-effective therapeutic modalities.

METHODOLOGY[2]

2.1 Measures: We utilise the following methods for recording indicators in our study:

The Santa medical Fingertip Pulse Oximeter is a clinically validated device designed for the non-invasive measurement of arterial blood oxygen saturation (SpO_2), pulse rate, and pulse intensity (**see Fig. 1**).



Figure 1. Fingertip pulse

We employed the A&D Medical Oscillometric Non-Invasive Blood Pressure and Pulse (NIBP) Monitor, a highly reliable device designed for precise measurement of systolic and diastolic blood pressure, as well as heart rate (**see Fig. 2)**.



Figure 2. Oscillometric non-invasive blood pressure (NIBP)

The system is equipped with advanced functionalities including irregular heartbeat detection, three-reading averaging, and Bluetooth connectivity, enabling seamless integration with multiple health monitoring applications.

2.2. Statistics: Correlation analysis was conducted to reveal the interdependencies among these variables. The study aim was by analysing the physiological responses associated with different musical frequencies, to determine how musical therapy impact oxygen-

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

ation levels and overall cardiovascular and respiratory function. Wellness Lifestyle Index (WLI), a composite score derived from questionnaires assessing nutrition, sleep, physical activity, and mental well-being participant self-assessment logs.

2.3. Study limits: As this study is under the objectives of the Scientific Centre of Excellence Heritage BG, all experts were recruited through a public announcement. The participants gave informed consent for the publication of their data. The study was conducted: September 2023 to April 2025.

2.4. Participants: A total of 96 adult participants (48 males, 48 female) aged 25 to 60 years were selected. They were randomly divided into two groups: experimental (n=48) and control (n=48). Inclusion criteria included no chronic health conditions and willingness to participate in bi-weekly music therapy sessions.

2.5. Intervention: The experimental group received 45-minute music therapy sessions twice a week for 12 weeks, involving guided listening, rhythmic breathing, and relaxation music. The control group did not receive any structured music intervention.

RESULTS

Music therapy has gained empirical support as a non-invasive modality contributing to physical, emotional, and psychological health. One of the mechanisms behind its effectiveness lies in the frequency of sound waves, which interact with the human nervous system and bioelectrical activity. Frequencies (measured in Hertz, Hz) affect different physiological systems through vibrational resonance, potentially influencing brain wave activity, heart rate, muscle tension, and stress hormone levels.

Table1. Common sound frequencies used in music therapy and their health effects

Frequency (Hz)	Application Area	Reported Benefits	Target Outcome
40 Hz	Neurorehabilitation	Increases gamma activity, improves memory in dementia	Cognitive enhancement, neuroplasticity
60 Hz	Deep tissue healing	Resonates with muscle and fascia, reduces muscle tension	Physical recovery, relaxation
174 Hz	Pain relief	Alleviates physical pain and stress	Analgesia, calm
285 Hz	Cellular repair	Promotes tissue regeneration and healing	Regeneration, vitality
396 Hz	Emotional release	Frees from guilt and fear	Emotional resilience
432 Hz	General wellness	Enhances inner peace, balances energy	Stress reduction, emotional balance
528 Hz	DNA repair, heart activation	Claimed to promote cellular health and consciousness	Vitality, heart coherence
639 Hz	Relationship / connection	Encourages interpersonal connection and empathy	Social bonding, mental health
741 Hz	Detoxification	Purported to aid in cellular cleansing	Toxin reduction, clarity
852 Hz	Intuition and awareness	Enhances spiritual insight and balance	Mindfulness, self-awareness
963 Hz	Pineal gland activation	Used in meditative states, deep connection	Expanded consciousness, harmony

Mid-range frequencies (250 – 500 Hz) are linked to balance and emotional clarity, whereas higher frequencies (above 500 Hz) have been shown to stimulate alertness, memory, and even physical healing through cellular resonance. Low-frequency sounds (e.g., 40–100 Hz) are often associated with deep relaxation and improved sleep, resonating with delta and theta brainwave patterns.

Different frequencies serve distinct functions in wellness and therapeutic contexts. Tailoring music therapy by frequency can enhance its efficacy across domains—cognitive health, emotional regulation, pain management, and cellular recovery. Future clinical research should continue exploring the biological mechanisms behind sound therapy and its integration into personalized wellness protocols. Table 2 shows a 1.7% increase in the experimental group vs. 0.1% in control for

the biomarker: Change in Oxygen Saturation (%). For the Wellness Lifestyle Index Progression data showing a sharp upward trajectory in WLI for the experimental group.

