Trakia Journal of Sciences, No 2, pp 160-168, 2026

Available online at:
https://trakia-uni.bg

ISSN 1313-3551 (online) doi:10.15547/tjs.2026.02.010

Original Contribution

INNOVATIVE SPORTS-ANIMATION PRODUCT FOR A SPECIFIC CATEGORY OF TOURISTS – PREGNANT WOMEN

I. Petkova-Nesheva*

Faculty of Public Health, Health Care and Tourism, National Sports Academy "Vassil Levski", Sofia, Bulgaria

ABSTRACT

Introduction: The aim of this study is to assess certain physical abilities through specific tests during pregnancy via holistic motor activities based on the Nesheva's Program and to propose an innovative sports-animation product for a specific category of tourists – pregnant women. Methods: The study included ten women with normal pregnancies (2nd and 3rd trimester; informed consent; age 28.7±4.0 years; pre-pregnancy weight (PPW) 61.6±9.47 kg; study-period weight (SPW) 68.5±9.35 kg; height 165.5±8.49 cm; BMI 25.0±3.05; torso length 57.7±2.75 cm). Two groups of tests were conducted. Results: Statistical data are presented in Table 1. PPW and SPW differ significantly ($p<0.01$). The following significant correlations were identified: age with BMI; weight with torso length; (TRCSP) with (TLCSP); (AKS) with (URLL). Discussion: Age, weight, and body mass index fall within normal ranges for this population. When comparing these results with our previously published data from another group of pregnant women engaged in gymnastics, more pronounced differences were observed in the balance stability tests. Conclusion: The physical changes during pregnancy lead to significant alterations in balance, posture, and movement.

Keywords: wellness culture, motor program, pregnant women, tourism, sports animation.

INTRODUCTION

The recreation industry and niche tourism are two interrelated fields that play a key role in the modern tourism sector. Tourist animation is a specific type of tourism-related activity, while sports tourist animation represents a service that engages tourists in active physical activity tailored to individual preferences and personal motivation. Based on direct interaction between the animator and the tourist, it marks a higher level of tourism practice, shaped by the demands of a dynamic lifestyle and contemporary social realities (1). Sports animation continues to evolve in terms of content, and in this context, we propose a program targeted at a specific category of tourists – pregnant women. This initiative aims to enhance the practical value of sports animation, enrich its applicability, and contribute to the overall quality and diversity of tourism products. Sports tourist animation, combined with comfortable amenities, creates opportunities for extending the tourist season and for more effective use of hotel or cruise ship sports facilities. A well-developed program — including options for specific target groups such as pregnant women — helps fill and give meaning to the increased amount of leisure time, delivering both benefits and satisfaction to the client by promoting comprehensive recreation and physical activity (2). Issues related to education, the importance of staff training, the implementation of innovations, and the development of the leisure and entertainment industry are also examined (3).

Innovative sports-animation motor practices offer significant opportunities for diverse training of various muscle groups in all type of needs (4, 5). The aim of this study is to assess certain physical capacities during pregnancy

***Correspondence to:** *Assoc. Prof. Irina Petkova Nesheva, Ph.D. Faculty of Public Health, Health Care and Tourism, Email: dimitrova.bistra@yahoo.com, National Sports Academy "Vassil Levski", 21, Acad. Stefan Mladenov Street, 1700 Sofia, Bulgaria*

through specific tests, conducted via holistic motor activities based on the patent Nesheva's Wellness Program, and to propose an innovative sports-animation product tailored to a specific tourist category — pregnant women.

Pregnancy is considered the most critical period for the formation of future life and represents a vital stage in a woman's life, during which care for both physical and mental health is essential (6). A relationship has been identified between psychological qualities and motor abilities (7). Engagement in recreational activities, adherence to a healthy lifestyle, and proper rest are crucial for the well-being of the pregnant woman and the optimal development of the foetus (8). Recreational motor practices are aimed at recovery, relaxation, and maintaining emotional balance, contributing to a fulfilling lifestyle, enhanced emotional intelligence, and success in professional settings and leadership. A healthy lifestyle (wellness) for pregnant women encompasses a wide range of practices and approaches that support both physical and mental well-being during pregnancy (9, 10).

