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NEURO PLAY

Title	Continuous intergenerational play for neuroplasticity
Acronym	NeuroPlay
GA	101134703
Duration	1.11.2023-31.10.2025 - 24 months
Partners	• P1 Slovenian Association of Kinesiology- KiSi; Slovenia • P2 Sdruzhenie Balgarsko Ski Uchilishte – Bolgarian Ski School; BSS; Bolgaria • P3 Športno društvo Snowpack; Snowpack; Slovenia • P4 The International Association of Snowsports in Schools and Universities – IAESS [former IVSS]; Austria)

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D2.2 Report on best practices and NeuroPlay activities

Title (acronym): Continuous intergenerational play for neuroplasticity (NeuroPlay) GA: 101134703
Call: ERASMUS-SPORT-2023-SSCP
Period: 1.11.2023-31.10.2025 (2 years)

Main objectives of the project:

NeuroPlay is a project that aims to enhance neurological development of children while promoting the cognitive and physical health of grandparents through innovative motor-cognitive training. The project recognizes the critical role grandparents play in the lives of children and the potential for both generations to benefit from intergenerational activities. With 1.5 billion grandparents worldwide, the project aims to develop mutually beneficial exercises and activities that create a safe space for the two generations to interact at all times of the year. The project brings together experts in the fields of kinesiology, neuroscience, physical therapy, skiing, IT and certification to develop a neuroscience-based program focused on intergenerational training with lateral motor transfer methodology. The program will be developed based on existing best practices and workshops will be organized to provide knowledge and methodology. In addition, two summer and two winter camps will be held, and a NeuroPlay digital platform will be developed to track participants' progress and motivate them to engage in targeted collaborative activities. The project aims to build a solid foundation for healthy aging of grandparents and better neurological development of children, thus contributing to several Erasmus+ priorities.

1. Best Practices collected from the scientific databases:

In this report, we present the results of a comprehensive review of best practice in intergenerational activities, based on careful searches of scientific databases such as PubMed. Our review included a systematic screening of the literature and focused on intergenerational activities that have already been implemented and thoroughly tested. It's important to emphasize that our recommendations are based solely on evidence from peer-reviewed scientific papers to provide a foundation based on scientific rigor and empirical evidence.

While we currently focus exclusively on the scientific literature, it's important to remember that the landscape of intergenerational activities is rapidly evolving. In forthcoming reports, we aim to broaden our scope and incorporate findings from a range of specialist reports. However, it's important to recognize that this field is still relatively young and that the availability of comprehensive material is limited. Nevertheless, this scarcity provides the NeuroPlay partnership with an exciting opportunity to develop new approaches. Through our joint efforts, we aim not only to innovate, but also to rigorously test these new methods, as outlined in our NeuroPlay project proposal.

This report serves as a first step in harnessing the potential of NeuroPlay in shaping the future of intergenerational activities, utilizing evidence-based practices, and opening up new avenues for exploration and discovery.

The identified best practices stem from two research studies: "An Intergenerational Program Based on Psycho-motor Activity Promotes Well-being and Interaction Between Preschool Children and Older Adults: Results of a Process and Outcome Evaluation Study in Austria" and "Beneficial Effects of an Intergenerational Exercise Intervention on Health-related Physical and Psychosocial Outcomes in Swiss Preschool Children and Residential Seniors: A Clinical Trial.", which are listed below.

The recommended practices include:

- Incorporating intergenerational activities: focus on activities that integrate different age groups, incorporating a motor component while encouraging creative input from participants.
- Implementing structured procedures: use structured welcome and closing procedures to provide a clear framework for activities.
- Utilizing diverse and appealing materials: provide diverse and appealing materials to engage participants and foster collaboration within groups.
- Promoting constant motion and interaction: encourage continuous movement and interaction among participants throughout the activities.
- Targeting dynamic balance and object control skills: emphasize dynamic balance exercises (e.g., walking forwards, backwards, sideways) and object control skills (e.g., throwing, aiming, catching) tailored to the needs of both seniors and children.
- Incorporating everyday movement patterns: Integrate everyday movement patterns relevant to seniors (e.g., sitting down, standing up, bending) and more dynamic movements suitable for children (e.g., jumping, hopping).
- Prioritizing social interactions: focus on fostering social interactions between participants, including peer-to-peer interactions and interactions across different age groups.
- Engaging in playful exercises: conduct exercises in a playful manner, often in pairs or groups, to enhance enjoyment and participation.
- Emphasizing functional movement patterns: design activities based on functional movement patterns rather than endurance or cardiovascular training.

