

Sustainable Nature Therapy in Inclusive Educational Environments: Research Findings and Methodological Recommendations

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ABSTRACT:

The article presents an empirical study on the use of nature therapy in inclusive educational environments in Ukraine. It highlights the prevalent use of plant and color therapy, while zootherapy and sand therapy are less applied. The research underscores discrepancies between the theoretical endorsement and actual practice of nature therapy, with gender-specific tendencies and urban-rural differences. The study concludes that educators need updated scientific and methodological resources to effectively integrate nature therapy. Future research should focus on developing effective strategies for broader application in inclusive settings.

Keywords: Inclusive Educational Environment, Therapy, Children with Special Educational Needs.

1. Introduction

One of the key tasks of reforming the Ukrainian education, bringing it closer to European educational standards, is the potential inclusion of every child in the educational process. Therefore, the issue of creating and fully functioning inclusive educational environments in Ukraine and the use of all possible means to ensure their high-quality activity, among which, we consider it necessary, to single out the means of nature therapy, is becoming urgent. Traditionally, in Ukrainian classical education, such means of nature therapy as: plant therapy and color therapy (walking in nature, collecting herbariums, growing flower pots) were used (Chupakhina, 2020; Kolupaeva & Taranchenko, 2016;

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2019). The means of nature therapy have been successfully used for many years in classical didactics, social work and social pedagogy, psychology, which confirms the possibility of their appropriate and effective application in an inclusive educational environment.

We deliberately do not focus on military actions on the territory of Ukraine, which were preceded by a traumatic period related to the COVID-19 pandemic. We aim that our research will contribute to the restoration and establishment of peaceful and effective activities of inclusive educational environments of Ukraine, aimed at comprehensive development and support of children.

2. Analysis of literature sources and publications

The problem of using nature therapy in an inclusive educational environment makes it necessary to consider it from the perspective of an interdisciplinary approach. Thus, at the moment, a number of developments on inclusive education are presented in the Ukrainian scientific space: topical issues of organizing the activities of a teacher's assistant in an inclusive class: Lutsenko, 2016; Tomich et al., 2022; inclusive education: Poroshenko, 2019; Yarmola & Torop, 2020; Zayerkova & Tretyyak, 2016; children with special educational needs in general education: Havrylkevich et al, 2021; Yarmola et al, 2020; The issue of using nature therapy to correct the health of junior school children was highlighted by: Malyshevska, 2013; Koltok & Chaplia, 2015; social and psychological rehabilitation of children and youth with special educational needs from the standpoint of innovative technologies of nature therapy: Kravchenko et al., 2020; nature therapy as an innovative technology for the rehabilitation of children and youth with special educational needs in the context of inclusive tourism: Kravchenko, 2020.

A certain number of works by foreign scientists is devoted to various types of therapy, including nature therapy: Căpriță & Balint, 2023; Chera-Ferrario et al., 2019; Ein et al, 2018; Harper, 2017; Ionescu et al., 2021; Rusanescu et al, 2018.

Based on the analysis of available resources, we found that the information on the possibilities of using nature therapy in an inclusive educational environment in the Ukrainian space is fragmentary, theoretical in nature and, as a rule, recommended for work with separate groups of children with special educational needs. We did not find any existing comprehensive foreign studies on the use of nature therapy in an inclusive educational environment. That is, the outlined problem remains insufficiently developed, substantiated and highlighted.

3. The purpose and tasks of the study

The purpose of the article is to present the results of an empirical study on establishing the real state of use of nature therapy in an inclusive educational environment in Ukraine and methodological recommendations of the authors regarding the possibilities of using nature therapy in an inclusive educational environment.

In accordance with the stated goal, the following tasks were defined: 1) to present the results of an empirical study on establishing the real state of use of nature therapy in an inclusive educational environment in Ukraine; 2) on the basis of the obtained experimental data, formulate methodological recommendations regarding the possibilities of using

nature therapy in an inclusive educational environment and the prospects for further research on the specified problem.

