Dear Performing Arts SIG members:

This is the month to book your flight, hotel and conference for CSM in New Orleans! Registration is open! To register and for more information visit: http://www.apta.org/CSM/.

Please consider compiling Performing Arts-related abstracts for a citation blast this year. It is also a great way to bring your student interns, residents and fellows into the process. It’s easy to do and is a great way to get involved with PASIG! Take a look at our Performing Arts Citations and Endnotes (https://www.orthopt.org/content/special-interest-groups/performing-arts/citations-endnotes), look for what’s missing or needs an update, then email me your ideas or contribution for a future citation blast!

Please see the following for other exciting opportunities to get involved with the PASIG.

**Upcoming conferences:** The next Combined Sections Meeting will be held February 21-24, 2018 in New Orleans, Louisiana. Many of our members will be presenting at CSM. When you receive confirmation of your platform, poster, or session presentation, please let us know so we can spread the word to the PASIG membership! Contact Rosie Canizares: Rcc4@duke.edu

Students, if your Performing Arts poster or platform is accepted, please apply for the PASIG student scholarship. Contact Anna Saunders: annarosemary@gmail.com
2018 Annual Orthopaedic Section Meeting will be held in Baltimore, MD from April 26-28, 2018. More information will be posted when available at: https://www.orthopt.org/content/education/2018-annual-orthopaedic-section-mtg

PASIG members and leaders have been busy! There are many of us presenting at the upcoming International Association for Dance Medicine & Science 27th Annual Conference on October 12-15, 2017 in Houston, Texas, USA. Over the 4-day conference, our members and leaders are presenting didactic sessions, interactive workshops, movement sessions, round table discussions, networking events, debates, poster presentations, and more. The following PASIG leaders are slotted for didactic sessions: Annette (“Connecting the Dots Between Dance Movement and Developmental Movement: How a Little Goes a Long Way”), Amanda (“When ‘Healthy’ Goes Too Far: The Relationship of Energy Balance and Injury in Dancers”), Brooke (“From the Dance Floor to the Pelvic Floor: Concerns Regarding Pelvic Floor Dysfunction in Performers”), Sarah (“A Jump Progression Protocol for Dancers Returning to Dance After an Injury”), and Andrea (“The Effect of Pilates Training on the Alignment of the Pelvis in Dancers Ages 17-25”). There will also be posters by Annette (“Video Assessment of Countermovement Jump Performance in First Position Sauté: A Reliability Study”), Laurel (The Effect of a One-Time, 3 Hour Health Promotion Workshop on Young Competitive Dancers”), Jessica (“Challenges in Treating Achilles Tendon Injuries in the Adolescent Dancer: A Case Series”), and Rosalinda (“Musculoskeletal Effects and Injury Risk in Collegiate Indian Classical and Ballet Dancers” and “Associations Among Age, Experience, and Injuries of Dancers Presenting to a Dancer Wellness Clinic”). We look forward to the evidence-based duels on the dancer as artist vs. athlete, cryotherapy pro vs. con, and dancer screening pro vs. con, as Annette, Rosie, and Laurel battle it out with other IADMS folks! We look forward to seeing you there! Please stop by our PASIG-Orthopaedic Section booth, as we are proud sponsors of IADMS. www.iadms.org/2017

Incoming PASIG Chairs: A warm welcome and congratulations to our incoming Research Chair, Sarah Edery Atlas and incoming Fellowship Taskforce Chair, Laurel Abbruzzese!
Orthopaedic Section Mentorship Program: The Orthopaedic Section is happy to announce the Orthopaedic Section Mentorship Program (OSMP) is open for new applicants for the 2018 year.

This program matches select students in the final year of their PT program who are paired with a local section mentor for a period of 6 months. This is an opportunity to build a relationship with a clinical expert who will help shape and build your future, as well as begin networking with individuals who are physical therapy advocates and leaders at the national level.

The deadline to sign up is November 29th.
The Orthopaedic Section would appreciate your support and encourage you to share this opportunity with your students!

Applications can be found on the Orthopaedic Section website under Mentorship Program.

If there are any PASIG clinicians who are interested in being a mentor for the Orthopaedic Section, please contact Megan Poll at meganpoll@gmail.com.

