

## Article

# Mix-and-match or mismatch? Exploring older adults' perspectives about Zumba dance and its potential utilization for dual-task training

Laurence Lloyd Parial<sup>1,2</sup>, Simon C. Lam<sup>1</sup>, Earl Francis Sumile<sup>3</sup>, and Angela Y.M. Leung<sup>1,4\*</sup>

<sup>1</sup> Centre for Gerontological Nursing, School of Nursing, Hong Kong Polytechnic University, Hong Kong SAR, China; laurence.parial@connect.polyu.hk (L.L.P.); simon.c.lam@polyu.edu.hk (S.C.L.); angela.ym.leung@polyu.edu.hk (A.Y.M.L.)

<sup>2</sup> College of Nursing, University of Santo Tomas, Manila, Philippines

<sup>3</sup> Graduate School, Centro Escolar University, Manila, Philippines; ersumile@ceu.edu.ph

<sup>4</sup> World Health Organization Collaborating Centre for Community Health Services, School of Nursing, Hong Kong Polytechnic University, Hong Kong SAR, China

\* Correspondence: angela.ym.leung@polyu.edu.hk; Tel.: +852-2766-5587

**Abstract:** *Background:* Despite the popularity of Zumba in several countries, research is scarce about its impact on older adults. Meanwhile, the integration of cognitive tasks with physical exercises, known as dual-tasking, is an evolving strategy to facilitate activities for older people. This study investigated the perceptions of older adults regarding Zumba and the potential of implementing it in a dual-task program. *Methods:* We conducted a qualitative-descriptive research involving 44 Filipino older adults from August to November 2020. Content analysis was employed to analyze the data. *Results:* Four themes were identified – moving towards match or mismatch; balancing benefits with burdens; dual-tasking as innovative yet potentially challenging; and overcoming barriers with enablers. While Zumba is an inclusive and beneficial activity, individual and contextual limitations could hinder its suitability for older people. Dual-tasking in Zumba was also recognized as an innovative approach, although challenges should be addressed to promote its utility. Several strategies could support the design of these programs in communities. *Conclusions:* This is the first study to explore older adults' perceptions towards Zumba and its potential utilization as a dual-tasking program. Findings could guide the implementation of appropriate Zumba and dual-tasking activities that seek to integrate cognitive and physical training for older adults.

**Keywords:** dancing; dual-task; older adults; qualitative study; Zumba

## 1. Introduction

The global phenomenon of population aging warrants integrated approaches to maintain older adults' functional abilities [1]. Moreover, inadequate physical activity (PA) is the leading cause of disease and disability in older people [2], and innovative methods are needed to address this prevalent concern. Dancing is an attractive means to promote PA among older people, as performing movements with music could promote enjoyment and variety to exercise routines [3], while being in a social environment may reinforce a sense of belongingness [4]. Thus, dancing has been found to enhance aerobic fitness [5] and psychosocial well-being in older adults [6]. Nevertheless, how older people perceive dancing as a suitable activity remains unexplored.

Most older adults currently participate in aerobic dance activities, which do not require partners but are performed as a group [7,8]. An example of this is Zumba, a Latin-inspired dance program that combines rhythmic and whole-body movements [9]. Zumba is a top dance program worldwide, being practiced in over 180 countries [10]. It is also popular in developing countries like the Philippines, which holds the world record of implementing the largest Zumba class [11]. Previous research found that Zumba may offer

physical benefits to healthy adults [12] and persons with cardiovascular risk factors [13]. A pilot study involving participants aged  $\geq 55$  years indicated that Zumba dance might improve older subjects' quality of life and a few mental abilities [14]. However, regular Zumba classes tend to have high-impact and fast-paced routines [15] that may not be appropriate for older adults with functional difficulties [16]. Compared to the original Zumba dance, a lower-intensity version known as Zumba Gold is specially designed to address the physical needs and mobility limitations of people aged  $\geq 50$  years [17]. By now, two feasibility studies have shown that older people with comorbidities may participate in Zumba Gold dancing. Delextrat et al. [18] found that Zumba Gold is safe and enjoyable for individuals with Parkinson's disease, while Bennett [19] noted that this program is acceptable for patients undergoing hemodialysis. However, no large-scale trial has been carried out to ascertain the effects of this program on the older population. Being a popular dance, Zumba could be integrated into communities, and combining this program with other activities may benefit older adults.

Dual-tasking, defined as the simultaneous performance of two tasks that can be performed in an independent manner, is a notable strategy to enhance older adults' functional capacities [21]. One of its common approaches is the incorporation of a secondary task (mental exercise) with a primary activity (physical movements). Several reviews highlighted that the mentally challenging environment in dual-tasking programs could provide physical and cognitive benefits to older adults [22,23]. While dancing may be considered a multidomain activity that could stimulate various processes [24], studies supported that increasing doses of cognitive tasks in complex motor activities could yield more significant outcomes. For instance, Barcelos and colleagues [25] noted that the addition of higher mental challenges during exergaming (movement-based video games) provided more improvements in older adults' executive functioning versus low-dose or normal conditions. Tai chi, a form of mind-body exercise, was also noted to offer better cognitive functioning in older people, especially when Sudoku challenge is added [26]. Thus, a cognitively-enriched Zumba dance intervention could provide various benefits and may be implemented in community settings, where older adults commonly reside. However, no study has been conducted yet exploring the potential of dancing to be utilized as a dual-tasking program for older people.

According to the Medical Research Council [27], understanding the stakeholders' views is critical in developing complex health interventions. Meanwhile, individuals usually start to express concerns with their health and plan suitable activities for old age at  $\geq 50$  years, which may be attributed to the increasing physical and cognitive decline at late midlife [28,29]. Hence, it is vital to include the perspectives of these people in discussing measures that aim to promote health and functional abilities in the older population. This could assist in the effective incorporation of activities in the health promotion framework, consistent with the call for integrated approaches for older people [1].

The present study aimed to explore older adults' perceptions towards Zumba and its potential to facilitate a dual-tasking program. Findings could guide how this program could be effectively designed and implemented among older adults, to maximize its possible benefits.

## 2. Materials and Methods

### 2.1 Study Design and Participants

We utilized a qualitative-descriptive design with a post-positivism paradigm to investigate older adults' perceptions towards Zumba and its potential utilization as a dual-tasking approach. As the topic has not been studied before, this design was used to explore older people's perspectives by directly obtaining the information from them and understanding their ascribed meanings [30]. We used focus groups (FGs) and individual interviews to gather data. FGs enabled participants to communicate freely with one another, similar to daily conversations [31]. Meanwhile, individual interviews facilitated deeper exploration of the participants' views through clarification and focus on situations [32].