4. Methods of the study

The following *methods* were used to achieve the set goal and identified tasks for obtaining empirical research data:

1) theoretical methods: analysis, systematization, generalization of Ukrainian and foreign practices on the problem of using nature therapy in an inclusive educational environment; 2) empirical methods: interviewing, grouping, detailing – to implement polygonal research; methods of quantitative and qualitative analysis of experimental data, graphical method of presenting statistical data, comparative method – for processing and interpreting the obtained results.

5. Research procedure

To establish the real state of the use of nature therapy in an inclusive educational environment, a polygonal study was conducted among specialists: teachers, tutors, psychologists, social pedagogues who work in educational institutions – inclusive educational environments. The polygonal survey was conducted in May-June 2024 in Khmelnytsky, Ternopil, Zhytomyr, Kyiv, Poltava, Vinnytsia, Odesa regions of Ukraine.

The collection of experimental material was carried out through direct interviews and with the help of Telegram/Viber social messengers based on pre-prepared questions. Mandatory conditions of the study were: voluntary participation, freedom of expression, preservation of confidentiality and personal data of the participants. The collection of experimental material also involved its preparation for processing and analysis, as well as the formulation of recommendations/conclusions and the outline of prospects for further scientific research.

A feature of the polygonal study was the distribution of participants by gender and geographic-territorial markers. The total number of participants was 383 people. 375 people participated in the pure study (8 people refused to participate in the interview process); among them there were 317 women and 58 men – gender marker; 216 participants worked in cities and 159 – in rural areas of the above regions of Ukraine – a geographical and territorial marker. The significant advantage of women according to the gender marker is explained by the fact that teachers, tutors, psychologists, social pedagogues working in inclusive educational environments in Ukraine are mainly women. Certain differences in the number of participants by geographic-territorial marker indicate an increase in the number of inclusive educational environments in urban areas.

6. Results of the study

Let's present the obtained generalized results of the study of the use of nature therapy in an inclusive educational environment in Table 1.

Table 1. Generalized results of the study of the use of nature therapy in an inclusive educational environment (development of the authors)

№ of questions	gender marker		geographic and territorial marker	
	women	men	work in cities	work in rural areas
1. Do you know what nature therapy means are?	100%	98%	99%	99%
2. Do you consider the means of nature therapy necessary for use in an inclusive educational environment?	95%	91%	94%	92%
3. Do you use nature therapy in your work with children?	88%	21%	54%	55%
4. Do you use nature therapy in your work with parents of children?	17%	9%	19%	7%
5. Do you have enough up-to-date information about the possibilities of using nature therapy in an inclusive educational environment?	41%	33%	37%	36%

A detailed analysis of the obtained results confirmed the following:

The answers of the participants for both markers to the question "1. Do you know what nature therapy means are?" were approximately the same. Such indicators proved that teachers, tutors, social pedagogues who work in inclusive educational environments in Ukraine know about the means of nature therapy.

The answers of the participants to the question "2. Do you consider the means of nature therapy necessary for use in an inclusive educational environment?" had the following distribution: by gender marker: women – 95%, men – 91%; by geographic and territorial marker: 94% work in cities, 92% work in rural areas. Such indicators proved that the vast majority of teachers, tutors, psychologists, social pedagogues consider the means of nature therapy to be necessary in an inclusive educational environment. A slight decrease in indicators, compared to the indicators for question 1, was attributed by the participants to the insufficient material base/insufficient funding of inclusive educational environments and the peculiarities of the organization of the educational process during the period of restrictions (quarantine restrictions and military actions on the territory of Ukraine).

The answers of the participants to the question "3. Do you use nature therapy in your work with children?" had the following distribution: according to the gender marker, the indicators are significantly different: women – 88%, men – 21%; by geographical and territorial marker, the indicators are almost the same: 54% work in cities, 55% work in rural areas.

The difference in the gender marker between the indicators confirms the above considerations, that mostly women work in inclusive educational environments in Ukraine, both in cities and in rural areas. They are more engaged in teaching humanitarian disciplines and socio-economic activities. At that time, men teach precise and applied disciplines, and not everyone sees the possibility of using the means of nature therapy in teaching. Among the male respondents who took part in the study, only 2 men work as social pedagogues and 1 man works as a tutor; all others are teachers. This situation is typical for the whole Ukraine.