There are studies related to improving healthcare for women with normal pregnancies who engage in recreational wellness activities (11). Recreational wellness programs, particularly those tailored for the category of pregnant women, can serve as effective preventive strategies with significant social impact. According to the authors (12), niche tourism offers remarkable opportunities for innovation by combining healthy nutrition with parallel SPA programs aimed at preventing psycho-physical and emotional health issues. Activities such as aqua spinning have also been identified as effective stress prevention methods in certified SPA, balneotherapy, and tourism centres (13). Wellness values and SPA menus for relaxation can be fully aligned with the needs of pregnant women with normal pregnancies, in accordance with well-being indices (14). This specific group of pregnant tourists also includes overweight women, as highlighted by the author (15), who demonstrates the positive effects of a comprehensive SPA program on the physical condition and overall well-being of women outside the normative range.

The importance of balanced nutrition and physical activity is emphasized as fundamental elements for overall health and psycho-physical development, including for pregnant women (16). A group of authors (17) underscore the relationship between insufficient levels of physical activity and the quality of life among pregnant women. Their findings highlight the need to improve prenatal care and promote specialized programs tailored for pregnant women.

Other researchers (18) argue that "birth tourism" is a rarely discussed issue among scholars, as the ways in which pregnant women are encouraged to leave their home country to give birth abroad have not been studied. The study of the cited authors examines the arguments of thirty-four agencies in support of birth tourism for Chinese expectant mothers. By using a thematic approach, they identify reasons that make birth tourism appealing, including a comprehensive health and sports tourism package. Innovative sports and animation motor practices offer significant opportunities for diverse work on various muscle groups in women with normal pregnancies.

METHODS

The aim of the study is to assess certain physical abilities through specific tests during pregnancy, using holistic motor activities as part of the Nesheva's Program, and to offer an innovative sports-animation product for a specific category of tourists – pregnant women.

Ten women with normal pregnancies (second and third trimesters; informed consent; average age 28.7±4.0 years; pre-pregnancy weight (PPW) 61.6±9.47 kg; weight during the study (SPW) 68.5±9.35 kg; height 165.5±8.49 cm; BMI 25.0±3.05; torso length 57.7±2.75 cm) were studied. The participants were subjected to two groups of tests in field conditions **(Figure 1),** consisting of:

- **Flexibility tests [in cm]:**
- Hamstring muscles (PTM),
- Rightward lean while seated on a chair (TRCSP),
- Leftward lean while seated on a chair (TLCSP).
- **Balance stability tests [in s]:**
- Support on one hand and one knee (AKS),
- Standing with the right leg raised (URRL),
- Standing with the left leg raised (URLL).

Figure 1. Assessment of sport-pedagogical flexibility indicators (AKS, URRL, URLL)

RESULTS

The statistical data are presented in **Table 1**. A significant difference was observed between pre-pregnancy weight (PPW) and study-period weight (SPW) ($p < 0.01$). The following significant correlations were identified: age with body mass index (BMI); weight with torso length; TRCSP with TLCSP; AKS with URLL.

Table 1. *Descriptive statistics of test variables (Mean±SD)*

Variables (Indicators) **Units of measurement**	PTM [cm]	TRCSP [cm]	TLCSP [cm]	AKS [s]	URRL [s]	URLL [s]
Mean	10,4	49,3	49,4	53,5	60,1	68,6
SD	4,90	3,53	3,87	35,48	27,51	24,86

A. Flexibility Tests [in centimeters]

An assessment of hip joint flexibility and hamstring muscle elasticity was carried out under field conditions involving 10 pregnant participants. The evaluation was performed on a platform measuring 53 cm in height, with a standardized stance width of 60 cm, during which maximal forward flexion was executed. The findings are illustrated in **Figure 2**.