This study involved Filipino older adults living in the Philippines (Plaridel, Bulacan) and Hong Kong. We used purposive sampling to recruit participants who were: aged  $\geq 55$  years; able to communicate in Filipino/English; and without signs of cognitive impairment, assessed via the memory and orientation test of the WHO-Integrated Care for Older People (ICOPE) [33]. While Zumba is popular in the study setting, we recruited participants who were familiar with the activities in the program, such as persons who had experience in attending Zumba sessions and those who had previously observed these classes. We excluded those with fever/influenza symptoms, gross hearing/visual impairment, and diagnosis of any cognitive disorder.

We collaborated with two local community organizations in the study sites, which provided a list of potential participants. We then facilitated telephone contacts with these individuals to introduce the study aims and initially screen their eligibility. Upon obtaining the interest of eligible participants to join the study, we arranged a meeting to explain the full study details and secure their informed consent.

### 2.2 Data Collection

We involved each participant in only one type of data collection. FGs were scheduled upon agreement with the participants, while individual interviews were facilitated for those unavailable for the group discussions. Further considering the public health situation from COVID-19, arrangements were made for in-person and online interviews. Health protocols observed include participant assessment for flu-like symptoms, wearing face masks, and physical distancing of at least 1.5 meters during the in-person interviews. For consistency, two research team members (L.L.P. & E.F.S.) moderated the FGs, while the first author (L.L.P.) conducted the individual interviews. Data collection lasted from August to November 2020. The FGs were held in a private room in the community centers, and individual interviews were conducted at the participants' preferred location (i.e., local café, shaded areas in parks). Online interviews were implemented via Facebook Messenger Rooms (Facebook, Inc.).

We conducted semi-structured interviews in the participants' preferred language to allow them to freely express their perspectives. The topics included beliefs and attitudes towards Zumba, perceptions about dual-tasking, and factors that may influence participation in these activities (see Supplementary S1). To better obtain their insights about dual-tasking in Zumba, we provided some examples of secondary cognitive tasks, such as performing arithmetic operations/counting, spelling words, or repeating words/numbers, while performing the dance steps.

The FGs lasted for 90–120 minutes, while the individual interviews had an average of 40–50 minutes. We conducted audio-recording of the in-person and online interviews upon the participants' permission, and the first author wrote reflective field notes about insights learned during the data collection. Data saturation was considered when the participants kept returning to similar topics, and no new findings were revealed from the analysis of the interviews.

### 2.3 Data Analysis

We performed verbatim transcription of the recorded interviews and added the field notes to the transcripts prior to analysis. Qualitative content analysis was used to analyze the data and provide a detailed account of the gathered information into meaningful clusters [34]. The inductive approach in content analysis was utilized to generate data-driven knowledge and reflect the participants' unique perspectives about Zumba and its potential utilization for dual-tasking. [34,35]. The analytical process involved iteratively reading all the transcripts and noting for patterns, followed by open coding to reflect the key concepts from the text. A total of 147 codes were generated, which were grouped into 48 sub-categories. These clusters were further sorted into 18 categories, and then abstracted into four emergent themes to convey their underlying meanings [34,35]. Finally, we developed

a conceptual model to illustrate the relationship among the themes. We utilized NVivo 12 software to support data management, organization, and analysis.

To ensure credibility, informant checking was done by contacting the participants to validate their statements in the transcripts. Moreover, two independent members read and analyzed each transcript to determine significant statements and codes. The individual analyses were compared and contrasted to establish the credibility and dependability of the findings. The whole team then discussed to re-examine the analysis before determining a consensus set of findings to facilitate conformability. Representative quotations were identified for readers to establish associations between the data and results and further assess their transferability to other groups or settings.

### 3. Results

A total of 44 older adults participated in the study, with 31 subjects included in six FGs (5 to 6 people per group), and 13 persons involved in in-depth interviews (7 via face-to-face approach and 6 via online). Participants were aged 56–74 years, and the majority were females (72.7%) and completed primary education (40.9%). About half of the participants reported having comorbidities (56.8%), such as hypertension, dyslipidemia, and diabetes (Table 1).

**Table 1.** Participants' Demographic Profile (N=44)

Variable	Frequency	(%)
Age (Mean=65.12; SD 4.4)		
55 – 64 years	19	43.2
65 – 75 years	25	56.8
Location		
Philippines	31	70.5
Hong Kong	13	29.5
Sex		
Male	12	27.3
Female	32	72.7
Education		
Primary level	18	40.9
Secondary level	11	25.0
College level or above	15	34.1
Presence of comorbidities	25	56.8
Hypertension/heart disease	19	76.0
Diabetes mellitus	2	8.0
Dyslipidemia	3	12.0
Cerebrovascular disease	1	4.0

Older adults' perceptions towards Zumba and its potential utilization as a dual-tasking program were encapsulated into four themes: (1) moving towards match or mismatch; (2) balancing benefits with burdens; (3) dual-tasking as innovative yet potentially challenging; and (4) overcoming barriers with enablers.

#### 3.1. Moving towards match or mismatch

Participants perceived that Zumba is suited to older adults' needs and preferences, being an inclusive activity that facilitates a flexible approach to dancing. As a multicomponent activity, Zumba could promote a sustained PA experience. However, others were uncertain about its appropriateness for older people, as the program's

demands may not be matched with their individual capacities, coupled with functional and perceptual barriers.

### 3.1.1. Zumba dancing matched to older people's needs and preferences

Older adults believed that the popularity of Zumba makes it appropriate for most people, regardless of age. With its group setting and non-partnered style, Zumba could allow more people to participate. Unlike formal exercise or dance classes that are more costly, they considered Zumba to be easily accessible to ordinary individuals.

*Just because people are old, it doesn't mean that they cannot join Zumba. Zumba is for everyone. It's group dancing and less expensive than other classes; so, it fits the masses. (Focus Group 1, Participant 5)*

With its fitness-based patterns, Zumba dancing could stimulate several body parts. Males also perceived that the exercise-like movements in Zumba might be appropriate for them. The combination of PA, musical accompaniment, and group setting in this dance could sustain participation in older people.

*With Zumba, you could move your arms, hips, knees, and legs. It's a mixture of movements, music, and being with people; so, you won't get tired quickly. (FG5, P-22)*

Participants also noted that Zumba facilitates dancing in a flexible manner, because it does not require perfect execution and allows participants to move within their capabilities. Thus, they believed that Zumba is a doable activity for those who are less technically skilled in dancing.

*The movements don't have to be perfect. If you think you can't do the steps, you can modify your movements. Like me, I am not talented in dancing...Sometimes, it's alright to have mistakes. (Individual interview, P-39)*

### 3.1.2 Mismatch between Zumba dance activities and individual perceptions

However, the positive characteristics of Zumba revealed a double-edged situation, as some participants felt a potential mismatch between the activity demands and their perceived abilities. Despite being inclined to participate in Zumba, some older adults conveyed that certain movements are fast-paced or difficult to follow, and other routines are more appropriate for younger people.

*I like to dance to Zumba, but sometimes I can't follow the movements that are too fast. I attended a class before, but they already have advanced steps since most of the participants were young. After one or two sessions, I stopped attending. (FG4, P-19)*

Participants mentioned functional barriers related to aging and illness, which could hinder their intentions to participate in Zumba dancing. These included mobility limitations, bodily pains, decreased activity tolerance, and poor health.