Call for Performing Arts Clinical Rotation Sites: We are currently updating the list of clinical rotation sites on our website. Please e-mail Rosie Canizares (rcc4@duke.edu) if you take students and would like your information included on this list. Also, if your organization has been on the list in the past, please review our current list via the link below and submit any updates.

Dancer Screening: PASIG leadership is staying after IADMS conference to collaborate with Dance USA, Dance Source Houston, and METDance to bring the 1st annual Dance USA Freelance Dancer Health Day and Screening to Houston. We will be screening freelance professional dancers on October 16th, from 8 AM–4 PM at MetDance.

Fellowship Taskforce Update! The practice analysis re-validation project team is working on final revisions for the upcoming publication of the Description of Fellowship Practice (DFP) for Performing Arts Physical Therapy. The Description of Advanced Specialized Practice (DASP) in Performing Arts Physical Therapy was approved by the ABPTRFE in January 2016. The DFP is currently being reviewed by ABPTRFE. This is the final phase for laying the groundwork for providing current practice guidelines in the sub-specialty area as well as curriculum requirements for Performing Arts PT fellowships. Please contact Mariah Nierman Mariah.Nierman@osumc.edu or Laurel Abbruzzese La110@cumc.columbia.edu if interested.
As you can see, the PASIG is working collaboratively with many organizations to promote the well-being and care of our performing artists. Go team!

PASIG Leadership

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<th>Email</th>
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<tr>
<td>Annette Karim, President</td>
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<td>Anna Saunders, Scholarship Chair</td>
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<td>Janice Ying, ISC Chair</td>
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<tr>
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Membership: Current PASIG members, please remember to update your membership:  

Social Media: For fun PT info and related performing artists info...  
1) Facebook page: (closed) If you would like to be a part of the group, email Dawn (Doran) Muci: Dawnd76@hotmail.com  
2) follow PASIG on Twitter: @PT4PERFORMERS

Call for case reports: If you have a brief, clinically-focused case report on a performing arts PT patient, or a clinical commentary, please contact Annette Karim to submit your writing for the next Orthopaedic Physical Therapy Practice Magazine: akarim@apu.edu

WE NEED MORE CONTRIBUTORS TO OUR MONTHLY CITATION BLASTS!!!!
Past Monthly citation blasts are available, with citations and EndNote file, listed on the website: http://www.orthopt.org/content/special-interest-groups/performing-arts/citations-endnotes

TOPICS THAT HAVE BEEN COVERED RECENTLY INCLUDE:  
Ballroom Dance and Successful Aging (Current)  
Shoulder Injuries in the Performing Arts  
Rhythmic Gymnastics – Updated
Female Athlete Triad – Updated  
Periodization in Dance  
Irish Dancing  
Flexor Hallucis Longus Dysfunction  
Sacroiliac and Pelvic Dysfunction Screening  
Gyrotonics ® and Gyrokinesis ® for the Performing Artist  
Medial Tibial Stress Syndrome  
2nd Tarsometatarsal Joint Injuries in Dancers  
Screening Tools for the Young Dancer  
Thoracic Outlet Syndrome and Nerve Entrapment in Instrumental Musicians  
Plyometric Training in Dancers  
HVLAT for Lower Extremity Conditions  
Inguinal Disruption  
Femoroacetabular Impingement  
Hand and Wrist Conditions in Gymnasts  
Factors in Optimal Turnout  
Achilles Tendinopathy  
Biomechanics and Posture in Musicians

If you are interested in contributing by writing a citation blast or joining the research committee, contact me at lbreising@gmail.com.

Sincerely,

Laura

Laura Reising, PT, DPT, MS, OCS  
Research Chair, PASIG Research Committee  
Allegheny Health Network, Wexford Health + Wellness Pavilion  
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Sarah Edery-Atlas, PT, DPT Sarah.Edery-Atlas@nyumc.org (EndNote Organizer)

PERFORMING ARTS CONTINUING EDUCATION, CONFERENCES, AND RESOURCES

Orthopaedic Section Independent Study Course. 20.3 Physical Therapy for the Performing Artist.
Monographs are available for:
- Figure Skating (J. Flug, J. Schneider, E. Greenberg),
- Artistic Gymnastics (A. Hunter-Giordano, Pongetti-Angeletti, S. Voelker, TJ Manal), and
- Instrumentalist Musicians (J. Dommerholt, B. Collier).
Contact: Orthopaedic Section at: www.orthopt.org