Table 2. Pre- and post-intervention comparisons

Variable	Experimental Group (Pre)	Experimental Group (Post)	Control Group (Pre)	C
SpO2 (%)	96.1	97.8	95.9	
WLI Score (0–100)	58.2	76.4	59.1	

To determine the effectiveness of the Wellness procedure, a comparative analysis of before and after the Wellness influences registered scores within the experimental and the control group was conducted (**see Tab. 3**):

Table 3. Wellness procedure effect analysis – pared samples test

Paired Differences	Mean	Std. Deviation	Std. Error Mean	95% CI Lower	95% CI Upper	t	df	Sig. (2-tailed)
Before – After	72.611	5.692	1.34519	-0.0543	5.45123	2.007	29	0.0521

Levene's test for equality of variances yielded **F = 2.931** (p = 0.097), indicating that the assumption of homogeneity of variances was satisfied. Consequently, the independent-samples t-test was interpreted under the assumption of equal variances. The comparison between the experimental and control groups produced a non-significant result (p = 0.308), indicating no statistically significant between-group differences in the assessed variables following the Wellness intervention.

Within-group comparisons (Table 3) demonstrated changes in the experimental group after the Wellness procedures, particularly in pulse frequency, suggesting a favourable physiological response associated with positive emotional states. However, the observed difference approached, but did not reach, the conventional level of statistical significance (p = 0.052). Although these findings indicate a potential effect of the intervention, confirmation requires studies with larger sample sizes and greater statistical power.

Correlation analysis revealed significant associations among physiological, emotional, and environmental variables. Oxygen saturation (SpO_2) was moderately positively correlated with physical activity (r = 0.629) and emotional well-being (r = 0.277), suggesting that higher oxygenation is associated with better physical and psychological status. Conversely, SpO_2 showed a strong negative correlation with ambient temperature (r = –0.762), indicating that higher environmental temperatures may adversely affect oxygen saturation. Pulse rate was strongly negatively correlated with both SpO_2 (r = –0.746) and physical condition (r = –0.827), suggesting that elevated heart rate may reflect reduced physical fitness and lower oxygenation. Emotional state was positively correlated with diastolic blood pressure (r = 0.692), systolic blood pressure (r = 0.623), and pulse rate (r = 0.528), further supporting the close interaction between emotional responses and cardiovascular function. Overall, these findings underscore the interconnected nature of physiological, emotional, and environmental factors and support their integrated assessment in Wellness research. Blood pressure indices (BPD and BPS) were strongly positively correlated (r = 0.707), validating their expected physiological coherence. Interestingly, room temperature negatively correlated with both BPD and BPS, though more modestly, suggesting that environmental conditions impact cardiovascular parameters. (**see Tab. 4**):

Table 4. Correlation coefficients representing the relationships between the recorded indicators

Variable 1	Variable 2	Correlation Coefficient (r)	Direction / Interpretation
Oxygen Saturation (SpO_2)	Physical Activity	+0.629	Moderate positive correlation – higher activity = better oxygenation
Oxygen Saturation (SpO_2)	Emotional Well-being	+0.277	Weak positive correlation – oxygenation supports mental health
Oxygen Saturation (SpO_2)	Room Temperature	–0.762	Strong negative correlation – warmer environment lowers oxygen saturation
Pulse	Oxygen Saturation (SpO_2)	–0.746	Strong negative correlation – higher pulse = lower oxygenation
Pulse	Physical Condition	–0.827	Strong negative correlation – lower pulse = better physical condition
Emotional State	Diastolic Blood Pressure (DBP)	+0.692	Moderate/strong positive correlation – emotions influence DBP
Emotional State	Systolic Blood Pressure (SBP)	+0.623	Moderate positive correlation – emotions ↔ blood pressure
Emotional State	Pulse	+0.528	Moderate positive correlation – emotions ↔ pulse
Diastolic Blood Pressure (DBP)	Systolic Blood Pressure (SBP)	+0.707	Strong positive correlation – expected physiological relationship
Room Temperature	Diastolic Blood Pressure (DBP)	–0.321 (approx.)	Weak negative correlation – heat reduces blood pressure
Room Temperature	Systolic Blood Pressure (SBP)	–0.345 (approx.)	Weak to moderate negative correlation

These findings reinforce the concept that physiological, emotional, and environmental factors are tightly integrated and must be considered holistically in wellness and health research. Fresh air exposure – Walks in nature and ventilating indoor spaces boost oxygen levels.