*Older people have limitations. Like me, I have some pains when walking, so I may not last long in Zumba... People need to have good health to join. How could you dance if you are sickly? (FG3, P-10)*

Ageist perceptions and stereotyped gender role beliefs influenced some participants to consider that Zumba may not be appropriate for older adults. Notably, all participants were only aware of regular Zumba classes offered to the general public, having not heard of any particular programs for older people. Meanwhile, some men believed that it was uncommon for them to join Zumba classes and felt that other people might question their masculinity if they were seen in a company of women having Zumba.

*Zumba seems enjoyable. If it were up to me, I would really want to dance. But I'm already 65 years old. (FG6, P-31)*

*It's usual practice that women join Zumba. I also wanted to join, but I may feel uneasy. Others may think of me differently, as dancing is usually for women. (FG3, P-13)*

### 3.2. Balancing benefits with burdens

Participants noted various physical and psychosocial benefits that may be obtained from Zumba dancing, although potential negative effects may also be encountered if the activity is not facilitated appropriately.

### 3.2.1. Physical and psychosocial benefits of Zumba dancing

As most participants perceived Zumba as an exercise-based activity, they perceived that it could promote cardiovascular health by reducing cholesterol levels and improving endurance. Regular physical stimulation may also improve functional mobility and better performance in daily activities, as it reinforced perceptions of increased vitality and feeling of a lighter body.

*Dancing to Zumba may lower cholesterol, so the blood could flow better. It also exercises the heart and lungs to increase stamina...It leaves a lighter feeling. (II, P-43)*

Zumba dancing could also enhance psychological well-being by relieving stress. Participants believed that participation in Zumba could divert negative thoughts and stimulate enjoyment. Interestingly, older adults thought that dancing could enhance self-esteem by promoting a sense of accomplishment and proving their functional capacity despite their age. Dancing to Zumba may enhance feelings of youthfulness, instead of being perceived as frail.

*I think the actual benefit of Zumba is that you'll gain self-esteem from doing it. You'll be proud thinking that you could still do it, unlike others who are weak or inactive... It could make someone feel younger. (II, P-38)*

Most participants considered Zumba an innate social activity that could provide opportunities to interact with peers and promote relationships. Being with people while dancing could also promote enjoyment.

*It's fun to have Zumba, especially with many people. We could have a chance to see our friends and neighbors. It's not simply dancing, there's interaction. (FG4, P-20)*

### 3.2.2. Physical and psychosocial burdens in participation

Despite these benefits, participants highlighted the potential burdens of Zumba dancing if it is not carried out properly. Some older adults expressed fear of experiencing adverse events, such as physical injury and severe breathlessness, if the activities are not suited to them. Complicated movements may also result in problems like pain, extreme fatigue, or dizziness.

*There's fear of having injuries or accidents...you may break your bones. I heard one of my peers got hurt from playing badminton, and I thought it might also happen to me... Some steps may be too strenuous. I would need a version where my body will not be in pain. (FG5, P-26)*

Instead of promoting self-esteem from attending Zumba sessions, others expressed negative feelings due to unmet expectations. Some participants conveyed frustration because they felt that the steps in existing Zumba classes were difficult to follow. Noting that Zumba is a social activity, older adults felt that inadequate group engagement, or when the instructor or participants were passively involved in dancing, might lead to boredom instead of enjoyment.

*I joined a Zumba class before, but I couldn't keep up with the steps. I felt frustrated, so I just went to the gym and have treadmill exercises... Sometimes, people might also dance uninspired. Instead of having fun, it makes the activity boring. (II, P-33)*

### 3.3. Dual-tasking as innovative yet potentially challenging

Participants believed that performing mental tasks while dancing to Zumba is a novel activity, which may also reinforce cognitive function. However, their participation may pose some challenges due to unfamiliarity with this new approach and the individual limitations of older people.

#### 3.3.1. Dual-tasking as an innovative activity

Notably, older adults conveyed that it was their first time to encounter the idea of dual-tasking, and they have not participated in related programs. Nevertheless, they perceived that combining cognitive exercises with the physical movements in Zumba would be interesting to explore. Participants also noted that some instructors tend to

encourage members to speak short words/numbers while dancing to Zumba, so performing mental challenges could be appealing. Performing cognitive tasks while having Zumba could also be comparable to singing while dancing, which could make the activity more enjoyable.

*I think that (dual-tasking in Zumba) is a good idea since it hasn't been done before. Having some mental exercises while dancing seems interesting... People like to sing when they dance.*

*So, I think doing mental exercises and saying them out loud could be fun. (FG2, P-9)*

Along with physical stimulation, they mentioned that simultaneously performing mental tasks while dancing to Zumba could exercise cognitive functions. Moreover, performing mental exercises in a backward manner (e.g., word repetition/counting) may improve memory.

*It (dual-tasking in Zumba) may stimulate the body and mind. Aside from moving, we could have our minds working. Since most people are used to repeating things in the same way, doing reverse mental challenges may sharpen the memory. (II, P-35)*

### 3.3.2. Unfamiliarity with and capacity limitations in dual-tasking

However, some participants recognized potential challenges with this new method, as they have not yet encountered the practice of dual-tasking. They noted that there might be some confusion at the beginning if they are not well-adapted to the routines and the tasks are rapidly executed. Thus, adequate time for adjustment is necessary.

*I may be a bit confused at the start because I'd concentrate first on the steps. When I get used to the new routine, it'll be easier. (FG2, P-6)*

Some also noted that older people could have difficulties if the mental challenges are too complicated. For instance, spelling lengthy words while dancing may be challenging to perform. Meanwhile, some older adults might have individual limitations, such as slower cognitive responses or running out of breath when speaking for too long, which may constrain their abilities to participate in the dual-task approach.

*I could do that (dual-tasking), I just don't want to be out of breath... Some older people don't want to think that much, probably because they have slower thought processes. They don't want to be mentally fatigued. (II, P-39)*

### 3.4. Overcoming barriers with enablers

Several measures were proposed to address the barriers in the implementation of Zumba and its dual-tasking approach. These include dual-tasking support strategies, tailored program and instruction, and local government/community support.

#### 3.4.1. Dual-tasking support strategies

Participants suggested that the integration of two tasks could be done by performing the mental exercises concurrently with the dance movements and rhythmically with the music beat. Short and simple mental activities that can be easily performed could also prevent cognitive overload.

*Every time you step at one point, the mental tasks should be done simultaneously with the beat of the rhythm... The exercises should not be too difficult. We could have basic and short words that are not overwhelming. (II, P-37)*

Older adults described that the repetition of mental tasks could allow them to adjust to the new approach and minimize cognitive fatigue. Moreover, gradual progression of physical and mental exercises could enable participants to gain confidence in performing the activities, while also provide the needed challenge and variety to the experience.