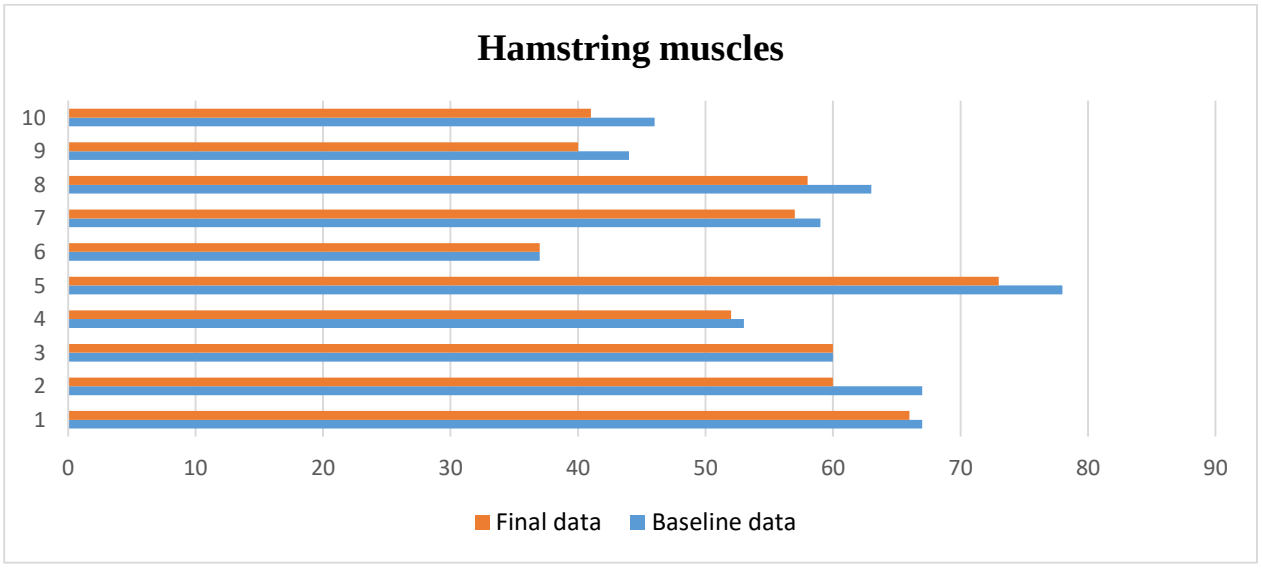
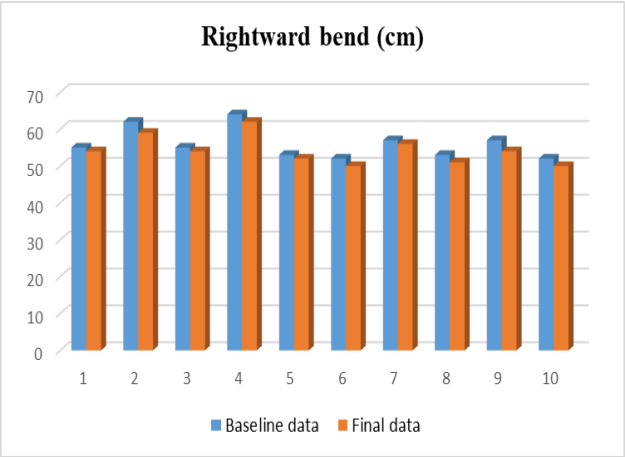


Figure 2. Assessment of hip joint flexibility and hamstring muscle elasticity based on maximal forward bend distance (measured in centimeters).

The average flexibility level increases, indicating that the applied exercise program is generally effective. Improvement is observed in 8 out of 10 participants. The final data provide

information on the distance measured in centimeters from the floor to the top of the middle fingers during a split stance forward bend. Higher values (represented in blue) correspond to the initial assessment. The most significant improvement is observed in participant No. 5, where the difference is 30 cm, which is highly meaningful. The study demonstrates that most of the women either maintained or improved the flexibility of the hamstring muscles.



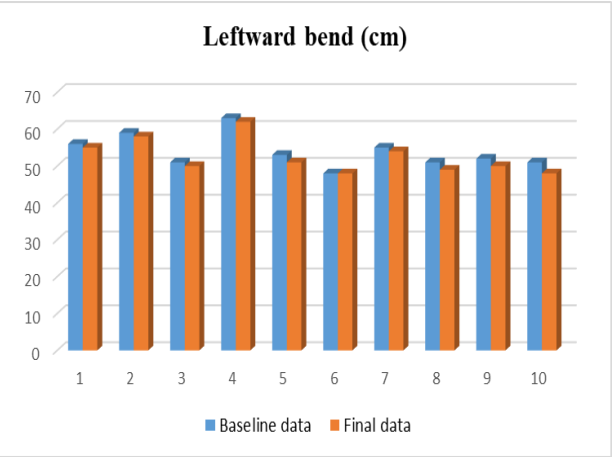


Figure 3 and 4. Graphical representation of flexibility indicators in the lumbosacral region

The graphs present the results of the rightward and leftward bend measurements (in centimeters) in 10 pregnant women. In most cases, a decrease in the final measurements compared to the initial ones is observed, suggesting an increase in flexibility and improved range of motion, as indicated by the reduced distance measured from the floor (in cm). Overall, a trend toward improvement in flexibility in both directions is evident, with the exception of participant No. 6, where no change in the bend was observed.