Almost the same indicators according to the geographical-territorial marker prove that the geographical-territorial location of the inclusive educational environment is not decisive for the use of nature therapy in their work with the children participating in the study.

Let's note that the vast majority of research participants associate the use of nature therapy with children's education. A small number of participants (mainly primary school teachers, psychologists and social pedagogues) associate the use of nature therapy with raising children and extracurricular activities. The low rates of using nature therapy in the work with parents of children can be explained by the following: 1) gaps in the professional training of specialists regarding the possibilities of nature therapy in working with parents of children; 2) minor financing of educational institutions regarding the purchase of equipment for nature therapy; 3) the difference in indicators according to the geographical-territorial marker can be explained by the difference in the financing of inclusive educational environments in urban and rural areas, since the imperfection of administrative reforms regarding the financial activity of territorial communities and military actions on the territory of Ukraine does not allow, in time, to solve these problems. The answers of the participants to the question "4. Do you use nature therapy in your work with children's parents?" had the following distribution: by gender marker: women – 17%, men – 9%; by geographic and territorial marker: 19% work in cities, 7% work in rural areas. Such indicators are extremely alarming, as they prove that the vast majority of teachers, tutors, psychologists, social pedagogues do not use the means of nature therapy in working with parents of children, or use them fragmentarily. We explain the differences according to the gender marker with the above-mentioned circumstances regarding the gender component of pedagogical teams of inclusive educational environments in Ukraine. At that time, the differences according to the geographical and territorial marker testify to the existence of problems regarding the use of nature therapy in the work with the parents of the children of teachers, tutors, psychologists, and social pedagogues working in rural areas. Such circumstances may indicate certain restrictions on the rights of parents whose children live in rural areas to receive information about nature therapy means.

The answers of the participants to the question "5. Do you have enough up-to-date information about the possibilities of using nature therapy in an inclusive educational environment?" had the following distribution: by gender marker: women – 41%, men – 33%; by geographic and territorial marker: 37% work in cities, 36% work in rural areas. Such indicators are almost similar, have a non-critical difference, which testifies to the insufficiency of modern information about the possibilities of using nature therapy in an inclusive educational environment. The vast majority of participants noted that they get such information from domestic Internet resources. Let's note that the scientific and practical justification, methodical reliability, reliability and academic/author integrity of such information are sometimes questionable.

In the process of interviewing, we asked the research participants to indicate which means of nature therapy are most often used in an inclusive educational environment. The received answers made it possible to rank them as follows (diagram 1): plant therapy – 63%; color therapy – 34%; zootherapy – 19%; sand therapy – 17%.

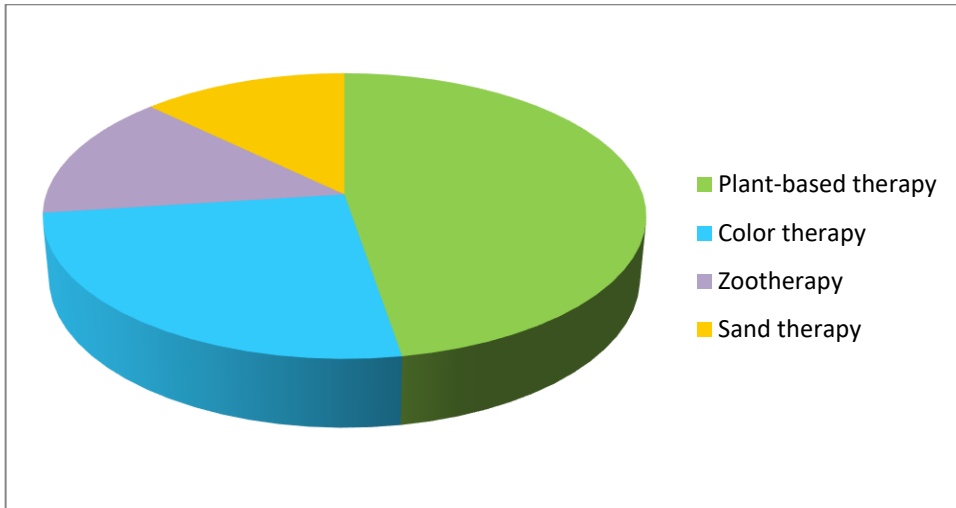


Diagram 1. Ranking of nature therapy means used in an inclusive educational environment (authors' development)