*We like doing things repetitively because it saves us from being overloaded with details...*

*Dual-tasking in Zumba is doable if we start with simple tasks before having additional activities, as the body and mind need time to adjust. (FG5, P-25)*

#### 3.4.2. Tailored program and instruction

Participants stressed the need for tailored program delivery to match the activity demands with the older adults' capacities. These include routines with lower intensity, slower pace, and simpler steps, which could facilitate more enjoyment and minimize risks.

To make them more comfortable in the dance activities, older men recommended having special Zumba classes or sessions with more male participants.

*I want to join Zumba classes with the right intensity. If it's at the point that I'm struggling to breathe, I can't enjoy that anymore. (FG6, P-27)*

*Honestly, I want to dance to Zumba. If there's an exclusive class for males or most attendees are men, we would be encouraged to join. (FG3, P-15)*

Moreover, they cited the importance of variety in music for Zumba dancing, involving both old and contemporary songs. They believed listening to old music could promote nostalgic feelings, whereas dancing to modern songs could help them relate to the current trend. Music variety could also shape the dynamic pace in certain parts of the dance.

*It's better to have a mix of old and new songs. Dancing to music that's too old will make me feel older. There's old music which we can relate to and new music for upbeat movement. (FG2, P-8)*

To properly facilitate the program for older adults, participants noted the significance of having qualified instructors. Aside from the trainer's technical abilities, interpersonal skills are equally important since participation in Zumba involves socialization.

*The instructor should be eligible to train older people... The instructor should also know how to relate to us to encourage our participation. (II, P-35)*

Having a sense of togetherness was valued by older adults, noting that social factors are enablers for their participation in activities like Zumba. Some even suggested having outfits with similar colors/shades depending on the day to enhance relatedness within the group.

*People like to wear similar colors on particular days. It's not just dancing; it could make people relate with one another. It could make Zumba more fun, and there's something to look forward. (FG3, P-12)*

### 3.4.3. Local government/community support

Apart from program factors, participants emphasized that local government support is crucial for Zumba-related activities to be accessed by community-dwelling older people. There should be regularly organized programs catering to their needs that are free for participation. These could also address financial limitations common in old age.

*If there's a fee for Zumba, it's discouraging to join. Filipinos don't like that. When you're old, you don't have the money to pay for these sessions... If the government sponsors it for free, older people could join. (FG1, P-2)*

Support from local healthcare providers, who could educate and motivate older adults, and collaborate with agencies to promote tailor-made Zumba and dual-tasking programs, was deemed essential to enable their participation in these activities.

*The community health workers could encourage me to join Zumba activities. It would be good for nurses or doctors to teach about its benefits and recommend good programs. (FG6, P-30)*

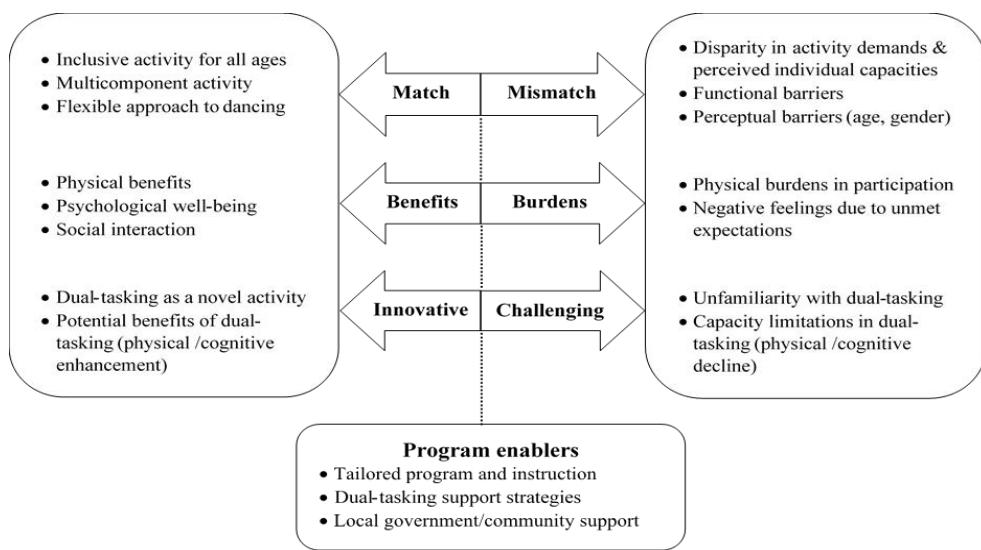
Older adults also expressed the need for appropriate public facilities, citing that outdoor venues are easily accessible to most people. They were inclined to having Zumba activities in open and shaded venues like community gyms. Unlike dance studios that are enclosed, outdoor venues could provide more space and relaxing views.

*It's better to dance outdoor, like in our covered gym. It's more spacious, open, and relaxing.*

*Being outside gives people energy, unlike in studios full of walls or mirrors. (FG4, P-16)*

## 4. Discussion

This is the first qualitative study to explore older adults' perspectives towards Zumba and its potential to be adapted as a dual-task training program. Parallel to a back-and-forth sequence in dancing, older adults' views about Zumba and its utilization for dual-tasking activities were characterized into various aspects (Figure 1). Particularly, older adults perceived Zumba as an activity suited to their needs and preferences, which could promote health benefits. However, certain factors may constrain Zumba's appropriateness for older people, resulting in untoward burdens. While utilizing Zumba to facilitate dual-tasking is an innovative strategy, there are possible challenges in this new approach. Thus, several strategies are needed to enable the implementation of these programs for older people.



**Figure 1.** Perceptions of older adults towards Zumba and its potential utilization for dual-tasking approach

One reason for Zumba's popularity is its less restrictive choreography, which could enable people to participate regardless of their technical skills [36]. This is important for older adults, who usually prefer a flexible and spontaneous PA environment [4]. Thus, participants perceived that physical and psychosocial benefits could be gained from Zumba. Previous studies noted that Zumba dancing could improve aerobic fitness, neuromuscular function [12,37], body composition [38,39], blood pressure [13,40], and quality of life [13,41] among young- and middle-aged adults. For the older population, our literature search revealed only two pilot studies identifying the potential effects of Zumba, particularly on visuospatial memory, quality of life [14], blood pressure, and physical fitness [20]. Future randomized controlled trials must fill the significant knowledge gap about the impacts of Zumba dancing on older adults.

Interestingly, participants expressed that engagement in Zumba dancing may enhance self-esteem. Dancing could be a way for older people to reminisce their youthful abilities [4] and promote self-confidence to maintain autonomy [42], which are significant components of self-esteem. However, some participants identified possible difficulties in Zumba, as its demands may not be matched with their age-related capacities. Negative incidents or feelings may be experienced if the dance routines are incompatible with their abilities. A study that implemented ballroom dancing noted that some older participants expressed frustration because they found the movements highly technical [43]. Moreover, when PA requirements are too challenging for older adults, they tend to discontinue participation to avoid embarrassment [44]. These aspects should be addressed, and the importance of tailoring strategies cannot be underemphasized.