B. Balance stability tests [*in seconds****]***

Following the initial measurement of balance stability from a kneeling position, 60% of the pregnant women tested showed results of 0 seconds, while the remaining 40% achieved initial times in the range of 30-60 seconds. This indicates that the individuals with a zero result were unable to maintain the position for even one second. After a one-month period of engaging in the Nesheva's Program, which included 8 sessions of 60 minutes each, the participants showed significant improvement, with the holding time in the starting position (kneeling support with the opposite hand raised and the opposite leg raised backward) increasing to 7-130 seconds **(Figure 5).**

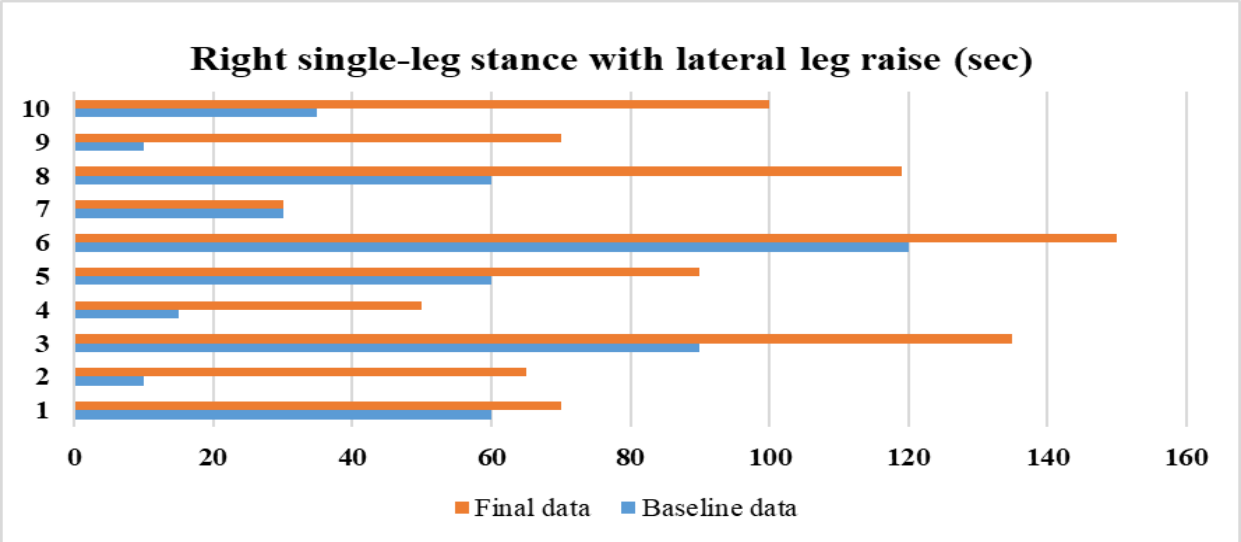


Figure 5. Evaluation of postural balance stability in a low kneeling position

The studied variables 'balance stability from initial position of single-leg stance on the right and left leg' are presented in **Figures 6 and 7**. The assessment involved measuring the duration (in seconds) for which the 10 pregnant participants were able to maintain the raised leg (left/right) until failure.