These best practices, derived from successful interventions, provide valuable insights for the development and implementation of future NeuroPlay activities aimed at promoting well-being and interaction across generations. Below, we present some specific examples of exercises using different materials from one of the studies:

- Newspapers: Tearing and folding it, placing it on the ground to form balls for a "snowball" competition.
- Newspapers and tape: Building a large sheet of newspapers to use as a tunnel or for wrapping people.
- Cups and plates (plastic): Piling them, sliding and pushing them across the floor, building tall towers.
- Cups, plates (plastic), and ping pong balls: Exploring additional activities with cups, plates, and ping pong balls.
- Different kinds and sizes of balls: Playing with balls to feel differences in weight, surface, and size.
- Different kinds and sizes of balls and different Targets: Throwing balls at various targets such as tunnels, hanging umbrellas, or boxes.
- Ropes: Skipping, knotting, swinging, and throwing ropes.

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- Ropes and furniture (chairs and tables): Building structures to climb over and crawl under using ropes and furniture.
- Sponges: Sorting by color and form, building paths, and using as building blocks.
- Different kinds of paper and targets: Making paper airplanes and playing with them.
- Balloons: Balancing them on different body parts and trying to keep them in the air.
- Balloons and fly swatters: Passing balloons and targeting different objectives with fly swatters.

References:

- Minghetti, A., Donath, L., Zahner, L., Hanssen, H., & Faude, O. (2021). Beneficial effects of an intergenerational exercise intervention on health-related physical and psychosocial outcomes in Swiss preschool children and residential seniors: A clinical trial. *PeerJ*, *9*, e11292. https://doi.org/10.7717/peerj.11292
- Mosor, E., Waldherr, K., Kjeken, I., Omara, M., Ritschl, V., Pinter-Theiss, V., Smolen, J., Hübel, U., & Stamm, T. (2019). An intergenerational program based on psycho-motor activity promotes well-being and interaction between preschool children and older adults: Results of a process and outcome evaluation study in Austria. *BMC Public Health*, *19*(1), 254. https://doi.org/10.1186/s12889-019-6572-0

2. Strategy to implement best practices into practice

The collected results of the best practices, carefully cataloged in this report, serve as a cornerstone for the future implementation of NeuroPlay activities in the partner countries, with a special focus on Slovenia and Bulgaria. After expertly conducting instructional workshops among the consortium partners, both on-site and online, a unanimous consensus was reached within the partnership. It was agreed that the identified best practices should not only be integrated into the respective countries, but also tailored to national specificities.

Given the different cultures and societal needs, the adaptation of these practices is considered essential to ensure their effectiveness and resonance in different cultural contexts. Careful attention will therefore be paid to aligning these methods with the unique cultural dynamics and requirements in Slovenia and Bulgaria. This nuanced approach underscores the partnership's commitment to optimizing the impact of intergenerational activities while respecting the specificities of each community.

In addition to adopting best practices, the partners have jointly decided to maintain solid links with various organizations in their respective regions and countries. In particular, efforts will be made to seamlessly integrate these activities into different social environments, including centers that cater to the daily needs of the elderly, where children are often present but intergenerational engagement remains passive and is usually limited to television or smartphone games.

A fundamental change is planned in which such facilities will be transformed into vibrant centers of intergenerational interaction. Instead of passive observation, activities will be carefully selected to allow active participation of both age groups. In a phased approach, joint sessions will be organized that include a repertoire of cognitive-motor activities carefully designed to bridge the differences between generations.

In addition, meticulous preparations are underway for the upcoming summer and winter camps, which are considered flagship events within the project. These camps will serve as focal points for the implementation and validation of the developed methodologies, providing immersive experiences that transcend conventional age boundaries and promote holistic development.

To ensure comprehensive documentation and wide dissemination of these efforts, the project partners are committed to meticulously documenting each stage of the process. Through the use of digital platforms, including dedicated project websites and social media channels, findings, achievements and learning experiences are shared with a global audience, amplifying the impact of the project and fostering a culture of knowledge sharing.

3. Conclusions

Finally, based on scientific studies, the report identifies best practices for intergenerational activities to promote well-being and interaction between generations. Tailored to the cultural dynamics of Slovenia and Bulgaria, the implementation strategy emphasizes active participation and holistic development and aims to transform passive intergenerational engagement into lively interactions. The NeuroPlay partnership aims to create a lasting impact through careful documentation and dissemination, including immersive summer and winter camps, and to foster a culture of knowledge sharing in the field of intergenerational cooperation. This holistic approach underscores the project's commitment to optimizing societal well-being by bridging generational divides and fostering meaningful connections within communities.

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