Zumba Gold is the modified version for middle-aged and older adults, involving simple choreography, cardiovascular conditioning, flexibility, balance, and coordination

[45]. It is also a moderate-intensity activity [17], fulfilling the WHO recommendations for PA [46]. Zumba Gold could be adapted to individuals with mobility limitations [18] and performed while seated [19]. Allowing participants to control the extent of their movements is important to prevent unnecessary injury, as some participants expressed possible physical burdens from Zumba dancing. In a study involving patients with fibromyalgia, Zumba participants recognized that they felt adequate control over their safety because they were encouraged to consider their body limits while performing the dance steps [47]. However, despite the popularity of Zumba in the study setting, none of the participants were familiar with the age-appropriate Zumba Gold version. This indicates the need to offer Zumba programs tailored to older adults' needs, for them actively participate in this activity and potentially maximize its benefits.

Stereotyped beliefs about aging and gender conflicted some participants in affirming the appropriateness of Zumba for older people. These could be partly due to the limited availability of Zumba activities for older adults; thus, most of them were only familiar with Zumba classes for the general public. Although some study participants stated that age is not a barrier for Zumba dancing, older adults could experience ageist treatments in leisure-time PA and often lack appropriate exercise classes for their group [48]. Meanwhile, some male participants considered Zumba dancing as an activity for women. As previously mentioned, older men who perceive group PA programs as feminine are less motivated to participate in these activities [49]. Conversely, the current study found evidence that men may be interested in participating in Zumba dance, provided that some conditions are fulfilled, such as having exclusive classes for males. Carroll et al. [50] observed that men value homogeneity in group composition for PA because it provides a conducive space to move within their abilities and socialize with peers. Encouraging attendance with spouses or friends for interpersonal support could also facilitate male participation in group-based activities [49,51]. As participants mentioned that the exercise-based routines in Zumba could be appropriate for males, implementing gender-neutral dance movements may further motivate their engagement in these programs [52].

Notably, older adults were not familiar with the concept of dual-task training. While these programs have been implemented for several years, research about dual-tasking is scarce in low- and middle-income countries (LMICs), with most studies conducted in developed regions such as the United States [53], Canada [54], and Japan [55]. These imply the need to explore the feasibility of dual-tasking programs in LMICs, having higher aging populations that could benefit from these interventions. Although the idea of performing mental exercises while dancing is new to them, participants expressed interest in utilizing Zumba as a dual-tasking approach, noting that this would be an innovative approach to the popular dance. Using a common leisure activity like Zumba may promote better acceptance of dual-task training in this population, since older adults are motivated to participate in activities that promote enjoyment and socialization [56].

However, some participants expressed potential challenges with this new approach, due to unfamiliarity and functional changes. While dual-tasking could stimulate multiple bodily processes, older people's performance could be negatively affected by physiological decline [57]. Thus, considerations should be made for dual-tasking in Zumba to be appropriately facilitated. Participants mentioned the need to synchronize mental tasks with physical steps, almost similar to singing while dancing. This is important for dual-tasking to be performed in a more natural manner [58]. This may also serve as a creative approach to facilitate dual-tasking, in contrast to previous interventions that integrated cognitive tasks with traditional activities like cycling [53] or walking/stepping [54,55].

To minimize cognitive fatigue in older adults, it is essential to have simple and short mental exercises in dual-tasking. Repetition and gradation of cognitive exercises could also facilitate adjustment to the routines. Activities should begin at the lowest level of complexity to enable older adults to adapt progressively [21]. Frequent task repetitions also promote neuroplasticity, allowing the body and brain to coordinate effectively during concurrent performance [59]. Testing the feasibility of dual-tasking through the age-appropriate Zumba Gold is vital before fully implementing the program on a larger sample

of older adults. Ensuring standard program implementation could be facilitated through collaboration between healthcare providers and eligible instructors. This could promote adjustment of challenges to the participants' capacities, prevent unnecessary injuries, and minimize negative experiences [44].

Meanwhile, participants noted that utilizing a variety of music for Zumba dancing could promote relatedness to both the past and present. While literature generally states that older people obtain a sense of connection from listening to music in their younger years, they are also inclined to enjoy popular music for PA purposes [60]. These preferences are related to older people's motivation to have a cheerful environment in dancing, together with their desire to relate to the music introduced by younger family members [61]. In Zumba, the music is a mix of retro pop, contemporary, and Latin songs [36,62]. As older adults should exercise at a relatively slower pace and lower intensity, music with slower tempos and softer volume should also be considered.

Participants highlighted that the social aspects of Zumba dancing could facilitate participation and well-being. Some even proposed that wearing color-coordinated shirts may reinforce the spirit of togetherness within Zumba sessions, which was not mentioned in previous group PA/dance programs for older adults. As suggested, PA interventions for older people should emphasize fun and socialization [56,63]. This is an important consideration for future dance and dual-task interventions, as older adults may have PA adherence issues despite knowing its potential benefits [63,64]. Meanwhile, participants noted that the instructor's social skills are important in Zumba dancing. Besides being professionally trained, group exercise instructors are encouraged to promote communication and facilitate a motivating atmosphere for older adults [65]. Furthermore, older people perceive individuals who are entertaining, inclusive, and adaptable as effective PA facilitators [66]. However, a recent review revealed research gaps about the association between the PA instructor characteristics and health outcomes on older people [67]. Thus, ensuring that the professional and personal qualities of Zumba instructors are matched with the needs/preferences of older adults is vital in future studies.

In contrast to previous dance interventions conducted in indoor studios [68,69] or hospital settings [70], participants preferred having Zumba and its dual-tasking program in covered, outdoor community facilities. A systematic review noted that older adults are inclined to exercise in outdoor areas, perceiving these spaces as natural settings for PA and socialization [71]. This is consistent in the context of LMICs, where accessibility and affordability issues are essential in promoting PA across populations [72]. This is also noteworthy for future dance and dual-task interventions in similar settings.

Notably, participants recognized the key role of the government in the implementation of Zumba-based programs, given the limited resources of older adults and their communities. Besides providing access to suitable facilities, community organizations should collaborate with local health departments to ensure that tailored Zumba and dual-tasking interventions cater to their stakeholders' needs. This would result in better resource allocation and sustainable delivery of health programs in communities [73]. As recommended by the WHO [1], community-based interventions for older people should have links with the healthcare system.

## 5. Limitations

The study has some limitations. First, most participants were females, implying the need to recruit more men in future research to provide a more comprehensive understanding of the topic. Since some men may be hesitant to join focus groups, the information may be collected through other means like surveys. Second, the study participants may have a higher likelihood of participating in exercise programs. Less physically active individuals could have different views and perceive more barriers in Zumba/dual-tasking activities. Moreover, the study sample did not include members of the old-old population, persons with cognitive impairment, and individuals who communicate in other foreign languages. Hence, our findings cannot convey the views of the people from these groups.