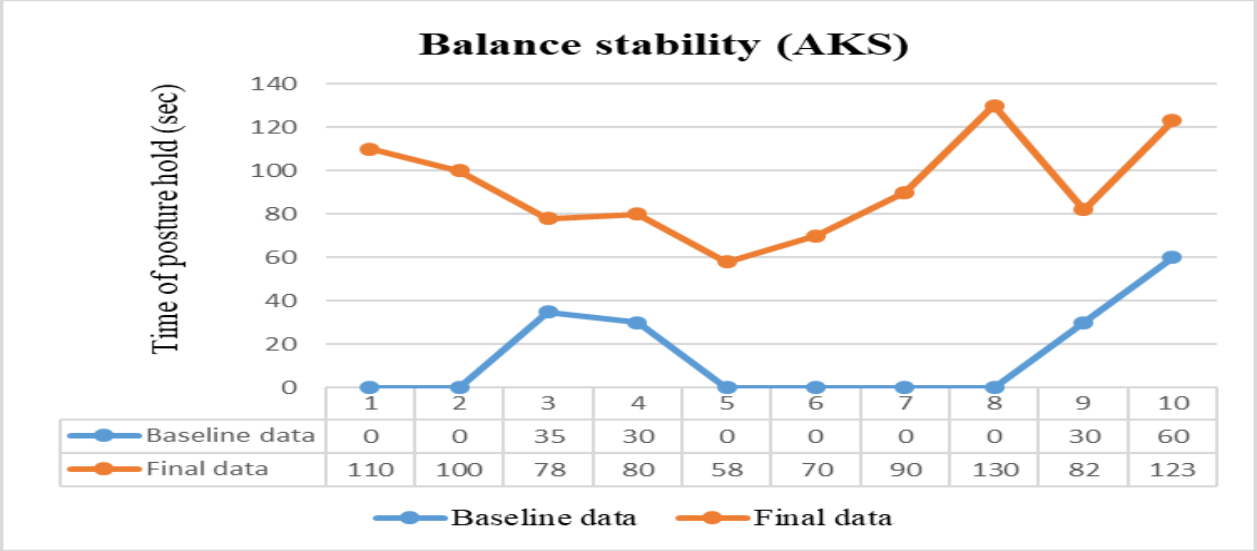


Figure 6. Balance stability test – right leg stance with lateral leg raise

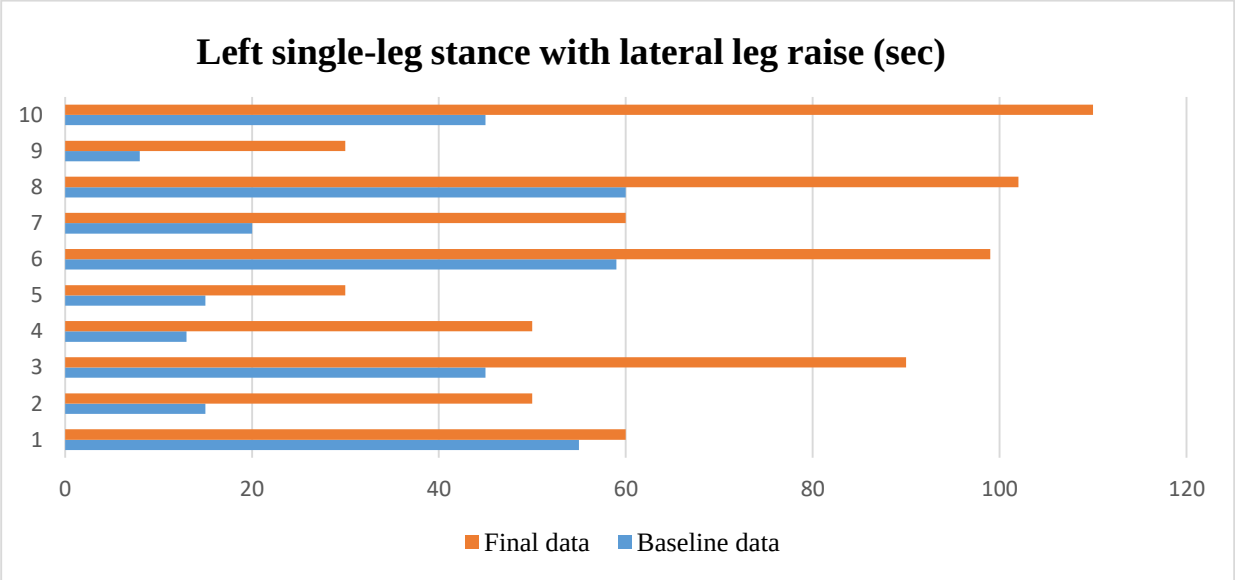


Figure 7. Balance stability test – left leg stance with lateral leg raise

The data clearly show that the balance on the right/left leg with the opposite leg raised laterally improved in all participants after the intervention (application of the specialized Nesheva's Program, twice a week over a one-month period). All subjects showed better final results compared to the initial measurements, with 40% of them demonstrating significant improvement. **Figures 3 and 4** illustrate an overall increase in the values of static balance stability from the initial position (S.P.) 'right/left single-leg stance with lateral leg raise' following the 8 training sessions. This suggests that the program has an effect on the balance of the pregnant women undergoing the training.