In general, the processing and analysis of the obtained results of the research on the use of nature therapy in an inclusive educational environment made it possible to establish a number of existing contradictions, namely:

- there are differences between what the employees of inclusive educational environments in Ukraine declare about the means of nature therapy and how they are actually used in practice. That is, the vast majority of employees of inclusive educational environments in Ukraine partially use the means of nature therapy in educational activities, neglecting educational and developmental activities; practically do not use the means of nature therapy in working with parents, including parents of children with special educational needs, especially in the context of parental education;
- in inclusive educational environments in Ukraine, women mainly work, which determines the gender characteristics of the use of nature therapy in practical activities;
- the need for scientific and methodical provision of teachers, tutors, psychologists, social pedagogues working in inclusive educational environments in Ukraine with modern information on the possibilities of using nature therapy in an inclusive educational environment.

The study found no differences in the availability and provision of scientific and methodical resources for all teachers, especially for those working in rural areas. Ukraine has Internet coverage throughout the territory, which provides access to resources regardless of the territory of residence.

7. Discussion

According to the results of the conducted research, we consider it necessary to present the author's view on the possibilities of using nature therapy in an inclusive educational environment. Let's note that the format of the article does not allow detailing the methodical content of all possible means of nature therapy. So, let's present, abstractly,

those means of nature therapy, which, in our opinion, can be successfully applied in an inclusive educational environment.

Plant therapy. The use of plant therapy in an inclusive educational environment helps to involve children, including children with special needs, in growing pots or plant compositions in the school and classroom. Indoor plants influence the formation of a psychological microclimate, which has a positive effect on children's ability to work. Since indoor plants are a part of nature and a permanent object of nature in the room, as well as the didactic material on the basis of which mental, aesthetic and labor education of children is carried out. "Experiments on the windowsill" on the cultivation of microgreens and aromatic herbs can be interesting. Walks or excursions to recreational areas: parks, botanical gardens, arboretums, forests, where children can collect natural material: leaves, twigs and stems, flowers, plant seeds, acorns, cones, can be successfully used for further learning and creativity in an inclusive educational environment and at home both during classical education and in the period of distance/blended education.

During distance/mixed learning, teachers, tutors, social pedagogues, psychologists can conduct online for children and their parents: experiments, consultations on growing indoor plants/pots; photo-video exhibitions of grown plants, etc. Children, with the help of their parents, can record observation videos of their own indoor plants and present them to their classmates. Such forms of cooperation allow children with SEN to be included in the real educational process together with other students of the class. Parents of such children get the opportunity to be included in the inclusive process and contribute to their development in every possible way (Mandala & Pradhan, 2024).

Peculiarities of the use of plant therapy in an inclusive educational environment are that it can be implemented constantly: changes in the plant world come with the change of seasons. This gives an opportunity to explore and use different states of plants, which will enrich the picture of world perception of children with SEN (Cucio & Roldan, 2020). The united actions of educators and students make it possible not only to observe the development of plants, but also but also to cultivate children's interest in natural processes, observation, careful attitude and care for the plant world, to establish communication in the classroom, and contribute to their socialization in the educational environment (Koltok & Chaplia, 2015).

Color therapy is considered a type of nature therapy, but it is often used in inclusive education, social work and psychology to diagnose and correct the emotional and psychological state of children through the use of natural color schemes. Its main advantage is that it can easily interest all children, including children with special educational needs, in a playful way. We suggest considering color therapy in combination with plant therapy in an inclusive educational environment.

An example of such a combination is the cultivation of indoor plants and flower pots, flower mini-beds on the windowsill or balcony with different colors; creation of plant and flower appliqués, collages, plant and still-life compositions from improvised plants/their parts of various colors and shapes, especially without harming nature. This allows children not only to relax, get rid of anxiety, relieve stress, etc., but also to show creative abilities, the possibility of artistic and emotional self-expression, develop their imagination, aesthetic and artistic tastes, and a careful attitude to nature.