Orthopaedic Section-American Physical Therapy Association, Performing Arts SIG
http://www.orthopt.org/content/special_interest_groups/performing_arts
Performing Arts Citations and Endnotes
http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes

ADAM Center
http://www.adamcenter.net/
Publications:
http://www.adamcenter.net/#!vstc0=publications
Conference abstracts:
http://www.adamcenter.net/#!vstc0=conferences

Dance USA
http://www.danceusa.org/
Research resources:
http://www.danceusa.org/researchresources
Professional Dancer Annual Post-Hire Health Screen:
http://www.danceusa.org/dancerhealth

Dancer Wellness Project
http://www.dancerwellnessproject.com/
Becoming an affiliate:

Glendale Adventist Therapy and Wellness Center, Los Angeles area (Eagle Rock), CA
http://www.musicianshealthcorner.com/
Healthy Musician Series - Overuse

Harkness Center for Dance Injuries, Hospital for Joint Diseases
http://hjd.med.nyu.edu/harkness/
Continuing education:
http://hjd.med.nyu.edu/harkness/education/healthcare-professionals/continuing-education-courses-cme-and-ceu
Resource papers:
http://hjd.med.nyu.edu/harkness/dance-medicine-resources/resource-papers-and-forms
Links:
Informative list of common dance injuries:
http://hjd.med.nyu.edu/harkness/patients/common-dance-injuries

Research publications:
http://hjd.med.nyu.edu/harkness/research/research-publications

International Association for Dance Medicine and Science (IADMS)
http://www.iadms.org/

International Association for Dance Medicine & Science 27th Annual Conference, October 12-15, 2017, Houston, Texas, USA. Special Interest Days will be held during the conference, including A Day for Teacher (ADFT) on Friday October 13th and A Day for Medics (ADFM) on Saturday Oct 14th.
http://www.iadms.org/

Resource papers:
http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=186

Links:
http://www.iadms.org/displaycommon.cfm?an=5

Medicine, arts medicine, and arts education organization links:
http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=5

Publications:
http://www.iadms.org/displaycommon.cfm?an=3

Performing Arts Medicine Association (PAMA)
http://www.artsmed.org/

http://www.artsmed.org/symposium.html

Interactive bibliography site:
http://www.artsmed.org/bibliography.html

Related links:
http://www.artsmed.org/relatedlinks.html

Member publications:
http://artsmed.org/publications.html

(Educators, researchers, and clinicians, please continue to email your conference and continuing education information to include in future blasts.)

Ballroom and Successful Aging

“Successful aging” is a compilation of many aspects. Some break down successful aging into two categories: biomedical and psychosocial. The biomedical approach focuses on being free of disease and maintaining physical as well as mental functions, while the psychosocial aspect focuses on life satisfaction and social participation. Can specific types of physical exercise or activity accomplish both and promote success with aging?
From a biomedical standpoint, one of the biggest causes of mortality and hospitalization in older adults are falls and subsequent fractures. Therefore, an avenue that addresses components of fall risk, such as dynamic balance, muscular strength, and cognitive function may be a useful tool to promote wellness in older adults. As for the psychosocial component, participating in a social activity with friends and even one's spouse can build positive interactions and integrate older adults in societal endeavors.

Ballroom dancing or “dancesport” is a popular activity for older adults to engage in for enjoyment as well as for fitness. This style of dance not only tests cognition with learning and coordinating dance choreography but also challenges one's muscular endurance and dynamic balance. But what does the current literature indicate about the benefits of ballroom dance and how can dancing positively influence the aging process?

Ballroom dance or “dancesport” is a partner-styled dance and is an umbrella term for multiple dances. Each dance, such as the waltz or rumba, all have unique steps, which match to music written in a specific time signature within a range of beats per minute. From the current literature, this style of dance seems to address many impairments that older adults face, such as balance deficits, cognitive function, and coordination difficulties all while helping these individuals share in new and positive experiences, which can boost well-being and self-efficacy.

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DOI:10.1016/j.archger.2011.09.004.