In Figure 3 we have a 3-D display of all feature vectors for each emotion. There are 120 feature vectors, each containing 11 features and all of them with their corresponding values. It can be noted that for the most part there are visual differences in each model such as the lower first part of each feature vector, especially for the emotional cases in sad, neutral and fear (Iliev, 2016)

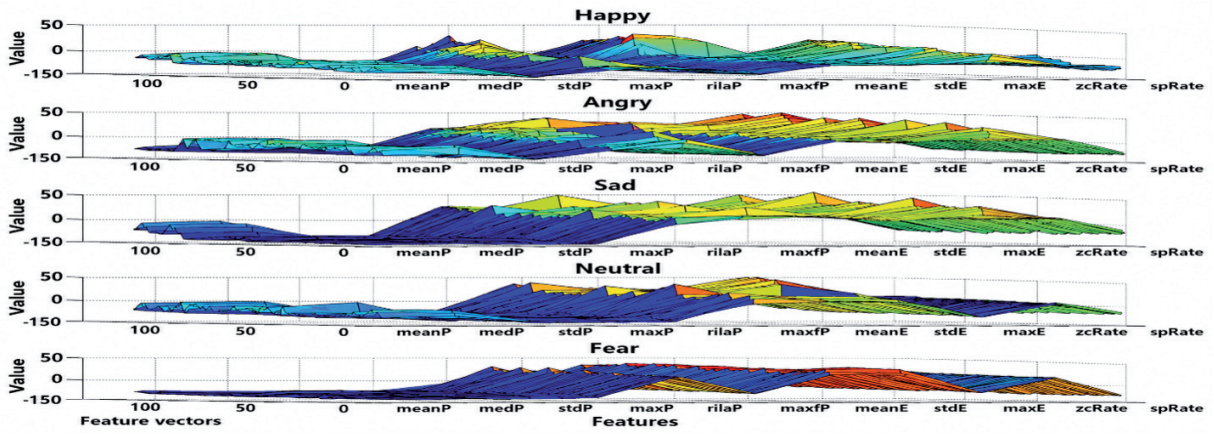

Figure 3. 3-D view of all feature vectors for each emotion

We share our recommendations for – How to Maintain Healthy Oxygen Saturation:

- Regular exercise – Strengthens the lungs and improves oxygenation.
- Deep breathing and yoga – Help increase oxygen capacity.
- Avoid smoking – Tobacco reduces oxygen transport in the blood.
- Stay hydrated – Proper water intake aids oxygen circulation.

We can conclude that emotional states exhibit a direct correlation with health and well-being indices. This area of research has a multidisciplinary impact, intersecting fields such as psychology, neuroscience, wellness lifestyle, and computer science, underscoring its broad significance. Music therapy has demonstrated a powerful potential to positively influence emotional states. Continued exploration in this domain is essential to enhance sustainable mental health strategies and to develop more effective tools for promoting body–mind balance. In his research Iliev (2016) concludes (**see Tab. 5**), that naturally the Neutral class (emotionless state) has the greatest number of occurrences. It consisted of 2,371 spoken emotional events in total excluding long speaking pauses, noises, silence, sighs, clicks, etc. A spoken event is usually a sentence, which may be long or short. It can also consist of a single word with a different length. A simple summary of the average length of each spoken emotional event is displayed in Table 5. This table summarises average utterance lengths and corresponding voice segments across five emotional states and the overall dataset. From Table 5 it follows that the total number of VS used in this emotional speaker database was 8,8. Some of the voiced events however were extremely short to be considered for the task and were eliminated. Because of that Fear fell to 122 voiced segments and in order to have a training-testing model that has equal number of samples from each emotional class, all emotions were limited to 120.

Table 5. Summary of spoken emotional events

Emotion	Average UT Length [sec]	Average # of VS per UT
Happy	9.22	4.53
Angry	4.81	4.02
Sad	11.16	3.84
Neutral	15.29	3.67
Fear	3.91	2.71
All	8.88	3.75

Note: UT = Utterance; VS = Voice Segment.

The difference from 122 is because of testing the rate of change or finding the first derivative. Supporting Mental Health and Well-being: Emotion classification can aid in detecting emotional distress, depression, or anxiety, contributing to mental health diagnostics and interventions.