DISCUSSION

With the increasing interest in healthy lifestyles and physical activity among various social groups, pregnancy is becoming established as a specific phase where adapted programs for physical exercise and rehabilitation for discomfort are sought. Although pregnancy is typically associated with the need for rest and caution, there is growing understanding of the benefits of targeted physical activity that can relieve both the physical and emotional well-

being of expectant mothers. The sports-animation product aimed at this category of tourists integrates the principles of safety, adaptability, and satisfaction. Providing physical activity in a comfortable and supportive environment can promote the physical and mental health of women during pregnancy, while also offering relaxation and social integration. This innovative product not only contributes to improving the quality of life for pregnant women, but also creates new opportunities for attractive and safe tourist services that meet the needs of an emerging and specific audience.

Based on the above, the current sports-animation product aims to offer an integrated program that combines physical exercise with animation elements, which are effective and safe for the category of pregnant women, ensuring a pleasant and unforgettable experience. The program includes smooth dance steps from Bulgarian folklore, exercises from dance formats (19), exercises with large fitballs, work with mini equipment, and background music for emotional freedom **(Figure 8** – photo block).

Figure 8. Exercise program for women with normal pregnancy according to the Nesheva's Program

The program has a holistic nature and is designed to provide safe and effective physical activities for pregnant women seeking recovery, relaxation, and physical activity during their vacation. It combines physical exercises, holistic practices, and specialized care tailored to the needs of expectant mothers. Its main components are:

1. Improvement of physical activity and mobility through water gymnastics, stretching exercises, specialized prenatal yoga, breathing techniques, and light hiking routes, aiming at good preparation for childbirth and rapid recovery.
2. Holistic practices include aromatherapy with light and safe oils, sound therapy with gentle sound waves for harmony and balance, and meditative and anti-stress relaxation techniques.
3. The personalized approach includes medical monitoring and consultations with obstetricians, individual consultations with a nutritionist for dietary regime, and physical activity programs tailored to the pregnancy trimester.
4. The SPA services include safe therapies aligned with the functional and current condition of the pregnant woman, with quality assessment according to wellness service standards and certified skills of the specialized staff **(Figure 9).**

The recreational motor and holistic program for pregnant tourists offers a unique opportunity for an active and health-promoting holiday. It is tailored to the individual needs of expectant mothers and ensures physical and emotional well-being in a supportive environment. Holistic practices are approaches that include meditation, specific breathing techniques, Reiki, energy therapies, and treatments with natural remedies.