Teachers, tutors, psychologists, social pedagogues can initiate thematic exhibitions/competitions of children's creative works both individually and in groups. Parents of children, including children with special needs, can join and help in collecting/harvesting natural materials, for example, during walks, trips or vacations. It is important that during the period of distance learning/restrictions, they can use color therapy to spend time together with children, grow indoor/flower plants at home, organize family competitions, exhibitions of applications, works from ecological plasticine using plant/natural dyes or fragments of colored natural materials, etc.

A logical addition to plant therapy and color therapy is: *phytotherapy* – the use of phytoncide properties of plants in the fresh and dried state, in the form of aqueous extracts – teas, compotes, syrups, etc., as well as – *aromatherapy* – the use of essential oils of plants and other natural components – minerals, beekeeping products, etc. Plants/natural minerals have a phytocomplex that effectively affects the emotional and physical state, stabilizes well-being, and can be an auxiliary means of increasing the physical/intellectual activity of children (Poroshenko, 2019).

In the process of educational, developmental activities, phytotherapy can be used as walks/excursions to living nature, where children, including children with special needs, get to know the plant world (herbal therapy) and can feel the smells of the spring/autumn forest, park, individual plants/ trees. Within the classroom, these are indoor plants, flower pots, "green windowsills", natural materials. Let's note that today's industry has many products that can also be successfully used as phytotherapy/aromatherapy: herbal teas, phytoaromatic extracts, herbal complexes, spices, hydrosols, oils, natural components, etc. It is appropriate to implement phytotherapy/aromatherapy with the involvement of parents. If possible, during weekends/vacations, they and their children can collect and dry leaves of raspberries, currants, rowan berries, viburnum, stems of healing plants of thyme, mint, etc. Children also have the opportunity, if they wish, to bring home preparations: dried plants, honey, berries and share it with their friends for a joint tasting. Then, in the course of lessons and educational activities, you can brew herbal teas, taste them, compare the taste, aroma, etc.

During remote learning/restrictions, parents can help children relieve tension/stress from staying at home by preparing herbal teas and other drinks and meals; with the help of aroma lamps, choosing those smells that the child likes/soothes. You can also grow aromatic herbs and spices that you like on the windowsill/balcony together with the children, watch their growth, take photos and videos/collages, and then the children can share their impressions both in the family and with peers. Such forms of joint interaction are important for the implementation of inclusive education, as they provide an opportunity to form the glututonic and olfactory field of children; understanding the healing properties of nature; friendly relations and aesthetic and taste preferences of children both in the family and in the circle of their peers.

Animal therapy (zootherapy) as a type of nature therapy allows you to use animals and their images to restore the child's health/emotional state through communication with animals (pets, tactile zoos, etc.), in the process of which emotional tension and stress are reduced, and emotional/social intelligence is better formed. The most common types of animal therapy for working with children are: hippotherapy, canister therapy, dolphin therapy,

feline therapy. However, such types of therapy can be carried out in specialized institutions and under the supervision of specialists.

Within an inclusive educational environment/classroom, it is not always possible to organize an "animal corner" under objective circumstances: sanitary standards, food, cleaning. It is more affordable and budget-friendly to set up small aquariums with fish in the classrooms, on the initiative of educators or parents, the care of which does not require significant funds. This enables all children to observe and care for fish, and teachers, tutors, psychologists, and social workers to use animal therapy to stabilize their emotional state; development of observation, imagination; enrichment of children's knowledge and ideas about the animal world. In animal therapy, in addition to living animals, animal symbols are used: images, fairy-tale characters, drawings, toys.