It is essential to adequately represent their insights in a future study, as they may also benefit from related interventions in this topic. Since the participants did not have actual participation in dual-task training, they relied on their own experiences or understanding of Zumba to discuss the potential of integrating this dance with cognitive training. Thus, its actual feasibility needs to be assessed in the future.

## 6. Conclusions

Zumba is an inclusive dance activity for community-dwelling older adults, but individual and contextual barriers might hinder its suitability for this population. As one of the few studies to explore the potential of dual-tasking in dance activities, results have noted that incorporating cognitive exercises in Zumba could be an innovative approach that may benefit older people. However, this new method may be associated with some challenges. These findings suggest the need for support strategies to ensure that age-appropriate Zumba programs (e.g., Zumba Gold) are implemented in communities and tailored to the needs of older adults. Given the limited implementation of dual-tasking programs among LMICs, utilizing the community stakeholders' inputs is crucial in developing related interventions. To effectively integrate Zumba and dual-tasking programs in the caring framework for older people, support from local healthcare and government agencies is warranted.

**Supplementary Materials:** The following are available online at [www.mdpi.com/xxx/s1](http://www.mdpi.com/xxx/s1), Supplementary S1: Sample interview guiding questions.

**Author Contributions:** Conceptualization, L.L.P., S.C.L., E.F.S., and A.Y.M.L.; Formal analysis, L.L.P., S.C.L., E.F.S., and A.Y.M.L.; Investigation, L.L.P. and E.F.S.; Methodology, L.L.P., S.C.L., E.F.S., and A.Y.M.L.; Supervision, S.C.L., E.F.S., and A.Y.M.L.; Writing—original draft, L.L.P. and E.F.S.; Writing—review & editing, L.L.P., S.C.L., E.F.S., and A.Y.M.L. The research team members who facilitated the interviews and data analysis had previous training and experience in conducting qualitative studies. The facilitators also had no established relationships with the participants prior to the interviews.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Human Subjects Ethics Sub-committee of the Hong Kong Polytechnic University (Ref. No.: HSEARS20200717002 and date of approval 30 July 2020).

**Informed Consent Statement:** Informed consent was obtained from all participants involved in the study, including the consent for quotations to be published.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

**Acknowledgments:** We wish to thank the staff of the municipal health office in Plaridel, Bulacan, Philippines and the Hong Kong Christian Service, for assisting in the identification of potential participants in this study. We also acknowledge Dr. Betty Chung for providing expert and valuable feedback to this paper.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. World Health Organization. Integrated care for older people: guidelines on community-level interventions to manage declines in intrinsic capacity. Available online: <https://apps.who.int/iris/handle/10665/258981> (accessed on 22 February 2021).
2. World Health Organization. Ageing and Health. Available online: <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health> (accessed on 22 February 2021).
3. Yan, A.F.; Cobley, S.; Chan, C.; Pappas, E.; Nicholson, L.; Ward, R.; Murdoch, R.E.; Gu, Y.; Trevor, B.L.; Vassallo, A.J.; et al. The effectiveness of dance interventions on physical health outcomes compared to other forms of physical activity: a systematic review and meta-analysis. *Sport. Med.* **2018**, *48*, 933–951.
4. Roberson, D.N.; Pelclova, J. Social dancing and older adults: Playground for physical activity. *Ageing Int.* **2014**, *39*, 124–143.
5. Hwang, P.W.N.; Braun, K.L. The effectiveness of dance interventions to improve older adults' health: a systematic literature review. *Altern. Ther. Health Med.* **2015**, *21*, 64–70.
6. Sheppard, A.; Broughton, M.C. Promoting wellbeing and health through active participation in music and dance: A systematic review. *Int. J. Qual. Stud. Health Well-being* **2020**, *15*, 1732526.