ABSTRACT: The aim of the present study was to analyze the influence of a ballroom dancing program on the functional autonomy and physical balance of institutionalized elderly individuals. The study enrolled 75 sedentary elderly subjects from long-term institutions who were randomly divided into a ballroom dance program group (EG; n=39) and a control group (CG; n=36). The protocol of the Latin American Group for Maturity (GDLAM) was used to evaluate functional autonomy. Physical balance was analyzed using a stabilometer and posture meter platforms. The level of significance in statistical tests was set at p<0.05. Regarding the physical balance evaluation,
only the members of the EG achieved a significant reduction in weight (Δ=-0.98 kg) following the experiment, both in the intragroup (p=0.002) and in the intergroup analysis (p=0.012). In the evaluation of functional autonomy, only the EG showed a significant reduction in the execution time of all the tests and in the GDLAM index: GI (Δ=-6.99), both in the intragroup (p<0.001) and in the intergroup analysis (p=0.011). Thus, it can be inferred that sedentary elderly individuals who are residents of long-term institutions can improve their functional autonomy and balance with a ballroom dance program.


ABSTRACT: Aging is related to a progressive remodeling of the neuromuscular system, which includes muscle mass, strength, and power reductions. This study investigated the effect of an eight-week dance program on fascicle pennation angle, fascicle length, and thickness of the vastus lateralis (VL), tibialis anterior (TA), biceps femoris (BF), and gastrocnemius medialis (GM) muscles using ultrasound images. Thirty-four healthy older women were randomly assigned to either a dancing (DG: n = 19, 69.1 ± 6.5 years, 72.5 ± 11.7 kg) or control group (CG: n = 15, 71.5 ± 7.4 years, 70.9 ± 9.3 kg). After training, the DG showed greater (p < .05) thickness for VL (16%), TA (17%), BF (19%), and GM (15%); pennation angle for VL (21%), TA (23%), BF (21%), and GM (17%); and fascicle length for VL (11%), TA (12%), BF (10%), and GM (10%). These findings suggest that dance training was effective to change the lower limb muscle architecture in older female adults.


PURPOSE: In a cross-sectional study design, we evaluated the resting heart rate (HR_{baseline}) and exercise and postexercise stress test-related chronotropic responses in male practitioners of recreational ballroom dancing (BD: n = 25, M\text{age} = 26.6 ± 6.1 years) compared to a control group of insufficiently active nondancers (CG: n = 25, M\text{age} = 25.9 ± 4.5 years).

METHOD: All participants underwent a submaximal exercise test. At 85% of the maximal predicted HR, the recovery protocol was started, and heart rate recovery (HRR) was recorded during 1-min intervals for 5 min.

RESULTS: Compared with CG, BD showed lower HR_{baseline} (70 beats per minute [bpm] vs. 62 bpm, respectively, U = 143, p < .05, ES = .46), lower preexercise HR (94 bpm vs. 86 bpm, U = 157, p < .05, ES = .42), longer exercise test duration (346 s vs. 420 s, U = 95.5, p < .05, ES = .59), and higher
HRR for 5 min postexercise (U = 1.29-1.89, p < .05, ES = .33-.50) as follows: 1st min (32 bpm vs. 40 bpm), 2nd min (45 bpm vs. 53 bpm), 3rd min (51 bpm vs. 58 bpm), 4th min (55 bpm vs. 59 bpm), and 5th min (59 bpm vs. 63 bpm). The coefficient of HRR from the 1st min to the 5th min postexercise was similar in both groups (U = 229-311, p > .05, ES = < .10-.22).

CONCLUSION: Heightened cardiovascular functional status characterized by favorable enhanced chronotropic dynamics appears to occur in practitioners of recreational ballroom dancing, which suggests that this modality of exercise may result in health benefits.


INTRODUCTION: Deficits of balance or postural control in persons of advanced age are one of the factors that influence the risk of falling. The most appropriate treatment approaches and their benefits are still unknown.

OBJECTIVE: The aim of this article is to systematically review the scientific literature to identify the therapeutic effects of dancing as a physical exercise modality on balance, flexibility, gait, muscle strength and physical performance in older adults.

METHODS: A systematic search of Pubmed, Cochrane Library Plus, PEDro, Science Direct, Dialnet and Academic Search Complete using the search terms "dance", "older", "dance therapy", "elderly", "balance", "gait" and "motor skills". The eligibility criteria were: studies written in English and Spanish, published from January 2000 to January 2013, studies which analyzed the effects of dance (ballroom dance and/or dance based exercise) in older adults over 60 years of age with no disabling disease and included the following variables of study: balance, gait, risk of falls, strength, functionality, flexibility and quality of life.