As for distance learning, especially during the period of restrictions, families who have pets or live in private households are in a more advantageous position. It has been confirmed that children, including children with SEN, who have pets at home: birds, fish, turtles, hamsters, cats, dogs adapt more easily to remote learning/restrictions. They are less limited in contact communication. Caring for animals alleviates the stress from restrictions on communicating with friends, stabilizes the emotional field of children. In such a period, teachers, tutors, psychologists, and social educators should recommend parents to make the most of the opportunities of animal therapy, its therapeutic and creative potential to help children pass the adaptation period. Children can play with pets both independently and with the help of adults; look after and watch over them. A good example of joint activities are those when parents and children can draw or make embroidery, applications, collages (appropriately with elements of plant therapy or color therapy) of their favorite animals; learn or write poems, songs, music about animals; create puppet shows with images of animals, imitating their sounds and pantomime. Parents can also record such activities in photos or videos and share them in a shared online group. Teachers, tutors, psychologists, social pedagogues can also initiate online: contests, quizzes, photo exhibition crosswords, etc. on the topic of pets and should help parents with methodical advice on the implementation of animal therapy.

In the context of the investigated problem, attention is drawn to the possibilities of *hydrotherapy*, namely, various methods of external application of water (in its various states) with therapeutic and preventive purposes. Swimming, as an element of hydrotherapy, has long been a part of both the educational process and work with children with SEN. At that time, only a small part of educational institutions in Ukraine has swimming pools, and a much smaller percentage of them – inclusive educational environments.

The most common example of implementing hydrotherapy in an inclusive educational environment is: snow sculpting (snowballs, snow figures, together with parents – a snow fortress). The experience of such application of nature therapy allows children to trace changes in the state of water in nature and natural changes in general; feelings and emotions from water; and a joint event with parents – building a snow fortress contributes to family communication and the formation of family and team ties (Chera-Ferrario *et al.*, 2019). If you have a private landscaped area, you can successfully implement walking on the dew, proposed by the classic of Ukrainian pedagogy V. Sukhomlynskyi.

In the period of distance/restrictions, it is practically difficult to implement hydrotherapy. We can recommend parents and children to observe the aggregate states of water such as:

rain, dew, snow, icicles, etc. Home experiments with water are interesting: heating, freezing, dyeing with food dyes and spices (combination with color therapy). For example: you can freeze juices, herbal teas (combination with phytotherapy), fruits, dairy products, etc., and then make cold and warm cocktails or desserts. You can also do a combined hand massage using ice cubes and warm baths with the addition of phytocomponents/aroma oils (a combination of phyto and aromatherapy). Such exercises will contribute both to the improvement of blood circulation and the development of fine motor skills and the general emotional state of the child. Children will be able to share their impressions with classmates, friends, educators, and relatives. This makes it possible to enrich children's ideas about natural phenomena; to interest them in new knowledge and sensations – tactile, glutotonic, olfactory features of water; create an atmosphere that will positively affect the emotional state of children and promote joint communication. We note that the presence of an aquarium can also be considered as a clearing for hydrotherapy (Rusanescu et al., 2018).

Sandplay therapy (psamtherapy or sand therapy), that is, the technique of working with sand and miniature figurines or objects, has gained relevance in recent decades. In the process of sandplay therapy, the interaction of sand, hands and water is assumed. Sand and water are natural materials endowed with unique properties and capable of evoking images of a certain nature, that is, they can be used in different states. This allows you to use both large school sandboxes and classroom/home mini sandboxes or sand boards with miniature figures for working with children (sand modeling, sand drawing). In general, sandplay therapy through sand painting and sand sculpting allows for the harmonious development of cognitive functions such as: perception, attention, memory, perception of the surrounding world and spatial orientation, as well as fine motor skills and creative individual abilities of children. At that time, it is a simple way to teach a child to express emotions, experiences, feelings, fantasies both individually and in a group. It is extremely important to use sand from ecologically clean and safe areas.

Based on the teachers', tutors', psychologists', social pedagogues' recommendations, parents of children, including children with SEN, can successfully implement sandplay therapy at home, especially during distance learning/restrictions. Homemade mini-sandboxes/sandboards with miniature figurines are easy and budget-friendly to organize. Pictures and compositions created in the sand are a reflection of the unconscious and give answers to parents/educators about the child's inner emotional state, fears, and conflicts. In addition to sand, other objects (buttons, feathers, shells, small molds for homemade cookies, etc.) and children's mini toys (animal figurines, cars, dolls, houses, constructors, etc.) can be used.