7. Fan, J.X.; Kowaleski-Jones, L.; Wen, M. Walking or dancing: patterns of physical activity by cross-sectional age among U.S. women. *J. Aging Health* **2013**, *25*, 1182–1203.
8. Yeung O, Johnston K. The physical activity economy in Asia: market size, participation, barriers, and options to increase movement. Available online: <https://www.adb.org/sites/default/files/institutional-document/633886/adou2020bp-physical-activity-economy-asia.pdf> (accessed on 22 February 2021).
9. Luetgten, M.; Foster, C.; Doberstein, S.; Mikat, R.; Porcari, J. Zumba®: Is the "fitness-party" a good workout? *J. Sports Sci. Med.* **2012**, *11*, 357–358.
10. Thompson, W.R. Worldwide survey of fitness trends for 2013. *ACSMs Health Fit. J.* **2012**, *16*, 8–17.
11. Guinness World Records. Largest Zumba class. Available online: <https://www.guinnessworldrecords.com/world-records/largest-zumba%C2%AE-class/> (accessed on 22 February 2021).
12. Barene, S.; Krstrup, P.; Jackman, S.R.; Brekke, O.L.; Holtermann, A. Do soccer and Zumba exercise improve fitness and indicators of health among female hospital employees? A 12-week RCT. *Scand. J. Med. Sci. Sports* **2013**, *24*, 990–999.
13. Cugusi, L.; Wilson, B.; Serpe, R.; Medda, A.; Deidda, M.; Gabba, S.; Satta, G.; Chiappori, P.; Mercuro, G. Cardiovascular effects, body composition, quality of life and pain after a Zumba fitness program in Italian overweight women. *J. Sports Med. Phys. Fitness* **2016**, *56*, 328–335.
14. Stonnington, C.M.; Krell-Roesch, J.; Locke, D.E.C.; et al. Impact of Zumba on cognition and quality of life is independent of APOE4 carrier status in cognitively unimpaired older women: A 6-month randomized controlled pilot study. *Am. J. Alzheimers Dis. Other Demen.* **2020**, *35*, 1533317519868370.
15. Inouye, J.; Nichols, A.; Maskarinec, G.; Tseng, C.W. A survey of musculoskeletal injuries associated with Zumba. *Hawaii J. Med. Public Health* **2013**, *72*, 433–436.
16. Bethancourt, H.J.; Rosenberg, D.E.; Beatty, T.; Arterburn, D.E.; Barriers to and facilitators of physical activity program use among older adults. *Clin. Med. Res.* **2014**, *12*, 10–20.
17. Dalleck, L.; Byrd, B.; Weatherwax, R.M.; Zumba Gold®: Are the physiological responses sufficient to improve fitness in middle-age to older adults? *J. Sport Sci. Med.* **2015**, *14*, 689–690.
18. Bennett, P.; Cossich, T.; Ockerby, C.; Exercise during hemodialysis: the intradialytic Zumba Gold. *Nephrol. News Issues* **2012**, *26*, 31–32.
19. Deleixrat, A.; Bateman, J.; Esser, P.; Targen, N.; Dawes, H.; The potential benefits of Zumba Gold® in people with mild-to-moderate Parkinson's: feasibility and effects of dance styles and number of sessions. *Complement. Ther. Med.* **2016**, *27*, 68–73.
20. Kasim, N.F.; van Zanten, J.V.; Aldred, S.; Tai Chi is an effective form of exercise to reduce markers of frailty in older age. *Exp. Gerontol.* **2020**, *135*, 110925.
21. McIsaac, T.L.; Lamberg, E.M.; Muratori, L.M.; Building a framework for a dual task taxonomy. *Biomed. Res. Int.* **2015**, *2015*, 591475.
22. Gheysen, F.; Poppe, L.; DeSmet, A.; Swinnen, S.; Cardon, G.; De Bourdeaudhuij, I.; Chastin, S.; Fias, W. Physical activity to improve cognition in older adults: Can physical activity programs enriched with cognitive challenges enhance the effects? A systematic review and meta-analysis. *Int. J. Behav. Nutr. Phys. Act.* **2018**, *15*, 63.
23. Lauenroth, A.; Ioannidis, A.E.; Teichmann, B. Influence of combined physical and cognitive training on cognition: a systematic review. *BMC Geriatr.* **2016**, *16*, 141.
24. Brown, S.; Martinez, M.J.; Parsons, L.M. The neural basis of human dance. *Cereb. Cortex* **2006**, *16*, 1157–1167.
25. Barcelos, N.; Shah, N.; Cohen, K.; Hogan, M.J.; Mulkerrin, E.; Arciero, P.J.; Cohen, B.D.; Kramer, A.F.; Anderson-Hanley, C. Aerobic and cognitive exercise (ACE) pilot study for older adults: executive function improves with cognitive challenge while exergaming. *J. Int. Neuropsychol. Soc.* **2015**, *21*, 768–779.
26. Kayama, H.; Okamoto, K.; Nishiguchi, S.; Yamada, M.; Kuroda, T.; Aoyama, T. Effect of a Kinect-based exercise game on improving executive cognitive performance in community-dwelling elderly: Case control study. *J. Med. Internet Res.* **2014**, *16*, e61.
27. Craig, P.; Dieppe, P.; Macintyre, S.; Mitchie, S.; Nazareth, I.; Petticrew, M. Developing and evaluating complex interventions: The new Medical Research Council guidance. *BMJ* **2008**, *337*, a1655.
28. Cerasuolo, J.O.; Cipriano, L.E.; Sposato, L.A.; Kapral, M.K.; Fang, J.; Gill, S.S.; Hackam, D.G.; Hachinski, V. Population-based stroke and dementia incidence trends: Age and sex variations. *Alzheimers Dement.* **2017**, *13*, 1081–1088.
29. Hall, K.S.; Cohen, H.J.; Pieper, C.F.; Fillenbaum, G.G.; Kraus, W.E.; Huffman, K.M.; Cornish, M.A.; Shiloh, A.; Flynn, C.; Sloane, R.; et al. Physical performance across the adult life span: Correlates with age and physical activity. *J. Gerontol. A Biol. Sci. Med. Sci.* **2016**, *72*, 572–578.
30. Sandelowski, M. Whatever happened to qualitative description? *Res. Nurs. Health* **2000**, *23*, 334–340.
31. Wilkinson, S. Focus groups in health research: Exploring the meanings of health and illness. *J. Health Psychol.* **1998**, *3*, 329–348.
32. DeJonckheere, M.; Vaughn, L.M. Semistructured interviewing in primary care research: a balance of relationship and rigour. *Fam. Med. Community Health* **2019**, *7*, e000057.
33. World Health Organization. Integrated care for older people (ICOPE): guidance for person-centred assessment and pathways in primary care. Available online: <https://apps.who.int/iris/handle/10665/326843> (accessed on 22 February 2021).
34. Hsieh, H.F.; Shannon, S.E. Three approaches to qualitative content analysis. *Qual. Health Res.* **2005**, *15*, 1277–1288.
35. Graneheim, U.H.; Lundman, B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ. Today* **2004**, *24*, 105–112.
36. Luetgten, M.; Foster, C.; Doberstein, S.; Mikat, R.; Porcari, J. Zumba®: Is the "fitness-party" a good workout? *J. Sport Sci. Med.* **2012**, *11*, 357–358.

37. Donath, L.; Roth, R.; Hohn, Y.; Zahner, L.; Faude, O. The effects of Zumba training on cardiovascular and neuromuscular function in female college students. *Eur. J. Sport Sci.* **2014**, *14*, 569–577.

38. Krishnan, S.; Tokar, T.N.; Boylan, M.M.; Griffin, K.; Feng, D.; McMurtry, L.; Esperat, C.; Cooper, J.A. Zumba® dance improves health in overweight/obese or type 2 diabetic women. *Am. J. Health Behav.* **2015**, *39*, 109–120.

39. Micallef, C. The effectiveness of an 8-week Zumba programme for weight reduction in a group of Maltese overweight and obese women. *Sport Sci. Health* **2014**, *10*, 211–217.

40. Araneta, M.; Tanori, D. Benefits of Zumba Fitness® among sedentary adults with components of the metabolic syndrome: A pilot study. *J. Sports Med. Phys. Fitness* **2014**, *55*, 27–33.

41. Barranco-Ruiz, Y.; Mandic, S.; Paz-Viteri, S.; Guerendiaín, M.; Sandoval, F.V.; Villa-González, E. A short dance-exercise intervention as a strategy for improving quality of life in inactive workers. *Health Educ. J.* **2017**, *76*, 936–945.

42. Olsson, E.A.; Heikkinen, S. “I will never quit dancing”: The emotional experiences of social dancing among older persons. *J. Aging Stud.* **2019**, *51*, 100786.

43. Haboush, A.; Floyd, M.; Caron, J.; LaSota, M.; Alvarez, K. Ballroom dance lessons for geriatric depression: An exploratory study. *Arts Psychother.* **2006**, *33*, 89–97.

44. Kraft, K.P.; Steel, K.A.; Macmillan, F.; Olson, R.; Merom, D. Why few older adults participate in complex motor skills: A qualitative study of older adults’ perceptions of difficulty and challenge. *BMC Public Health* **2015**, *15*, 1186.

45. Zumba Fitness, LLC. Zumba Gold: Lower intensity workout class. Available online: <https://www.zumba.com/en-US/party/classes/class-zumba-gold> (accessed on 22 February 2021).

46. World Health Organization. Global recommendations on physical activity for health. Available online: <https://www.who.int/publications/i/item/9789241599979> (accessed on 22 February 2021).

47. Assunção Júnior, J.C.; de Almeida Silva, H.J.; da Silva, J.F.C.; da Silva Cruz, R.; de Almeida Lins, C.A.; de Souza, M.C. Zumba dancing can improve the pain and functional capacity in women with fibromyalgia. *J. Bodyw. Mov. Ther.* **2018**, *22*, 455–459.

48. Massie, A.S.; Meisner, B.A. Perceptions of aging and experiences of ageism as constraining factors of moderate to vigorous leisure-time physical activity in later life. *Soc. Leis.* **2019**, *42*, 24–42.