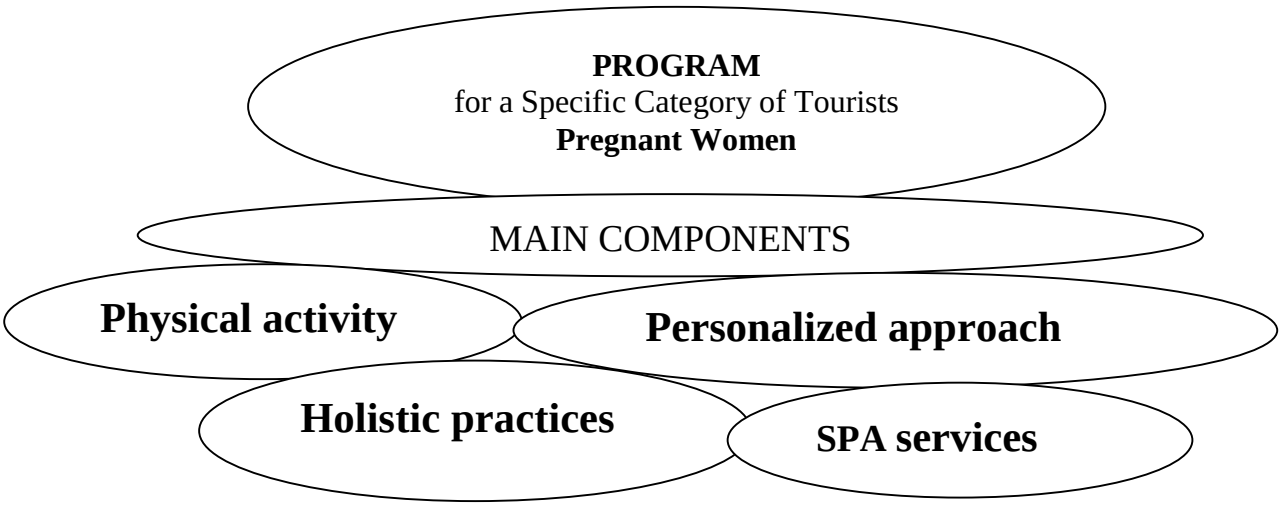


Figure 9. Structural Units of the Innovative Sports and Animation Product

Table 2 presents recreation during pregnancy through a sports and animation tourism package **(Figure 9),** associated with recreational benefits, a healthy lifestyle, rest and relaxation, and specialized SPA procedures.

Table 2. *Recreation in Pregnant Women through Sports Animation*

CATEGORIES	ACTIVITIES AND BENEFITS
1. Recreational Benefits	• Reduction of stress and anxiety through outdoor walks, art therapy, breathing techniques, and meditation. • Mood improvement as a result of physical activity programs. • Maintenance of physical activity and flexibility. • Stimulation of blood circulation and reduction of swelling. • Socialization.
2. Healthy Lifestyle	*****Nutrition***** • Balanced diet. • Sufficient water intake. • Limiting sugar, caffeine, and processed foods. *****Physical Activity***** • Specialized exercises including yoga, gymnastics, Pilates, fitball, and aqua practices.
3. Rest and Relaxation	• Reduction of fatigue and maintenance of energy and a calm atmosphere. • Improved hormonal balance. • Absence of anxiety. • Optimal fetal growth and development. • Strengthening of the immune system.
4. SPA Procedures	• Prenatal massage – specialized massage for pregnant women to relieve tension in the back, lower back, and legs. • Hydrotherapy – warm (not hot!) baths, pools with temperatures below 37°C, and therapeutic mineral waters. • Aromatherapy (with safe oils) – certain oils such as lavender and citrus may have a relaxing effect. • Reflexology – foot massage to improve circulation and reduce swelling.

CONCLUSION

The present study demonstrates that the application of a holistic movement methodology based on Nesheva's Program and activities grounded in SPA concepts positively impacts balance stability in pregnant women. The analysis of the results from the test "right and left balance stance with raised leg sideways" clearly indicates an improvement in all participants after the intervention. This is corroborated by a significant increase in the time of maintaining a static balance position in the post-intervention compared to the pre-intervention data.

The most substantial progress was observed in pregnant women with moderate initial results, suggesting a greater potential for the development of balance abilities in individuals with moderate preparedness. Even among women with initially high results, progress was noted, highlighting the effectiveness of the program regardless of the pre-existing coordination and balance.

The identified significant correlations between physical characteristics (age, weight, BMI, and torso length) and functional indicators (TRCSP, TLCSP, AKS, URLL) confirm that anatomical and physiological features during pregnancy influence motor abilities and require a specific approach when programming physical activity during pregnancy.

The findings of this study support the thesis that pregnancy should not be perceived as a period of motor restriction, but as a phase in which key physical abilities can be maintained and even improved through properly structured movement activities and wellness procedures. This has direct implications for the health of the future mother, as well as for the course of pregnancy and childbirth.

In this context, the creation of an innovative sports-animation product tailored to the specific needs of pregnant women not only meets the requirements for personalized care but also contributes to the enrichment of tourism and wellness services with scientifically grounded and effective practices.

Conflict of Interest: No conflict of interest was declared by the author and the institution.
Financial Disclosure: The article is under the implementation of project BG16RFPR002-1.014-0011 Sustainable Development of the Center of Excellence "Heritage BG," funded under the grant aid procedure BG16RFPR002-1.014 "Sustainable Development of Centres of Excellence and Centres of Competence, Including Specific Infrastructures or Their Associations from the National Roadmap for Scientific Infrastructure".
Declarations of informed consent have been signed regarding the publication of survey data.
ChatGPT is used for English grammar revision and translation.