RESULTS: 123 articles were found in the literature. A final selection of seven articles was used for the present manuscript. Although the selected studies showed positive effects on the risk of falling related to factors (balance, gait and dynamic mobility, strength and physical performance), there were some aspects of the studies such as the methodological quality, the small sample size, the lack of homogeneity in relation to the variables and the measurement tools, and the existing diversity regarding the study design and the type of dance, that do not enable us to confirm that dance has significant benefits on these factors based on the scientific evidence.

BACKGROUND: A Psychomotor DANCE Therapy INtervention (DANCIN) using Latin Ballroom (Danzón) in care homes has previously been shown to enhance well-being for both residents with dementia and staff. The aim of this study was to understand the effect of this approach on the mood and behavior of individual people living with mild to moderate dementia.

METHOD: A multiple-baseline single-case study across two care homes and one nursing home with 3-6 weeks baseline, 12-weeks DANCIN (30 minutes/twice-weekly sessions), and 12-weeks follow-up was conducted. Seventeen items from the Dementia Mood Assessment Scale (DMAS) outcome measure were adapted with input from senior staff to match participants’ behavior and mood symptoms. Daily monitoring diaries were collected from trained staff on reporting individualized items for ten residents. Data were analyzed, using a non-parametric statistical method known as Percentage of All Non-Overlapping Data (PAND) which provides Phi effect size (ES). Medication use, falls, and life events were registered.

RESULTS: Seven residents participated throughout DANCIN whilst three became observers owing to health deterioration. One participant showed adverse effects in three DMAS items. Nine participants, dancers and observers, showed a small to medium magnitude of change (PAND) in 21 DMAS items, indicating a decrease in the frequency of behavior and mood indices which were regarded as problematic; eight items showed no change.

CONCLUSION: Despite methodological challenges, the DANCIN model has the potential to facilitate and sustain behavior change and improve mood (e.g. decrease irritability, increase self-esteem) of the residents living with dementia. The study was conducted in two care homes and one nursing home, strengthening the interventions’ validity. Findings suggest DANCIN is appropriate for a larger controlled feasibility study.

Guzman A, Robinson L, Rochester L, James IA, Hughes JC. A process evaluation of a Psychomotor Dance Therapy Intervention (DANCIN) for behavior change in dementia: attitudes and beliefs of participating residents and staff. Int Psychogeriatr. 2017;29(2):313-322. doi: 10.1017/S104161021600171X.

BACKGROUND: In a previous paper, we presented results from a 12-week study of a Psychomotor DANCE Therapy INtervention (DANCIN) based on Danzón Latin Ballroom that involves motor, emotional-affective, and cognitive domains, using a multiple-baseline single-case design in three care homes. This paper reports the results of a complementary process evaluation to elicit the attitudes and beliefs of home care staff, participating residents, and family members with the aim of refining the content of DANCIN in dementia care.

METHODS: An external researcher collected bespoke questionnaires from ten participating residents, 32 care home staff, and three participants’ family members who provided impromptu feedback in one of the care homes. The Behavior Change Technique Taxonomy v1 (BCTTv1) provided a
methodological tool for identifying active components of the DANCIN approach warranting further exploration, development, and implementation. RESULTS: Ten residents found DANCIN beneficial in terms of mood and socialization in the care home. Overall, 78% of the staff thought DANCIN led to improvements in residents’ mood; 75% agreed that there were improvements in behavior; 56% reported increased job satisfaction; 78% of staff were enthusiastic about receiving further training. Based on participants’ responses, four BCTTv1 labels—Social support (emotional), Focus on past success and verbal persuasion to boost self-efficacy, Restructuring the social environment and Habit formation—were identified to describe the intervention. Residents and staff recommended including additional musical genres and extending the session length. Discussions of implementing a supervision system to sustain DANCIN regularly regardless of management or staff turnover were suggested. CONCLUSIONS: Care home residents with mild to moderate dementia wanted to continue DANCIN as part of their routine care and staff and family members were largely supportive of this approach. This study argues in favor of further dissemination of DANCIN in care homes. We provide recommendations for the future development of DANCIN based on the views of key stakeholder groups.