DISCUSSION

The present study's results elucidate a multi-faceted relationship between music therapy and enhanced well-being, underscored by both objective physiological changes and subjective lifestyle improvements. *Autonomic Nervous System Modulation:* Music with a slow tempo and consonant harmonies is known to shift the autonomic balance away from sympathetic "fight-or-flight" activation toward parasympathetic "rest-and-digest" dominance. This shift typically manifests as reduced heart rate, lower blood pressure, and improved respiratory patterns—all of which contribute to higher peripheral oxygen saturation (SpO_2). Our finding of a 1.7%–point increase in SpO_2 for the experimental group aligns with prior research showing that guided relaxation music can produce measurable improvements in tissue oxygenation and microcirculatory flow. *Breathing Entrainment:* During music therapy sessions, participants often synchronise inhalation and exhalation with musical phrases or guided cues. This paced breathing promotes deeper, more regular respiratory cycles, increasing alveolar ventilation and facilitating more efficient gas exchange in the lungs. Such entrainment likely underlies the observed augmentation in SpO_2.

Subjective Wellness and Lifestyle Behaviour: Sleep Quality: Over 70% of participants in the experimental group reported marked improvements in sleep onset latency and sleep continuity. Music's ability to reduce pre-sleep arousal, both cognitive (rumination) and somatic (muscle tension), likely drives this effect. Improved sleep, in turn, supports daytime energy levels, concentration, and mood regulation. *Physical Activity Motivation:* The Wellness Lifestyle Index (WLI) incorporates self-reported activity frequency and intensity. Post-intervention, subjects in the music group increased their weekly exercise duration by an average of 22%. This enhancement may reflect music's mood-elevating and motivational qualities, which reduce perceived exertion and increase enjoyment during workouts. *Emotional Resilience:* Participants noted greater ease in managing stressors and recovering from negative emotional states. Music therapy's combination of emotional expression (e.g., selecting personally meaningful tracks) and cathartic release contributes to improved coping skills. These psychological benefits reinforce sustainable lifestyle changes, such as healthier diets, social engagement, and adherence to self-care routines. *Duration and Follow-Up:* While the 12-week intervention yielded significant short-term gains, longitudinal follow-up is necessary to determine whether these benefits are maintained and to identify the optimal "dosage" of music therapy. *Individual Differences:* Responses varied by musical preference, baseline stress levels, and respiratory health. Future research should explore personalised protocols—tailoring genre, tempo, and session length to individual profiles.

CONCLUSION

This study demonstrates that music therapy is an effective complementary wellness intervention capable of improving oxygen saturation (SpO_2) and promoting healthier lifestyle behaviours. The findings support the concept that physiological, emotional, and behavioural factors are closely interconnected and should be addressed through an integrated Wellness approach. As a safe, non-invasive, and cost-effective intervention, music therapy has considerable potential for incorporation into preventive health and wellness programmes. Future randomised longitudinal studies involving larger populations are needed to confirm its long-term effectiveness and broader applicability.

These findings reinforce the concept that physiological, emotional, and environmental factors are tightly integrated and must be considered holistically in Wellness, Well-being and health research.

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Музикотерапията като холистична интервенция за подобряване на уелнес начина на живот и кислородната сатурация

Бистра Димитрова

Резюме: Целта на настоящото изследване е да се анализира въздействието на музикалната терапия като допълваща Уелнес интервенция чрез оценка на нейния ефект върху обективни физиологични показатели и субективните възприятия за здраве и благополучие. Специален акцент е поставен върху влиянието на различни звукови честоти върху артериалното налягане, кислородната сатурация (SpO_2), пулсовата честота, интензитета на пулса и самооценката на участниците относно техния уелнес опит (Selfness). Изследването съчетава физиологични измервания с оценка на потребителските възприятия, за да осигури цялостно разбиране за приложението на музикотерапията в рамките на холистичния уелнес модел. Проучването е реализирано в рамките на дейностите на Центъра за върхови постижения „Наследство БГ", който насърчава разработването и прилагането на иновативни, научно обосновани подходи за промоция на здравето и устойчив уелнес. Получените експериментални резултати представят физиологичните реакции към подбрани звукови стимули и оценяват удовлетвореността на участниците от приложената интервенция. Чрез интегриране на обективни биомаркери и субективни показатели за здраве, изследването допринася за нарастващите научни доказателства в подкрепа на музикотерапията като безопасен, неинвазивен и иновативен подход за подобряване на здравето, благополучието и формирането на здравословен начин на живот.