49. Anderson, C.; Seff, L.R.; Batra, A.; Bhatt, C.; Palmer, R.C. Recruiting and engaging older men in evidence-based health promotion programs: Perspectives on barriers and strategies. *J Aging Res.* **2016**;2016:8981435.

50. Carroll, P.; Kirwan, L.; Lambe, B. Engaging “hard to reach” men in community-based health promotions. *Int. J. Health Promot. Educ.* **2014**, *52*, 120–130.

51. Gavarkovs, A.G.; Burke, S.M.; Petrella, R.J. Engaging men in chronic disease prevention and management programs. *Am. J. Mens Health* **2016**, *10*, 145–154.

52. Bottorff, J.L.; Seaton, C.L.; Johnson, S.T.; Caperchiome, C.M.; Oliffe, J.L.; More, K.M.; Jaffer-Hirji, H.; Tillotson, S.M. An updated review of interventions that include promotion of physical activity for adult men. *Sports Med.* **2015**, *45*, 775–800.

53. Anderson-Hanley, C.; Barcelos, N.M.; Zimmerman, E.A.; Robert W. Gillen, R.W.; Dunnam, M.; Cohen, B.D.; Yerokhin, V.; Miller, K.E.; Hayes, D.J.; Arciero, P.J.; et al. The Aerobic and Cognitive Exercise Study (ACES) for community-dwelling older adults with or at-risk for mild cognitive impairment (MCI): Neuropsychological, neurobiological and neuroimaging outcomes of a randomized clinical trial. *Front. Aging Neurosci.* **2018**, *10*, 76.

54. Gregory, M.A.; Boa Sorte Silva, N.C.; Gill, D.P.; McGowan, C.L.; Liu-Ambrose, T.; Shoemaker, J.K.; Hachinski, V.; Holmes, J.; Petrella, R.J. Combined dual-task gait training and aerobic exercise to improve cognition, mobility, and vascular health in community-dwelling older adults at risk for future cognitive decline. *J. Alzheimers Dis.* **2017**, *57*, 747–763.

55. Shimada, H.; Makizako, H.; Doi, T.; Park, H.; Tsutsumimoto, K.; Verghese, J.; Suzuki, T. Effects of combined physical and cognitive exercises on cognition and mobility in patients with mild cognitive impairment: a randomized clinical trial. *J. Am. Med. Dir. Assoc.* **2018**, *19*, 584–591.

56. Beggs, B.; Kleparski, T.; Elkins, D.; Hurd, A. Leisure motivation of older adults in relation to other adult life stages. *Act. Adapt. Aging.* **2014**, *38*, 175–187.

57. Liebherr, M.; Schubert, P.; Schiebener, J.; Kersten, S.; Haas, C.T. Dual-tasking and aging – about multiple perspectives and possible implementations in interventions for the elderly. *Cogent Psychol.* **2016**, *3*, 1261440.

58. Mehta, R.K. Integrating physical and cognitive ergonomics. *IIE Trans. Occup. Ergon. Hum. Factors* **2016**, *4*, 83–87.

59. Varela-Vásquez, L.A.; Minobes-Molina, E.; Jerez-Roig, J. Dual-task exercises in older adults: A structured review of current literature. *J. Frailty Sarcopenia Falls* **2020**, *5*, 31–37.

60. Clark, I.N.; Baker, F.A.; Taylor, N.F. Older adults’ music listening preferences to support physical activity following cardiac rehabilitation. *J. Music Ther.* **2016**, *53*, 364–397.

61. Saarikallio, S. Music as emotional self-regulation throughout adulthood. *Psychol. Music* **2011**, *39*, 307–327.

62. Domene, P.A.; Moir, H.J.; Pummell, E.; Easton, C. Salsa dance and Zumba fitness: Acute responses during community-based classes. *J. Sport Health Sci.* **2016**, *5*, 190–196.

63. Devereux-Fitzgerald, A.; Powell, R.; Dewhurst, A.; French, D.P. The acceptability of physical activity interventions to older adults: A systematic review and meta-synthesis. *Soc. Sci. Med.* **2016**, *158*, 14–23.

64. Killingback, C.; Tsouliou, F.; Clark, C. Older people’s adherence to community-based group exercise programmes: A multiple-case study. *BMC Public Health* **2017**, *17*, 115.

65. Farrance, C.; Tsouliou, F.; Clark, C. Adherence to community based group exercise interventions for older people: A mixed-methods systematic review. *Prev. Med.* **2016**, *87*, 155–166.

66. Kritz, M.; Thøgersen-Ntoumani, C.; Mullan, B.; McVeigh, J.; Ntoumanis, N. Effective peer leader attributes for the promotion of walking in older adults. *Gerontologist* **2020**, *60*, 1137–1148.

67. Di Lorito, C.; Long, A.; Byrne, A.; Harwood, R.H.; Gladman, J.R.F.; Schneider, S.; Logan, P.; Bosco, A.; van der Wardt, V. Exercise interventions for older adults: A systematic review of meta-analyses. *J. Sport Health Sci.* **2020**, *10*, 29–47.

68. Doi, T.; Vergheze, J.; Makizako, H.; Tsutsumimoto, K.; Hotta, R.; Nakakubo, S.; Suzuki, T.; Shimada, H. Effects of cognitive leisure activity on cognition in mild cognitive impairment: Results of a randomized controlled trial. *J. Am. Med. Dir. Assoc.* **2017**, *18*, 686–691.

69. Lazarou, I.; Parastatidis, T.; Tsolaki, A.; Gkioka, M.; Karakostas, A.; Douka, S.; Tsolaki, M. International ballroom dancing against neurodegeneration: A randomized controlled trial in Greek community-dwelling elders with mild cognitive impairment. *Am. J. Alzheimers Dis. Other Demen.* **2017**, *32*, 489–499.

70. Zhu, Y.; Wu, H.; Qi, M.; Wang, S.; Zhang, Q.; Zhou, L.; Wang, S.; Wang, W.; Wu, T.; Xiao, M.; et al. Effects of a specially designed aerobic dance routine on mild cognitive impairment. *Clin. Interv. Aging* **2018**, *13*, 1691–1700.

71. Levy-Storms, L.; Chen, L.; Loukaitou-Sideris, A. Older adults' needs and preferences for open space and physical activity in and near parks: A systematic review. *J. Aging Phys. Act.* **2018**, *26*, 682–696.

72. Guthold, R.; Stevens, G.A.; Riley, L.M.; Bull, F.C. Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants. *Lancet Glob. Health* **2018**, *6*, e1077–e1086.

73. Stathi, A.; Fox, K.R.; Withall, J.; Bentley, G.; Thompson, J.L. Promoting physical activity in older adults: A guide for local decision makers. Available online: <http://ageactionalliance.org/wordpress/wp-content/uploads/2014/03/AVONet-report-2014-March.pdf> (accessed 22 February 2021).