OBJECTIVE: To investigate the effects of ballroom and Latin American dancing classes on turning in people with Parkinson’s.

DESIGN: This study employed a randomised, controlled, experimental design.

SETTING: Dance classes were performed in a community dance centre in Southern England and all assessments took place in a gait laboratory.

PARTICIPANTS: Twenty-seven people with mild-moderate Parkinson’s participated.

INTERVENTION: Participants were randomly allocated to receive either 20, 1-h dancing classes over 10 weeks (n=15), or a ‘usual care’ control group (n=12).

MAIN OUTCOME MEASURE: Twelve, 180° on-the-spot turns to the predicted/un-predicted and preferred/un-preferred direction were analysed for each participant, using 3-dimensional motion analysis before and after the intervention period, alongside clinical measures.

RESULTS: Movement of the head, pelvis, and feet during turning in people with Parkinson’s are affected by dancing with tighter coupling of body segments. Significant 4-way interactions between the groups, over time and turn style, with longer latency of the head (p=0.008) and greater rotation in the pelvis (p=0.036), alongside a trend of slower movement of the first (p=0.063) and second (p=0.081) foot in controls were shown, with minimal change in dancers. All interactions were affected by the type of turn. No
significant differences were found in the centre of mass displacement, turn time or clinical measures.

CONCLUSION: Those who danced were better able to coordinate their axial and perpendicular segments and surprisingly became more 'en bloc' in their turning behaviour, suggesting this may be a beneficial adaptation, rather than a maladaptive result of Parkinson's, as previously suggested.


BACKGROUND: Physical inactivity is commonly observed among individuals aged ≥ 60 y. Identified barriers to sedentary older adults beginning activity include low self-efficacy, pre-existing medical conditions, physical limitations, time constraints, and culture. Dancing has the potential to be an attractive physical activity that can be adjusted to fit a target population's age, physical limitations, and culture.

OBJECTIVES: This review examined the benefits to physical health of dance interventions among older adults.

METHODS: Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, a systematic search using the PubMed database was conducted. Eighteen studies met the inclusion and exclusion criteria and were analyzed for type of intervention, the study's design, participants' demographics, and outcomes, including attrition.

RESULTS: The 18 articles reported on studies conducted in North America, South America, Europe, and Asia. Of the styles of dancing, 6 studies used ballroom, 5 used contemporary, 4 used cultural, 1 used pop, and 2 used jazz. Two studies targeted older adults with pre-existing medical conditions. The average age of participants ranged from 52-87 y. Researchers used a variety of measures to assess effectiveness: (1) 3 of 5 (60%) that used measures to assess flexibility showed significant positive results; (2) 23 of 28 (82%) that used measures of muscular strength and endurance showed significant positive changes; (3) 8 of 9 (89%) that used measures of balance showed significant positive changes; (4) 8 of 10 (80%) that used measures of cognitive ability showed significant positive changes; and (5) the one that measured cardiovascular endurance showed significant positive changes. Only 6 studies reported participation, and they found low attrition.

CONCLUSIONS: The findings suggest that dance, regardless of its style, can significantly improve muscular strength and endurance, balance, and other aspects of functional fitness in older adults. Future researchers may want to analyze the effects of dance on mental health and explore ways to make this intervention attractive to both genders. Standardizing outcome measures for dance would facilitate meta-analysis.

**ABSTRACT:** Physical fitness is considered a major factor contributing to the maintenance of independent living and everyday competence. In line with this notion, it has been shown that several years of amateur dancing experience can exert beneficial effects not only on balance and posture but also on tactile, motor, and cognitive functions in older people. This raises the question of whether an even more extensive schedule of dancing, including competitive tournaments, would further enhance these positive effects. We therefore assessed posture, balance, and reaction times, as well as motor, tactile, and cognitive performance in older expert ballroom dancers with several years of competitive experience. We found substantially better performance in the expert group than in the controls in terms of expertise-related domains like posture, balance, and reaction times. However, there was no generalization of positive effects to those domains that were found to be improved in amateur dancers, such as tactile and cognitive performance, suggesting that there might be an optimal range of intervention intensity to maintain health and independence throughout the human lifespan.