REFERENCES

1. Dimitrova, B., N. Izov, V. Alexandrova, R. Iosifov, D. Ignatova, D. Trendafilov, V. Petrov, G. Vasileva. Smart kognitiven instrumentarium. Vŭnshna otsenka na profesionalni kompetentsii za kadri v Nishov turizŭm. [In Bulgarian]. *NSA Pres,* 58-65, Sofia. ISBN: 978-954-718-675-0, 2021.
2. Dimitrova, N. Reactions of the motor system in local and global activities. *Trakia Journal of Sciences*, 17, (1), 635 – 637, 2019.
3. Dimitrova, B., Educational policy, specialised staff, innovations and recreational industry. *Strategies for Policy in Science and Education*, 31, (5), 532 - 546, 2023.
4. Kisselkova, E. Physiological characteristics of sports sessions with women (in Human Physiology with Physiology of Sport), *Publ. House New Knowledge* , Sofia, 147-155, 2006.
5. Dimitrova, N. Control of the spatial structure in preschool children. *Trakia Journal of Sciences,* 18(1), 854-856, 2020.
6. Clatworthy J. The effectiveness of antenatal interventions to prevent postnatal depression in high-risk women. *Pub Med,* 137(1-3), 25-34, 2012.
7. Gigova I. Dependence between mental qualities and motor abilities of adolescence tennis players; *XXXth International Scientific „Conference Knowledge without borders* "; 9 –11 April 2021, Sofia, Bukgaria.
8. Dimitrova, B. A wellness lifestyle enhances emotional intelligence. Proceedings of the *International Scientific and Practical Conference - Expanding knowledge through interdisciplinary research:* 92-98, on 27-28 February 2025, Sydney. Australia
9. Dimitrova, B. Relationships between education and innovations in the recreational

Industry in Bulgaria. *Trakia Journal of Sciences,* 3, (2),194-202, 2020.

10. Dimitrova, B., T. Tomova, A. Wellness lifestyle, emotional intelligence, workplace and leadership success. *International Scientific journal Smart Innovations in Recreational, Wellness Industry and Niche Tourism,* 6 (2), 51-56, 2025.
11. Dimitrova, B. The Role of Wellness, SPA, and Thalassotherapy in Stress Management: Global and European Trends in Holistic Well-being. *International Scientific journal Smart Innovations in Recreational, Wellness Industry and Niche Tourism*. 6 (2), 7-14, 2024. eISSN 2603-4921 (online). Available at: https://scjournal.globalwaterhealth.org/.
12. Trendafilov, D. B. Dimitrova, Aqua spinning as anti-stress health prevention. *Sport Mont,* XI (7-38-39), 467-473, 2013.
13. Popova-Dobreva D. Health Promotion in Certified SPA and Balneotherapy (Medical SPA) Centres in Stara Zagora Region. *SHS Web of Conferences EDP Sciences*, 176, 1-5, 2023.
14. Dimitrova, B. Kognitivno definirane na Uelbiyng indeksite. [In Bulgarian]. Mezhdunarodno nauchno spisanie „Inovatsii v Rekreativnata & Uelnes industria i Nishov turizam“, 68-78, 2019.
15. Angelcheva, M. Complex SPA program effect on overweight women's physical condition and well-being - *Trakia Journal of Sciences* – St. Zagora, 21, (1), 556-560, 2023.
16. Dimitrova N. The factor motivation for judo training with children. International Journal of Kinesiology, *Researching in Kinesiology*. 45, (2),161-163.
17. Krzepota, J.1 Sadowska, D.2, Biernat, E. Relationships between Physical Activity and Quality of Life in Pregnant Women in the Second and Third Trimester, Public Health, *PubMed,* 15(12), 2745, 2018.
18. Yadong Jl1, Benjamin R Bates. Better Than Bank Robbery: Yuezi Centers and Neoliberal Appeals to Market Birth Tourism to Pregnant Chinese Women, Health Commun, *PubMed,* PMID: 28151012, 33(4):443-452. 2018.
19. Minkovska G. Tantsovite formati kato vazmozhnost za izyava talanta na lichnostta. [In Bulgarian]. Knowledge: International Journal search.ebscohost.com, 63 (5), 627-633, 2024.
20. Krumova R. Predizvikatelstvata kam stresa. Sbornik ot nauchni dokladi i saobshtenia Predizvikatelstvata na stresa. [In Bulgarian]. Izdatelstvo na Ministerstvoto na otbranata Sv. Georgi Pobedonosets, 159-163, 1998.
21. Dimitrova, B. Quality assessment about standards for wellness services and certified skills of specialized staff. *Trakia Journal of Sciences,* 17, (2), 143-149, 2019.