Ключови думи: музикотерапия; уелнес начин на живот; кислородна сатурация (SpO_2); холистичен подход; Уелбийнг

Synergistic Factors in Healthy Youth Development

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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).

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[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.

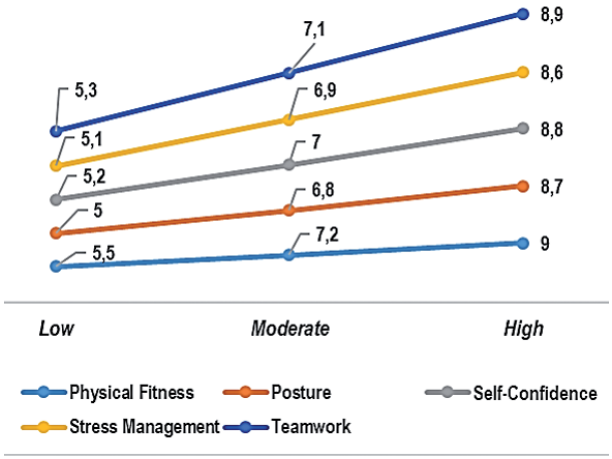

Figure 1. Relationship between training intensity and health indicators in adolescents.

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.

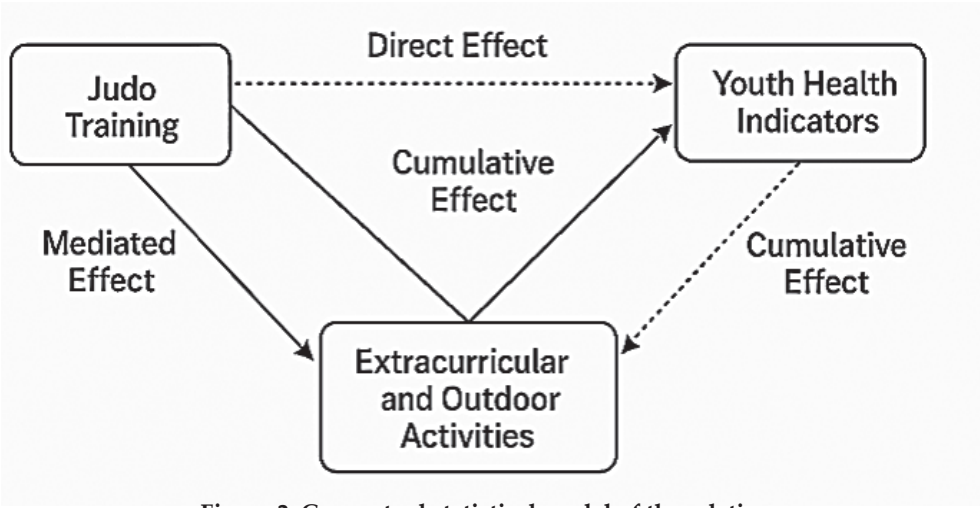

Figure 2. Conceptual statistical model of the relationships between variables

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.

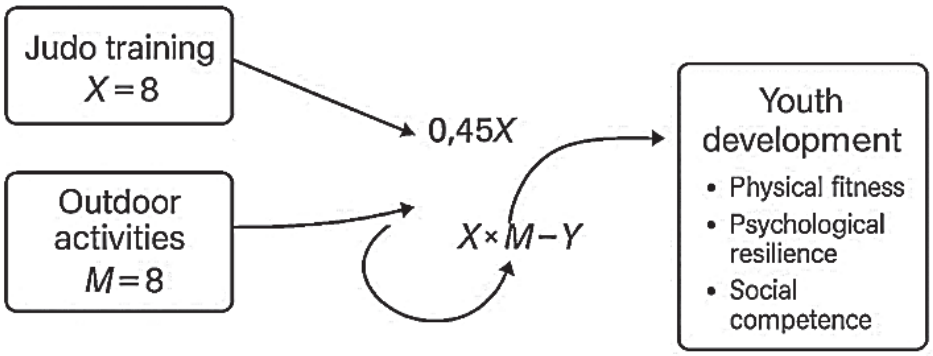

Figure 3. Judo training: conceptual effect pathway

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.

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Синергични фактори в здравословното развитие на подрастващите

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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

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