**ABSTRACT:** This study compared bone mineral density (BMD) variables of female and male elite dancesport athletes with untrained control subjects of the same gender. Sixty-six elite dancesport athletes (M 33, F 33) and 64 untrained controls (M 34, F 31) participated in this study. Elite dancesport athletes were dancing couples competing at the international level. Whole-body bone mineral content and whole-body, forearm, lumbar-spine, and femoral-neck BMD, as well as whole-body fat mass and fat free mass, were measured by dual-energy X-ray absorptiometry. There were no differences (p>0.05) in height and body mass between dancers and controls of the same gender, but percent body fat was lower (p<0.05) in dancers of both genders than in untrained controls. Elite dancesport athletes had significantly higher femoral-neck BMD, and male dancers also higher whole-body BMD values when compared with controls of the same gender. All other measured bone mineral values did not differ between the groups of the same gender. In addition, training experience was positively correlated with whole-body BMD (r=0.27; p<0.05) in dancesport athletes. Based on this study, it can be concluded that elite dancesport athletes have higher BMD values at the weight-bearing site (femoral-neck BMD), while other measured areas and whole-body bone mineral values do not differ from the corresponding values of healthy sedentary controls of the same gender. According to our results,
low BMD is not an issue for elite female dancesport athletes, despite their lower percent body fat values.


**OBJECTIVE:** To study dancers’ perceptions of the physical, cognitive, affective, and social benefits of partnered dancing.

**METHOD:** 225 dancers (71% female) were recruited through a community ballroom dance center and completed an online survey designed to measure their perceptions of the physical, cognitive, affective, and social benefits of modern, partnered dance styles (swing, Lindy Hop, and ballroom dancing). Subgroups were formed for analyses. For one set of analyses, groups based on length of dance participation were formed: experienced (dancing for more than 2 years) or novice (dancing for less than a year) dancers. For another set of analyses, groups based on frequency of dance practice were formed: committed (dancing at least one or more times per week) or occasional (dancing two or fewer times per month).

**RESULTS:** The majority of participants reported perceived benefits in physical fitness, cognition, affect, and social functioning. Experienced dancers reported significantly greater self-perceived physical, social, and cognitive benefits than novice dancers. Committed dancers were more likely than occasional dancers to report improvements in physical fitness, U=6942, z=2.38, r=0.16, p<0.05. A Mann-Whitney test indicated that self-reported improvements in mood (i.e., feeling less depressed and more happy) were greater for women than for men, U=3945, z=-3.07, r=0.20, p<0.001. Length and frequency of dance participation significantly predicted perceived physical benefits \[X(2) (1,6)=35.463, \ p<0.001, R(2)=0.16\] and social benefits \[X(2) (1,6)=15.776, \ p<0.05, R(2)=0.07\], but not cognitive benefits.

**CONCLUSIONS:** Results suggest that participation in partnered dance styles is associated with perceived improvements in physical fitness, cognitive functioning, social functioning, mood, and self-confidence, and that perceived benefits may increase as individuals dance more frequently and over longer periods of time.


**BACKGROUND:** Many studies have highlighted the positive effects of dance in people with neurodegenerative diseases.
OBJECTIVES: To explore the effects of International Ballroom Dancing on cognitive function in elders with amnestic mild cognitive impairment (aMCI).

METHODS: One-hundred twenty-nine elderly patients with aMCI diagnosis (mean age 66.8 ± 10.1 years) were randomly assigned into 2 groups: intervention group (IG, n = 66) and control group (CG, n = 63). The IG exercised systematically for 10 months, and both groups were submitted to extensive neuropsychological assessment prior and after the 10-month period.

RESULTS: According to the independent sample t test at the follow-up, significant differences between groups were found in benefit of the IG while the CG showed worse performance in the majority of neuropsychological tests. According to the Student t test, better performance is detected in IG in contrast with CG, which had worse performance almost in all scales.

CONCLUSION: Dance may be an important nonpharmacological approach that can benefit cognitive functions.


AIM: Regular and structured physical activity is known to be effective in preventing and/or reducing the physical and mental decline associated with aging. Indeed, such usefulness of physical activity has been associated with the concept of "successful aging". The aim of the present study was to evaluate the possible physical and cognitive effects deriving from the practice of Dancesport in comparison with the participation in adapted physical activity (APA) programs and sedentariness.