We recommend coloring the sand with vegetable/natural dyes for fun – turmeric, paprika, carrot juice, beetroot, spinach are available and make playing with sand diverse (combination with herbal and color therapy). If during the period of distance learning/restrictions it is not possible to organize the presence of a home sand board, then the sand can be quite successfully replaced with small or crushed grains: semolina, corn, buckwheat, millet, etc. The only drawback is that it is difficult to sculpt cereals, it is better to use them dry (Tomich et al., 2022).

Crystal healing has a healing effect of stones/minerals on a person and can be successfully applied in working with children, including with SEN. To familiarize children with crystal

healing, we recommend using collections of stones that may be available in an inclusive educational environment. Children can be offered to bring small pebbles that can be found near their place of residence or during a walk with their parents to the forest or river. The collections make it possible to acquaint the children with the natural resources of their native region and other regions. Children can be offered to look, touch, hold in their hands and at the same time describe their impressions, emotions, feelings, which in turn contribute to the development of imagination and speech. In the cold period, you can pour warm water on the stones and offer the children to hold them and warm themselves, and then, using the therapeutic effect of warm stones, to describe their feelings and compare them with dry/cold stones. Parents can do the same with their children at home.

Nature audiototherapy – the use of sounds of nature: natural elements/phenomena and recreation areas (noise of the sea, wind, pouring sand, light rain, sounds of summer forest, fire burning on the shore of a reservoir, etc.), animal sounds (purring cats, sounds of cicadas, etc.) for therapeutic purposes. *Ornithotherapy* (voices of birds) is used as a separate direction. Distance/mixed learning and restrictions do not allow free access to recreation areas. Children, including those with SEN, experience increased emotional stress and exhaustion during such a period.

Teachers, tutors, psychologists, social pedagogues can conduct online listening to the sounds of nature for children; audio exercises imitating the sounds of nature and the voices of animals/birds. Using gadgets, they can record them; organize online exercise minutes with reproduction/imitation of images and sounds of animals/birds (Balynska & Barabash, 2022).

Modern industry offers sound simulators for sleep; many Internet resources offer online sound libraries with ready-made tracks. We recommend parents of children to use nature audio therapy and ornithotherapy to introduce children to the world around them, form their auditory preferences, relax children, relieve stress, panic attacks, better sleep, quality rest, and, if necessary, better concentration. Also, these types of nature therapy can be successfully used for joint spending time and family recreation: family theatrical performances, reading/listening to fairy tales and works of art with role-playing sound imitation, etc.

8. Conclusions

In general, from a methodological point of view, the use of nature therapy in an inclusive educational environment contributes to: the formation of the socio-emotional sphere of children; activation of socio-emotional experience through the expansion of their ideas about the surrounding world and reality; children's understanding of their inner experiences and the states of other people; development of visual perception and attention, correction and development of the psychomotor sphere and visual-motor coordination; formation of the ability to reproduce visual images in color and shape; development of spatial ideas/orientations, thinking operations.

Among the advantages of nature therapy, we highlight: accessibility; budgetary efficiency; the possibility of collective and individual participation; joint participation of children and adults. The existing disadvantages of nature therapy are: the presence of allergies; the need to consider safety factors.

To optimize the safe and effective implementation of nature therapy in an inclusive educational environment, teachers, tutors, psychologists, social pedagogues should interact with children's parents to obtain complete and reliable information about children's health (especially about the presence of allergies). It is also necessary to take into account safety factors such as: taking material for natural therapy from ecologically clean areas; observance of sanitary and hygienic conditions, etc.

9. Research prospects

The scientific novelty lies in the fact that the obtained results can be of interest and practical value for scientists, practitioners, parents of children, experts and professionals in other fields both in Ukraine and abroad. We see the prospects for further research in the search and justification of an effective universal toolkit for the effective operation of inclusive educational environments in Ukraine.

Solving this issue can help teachers, tutors, psychologists, social pedagogues in choosing the most effective forms, methods and means of nature therapy and adapting them to the specific needs of children with special educational needs throughout Ukraine.

We also see prospects for further research in the development of strategies for the application of current innovative developments in nature therapy and their implementation in the practice of activities of inclusive educational environments in Ukraine.

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