METHODS: A total of 150 healthy older adults were enrolled, consisting of three groups: 1) Dancesport (non-competitive Latin American and Standard dancers); 2) APA (subjects practicing a multicomponent training program adapted to elderly); 3) control (sedentary subjects). All participants were assessed with cognitive computerized tests and underwent motor tests (Tinetti Test [TT] and Sit and Reach [SR] Test), and filled out a questionnaire to evaluate leisure cognitive activities and Short Form-12 (SF-12) questionnaire to assess quality of life.

RESULTS: Subjects practicing Dancesport and APA performed significantly better in all proposed tests than sedentary subjects. In particular, dancers reported better scores in both cognitive and motor tests as well as in SF-12 compared to APA.

CONCLUSION: Given its peculiar characteristics, Dancesport represents a feasible, attractive and alternative physical activity to preserve cognitive and physical functions during aging. Increased self-esteem, social contact and psychophysical wellness significantly ameliorate the quality of life during aging.

BACKGROUND: The prevention of falls among older people is a major public health challenge. Exercises that challenge balance are recognized as an efficacious fall prevention strategy. Given that small-scale trials have indicated that diverse dance styles can improve balance and gait of older adults, two of the strongest risk factors for falls in older people, this study aimed to determine whether social dance is effective in i) reducing the number of falls and ii) improving physical and cognitive fall-related risk factors.

METHODS AND FINDINGS: A parallel two-arm cluster randomized controlled trial was undertaken in 23 self-care retirement villages (clusters) around Sydney, Australia. Eligible villages had to have an appropriate hall for dancing, house at least 60 residents, and not be currently offering dance as a village activity. Retirement villages were randomised using a computer generated randomisation method, constrained using minimisation. Eligible participants had to be a resident of the village, be able to walk at least 50 m, and agree to undergo physical and cognitive testing without cognitive impairment. Residents of intervention villages (12 clusters) were offered twice weekly one-hour social dancing classes (folk or ballroom dancing) over 12 mo (80 h in total). Programs were standardized across villages and were delivered by eight dance teachers. Participants in the control villages (11 clusters) were advised to continue with their regular activities.

MAIN OUTCOMES: Falls during the 12 mo trial and Trail Making Tests.

SECONDARY OUTCOMES: The Physiological Performance Assessment (i.e., postural sway, proprioception, reaction time, leg strength) and the Short Physical Performance Battery; health-related physical and mental quality of life from the Short-Form 12 (SF-12) Survey. Data on falls were obtained from 522 of 530 (98%) randomised participants (mean age 78 y, 85% women) and 424 (80%) attended the 12-mo reassessment, which was lower among folk dance participants (71%) than ballroom dancing (82%) or control participants (82%, p = 0.04). Mean attendance at dance classes was 51%.

During the period, 444 falls were recorded; there was no significant difference in fall rates between the control group (0.80 per person-year) and the dance group (1.03 per person-year). Using negative binomial regression with robust standard errors the adjusted Incidence Rate Ratio (IRR) was 1.19 (95% CI: 95% CI = 0.83, 1.71). In exploratory post hoc subgroup analysis, the rate of falls was higher among dance participants with a history of multiple falls (IRR = 2.02, 95% CI: 1.15, 3.54, p = 0.23 for interaction) and with the folk dance intervention (IRR = 1.68, 95% CI: 1.03, 2.73). There were no significant between-group differences in executive function test (TMT-B = 2.8 s, 95% CI: -6.2, 11.8). Intention to treat (ITT) analysis revealed no between-group differences at 12-mo follow-up in the secondary outcome measures,
with the exception of postural sway, favouring the control group. Exploratory post hoc analysis by study completers and style indicated that ballroom dancing participants apparently improved their gait speed by 0.07 m/s relative to control participants (95% CI: 0.00, 0.14, p = 0.05). Study limitations included allocation to style based on logistical considerations rather than at random; insufficient power to detect differential impacts of different dance styles and smaller overall effects; variation of measurement conditions across villages; and no assessment of more complex balance tasks, which may be more sensitive to changes brought about by dancing.

CONCLUSIONS: Social dancing did not prevent falls or their associated risk factors among these retirement villages’ residents. Modified dance programmes that contain "training elements" to better approximate structured exercise programs, targeted at low and high-risk participants, warrant investigation.