

# **Evidence of disease severity, cognitive and physical outcomes of dance interventions for persons with Parkinson's Disease: a systematic review and meta-analysis**

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<sup>2</sup> School of Pharmacy, Monash University Malaysia, Malaysia

<sup>3</sup> University of Western Sydney, Australia

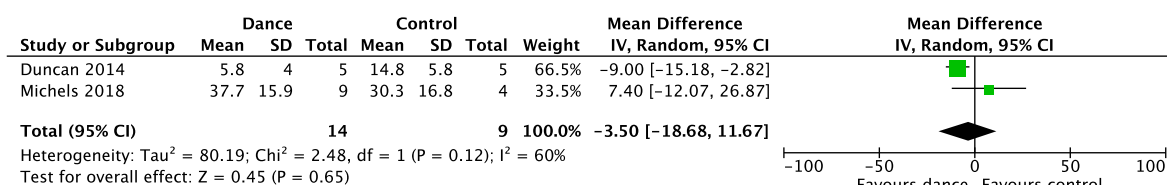
<sup>4</sup> University of Malaya Medical Centre, Malaysia.

<sup>5</sup> School of Medicine, Faculty of Health and Medical Sciences, Taylor's University Malaysia

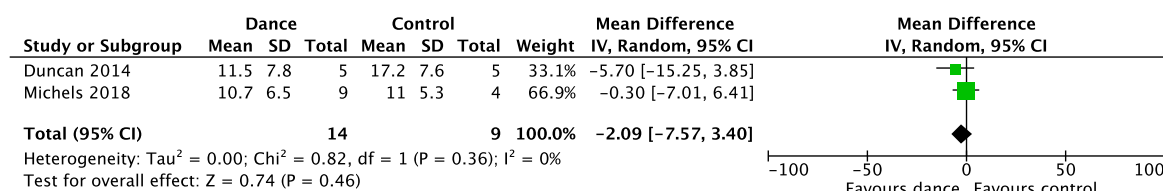
# Additional File 8

## Forest plots

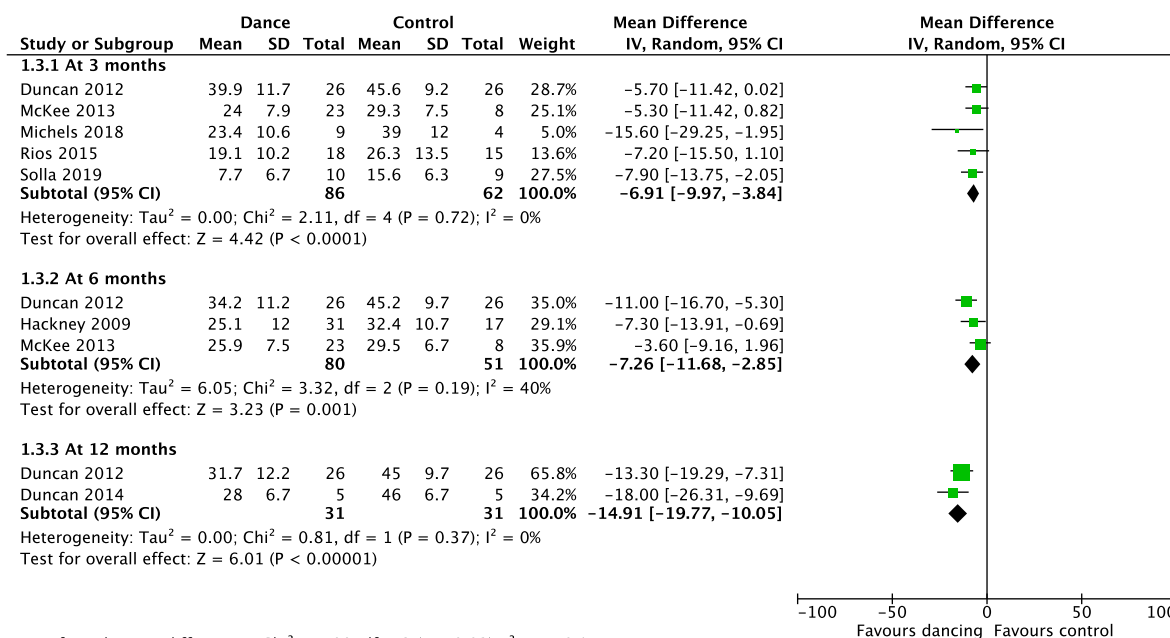
### 1. Comparison 1: Dance versus control



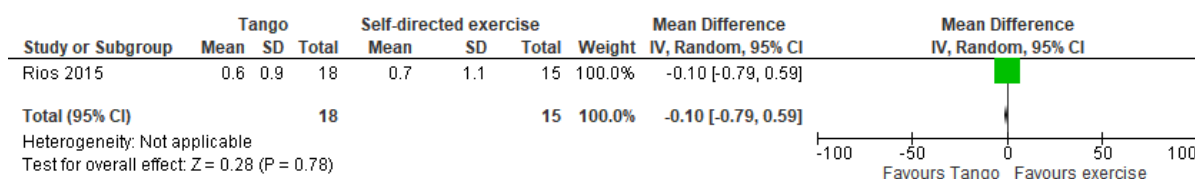
#### 1.1 Disease severity: MDS-UPDRS 1 (non-motor experiences of daily living) (0-16, higher score worse)



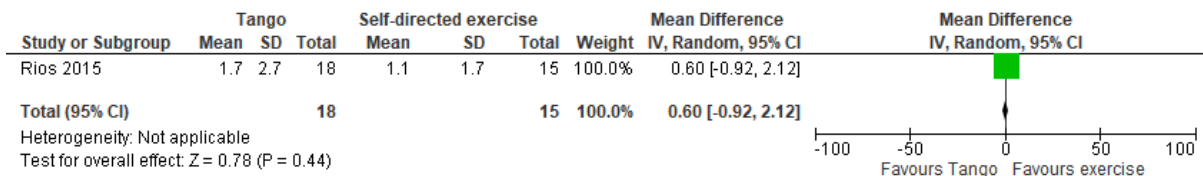
#### 1.2 Disease severity: MDS-UPDRS 2 (motor experiences of daily living) (0-56, higher score worse)



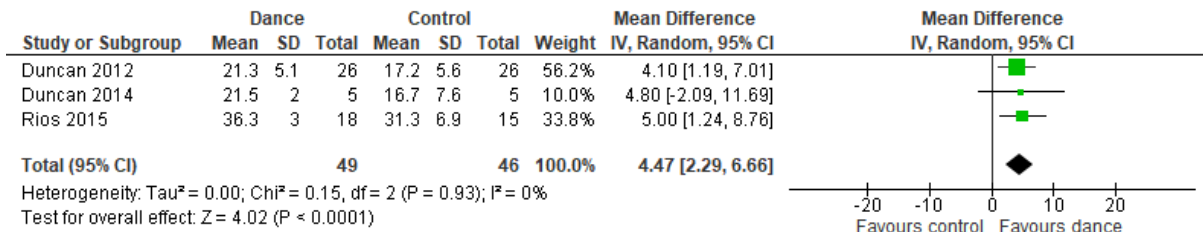
#### 1.3 Disease severity: MDS-UPDRS 3 (Motor examination) (0-108, higher score worse)



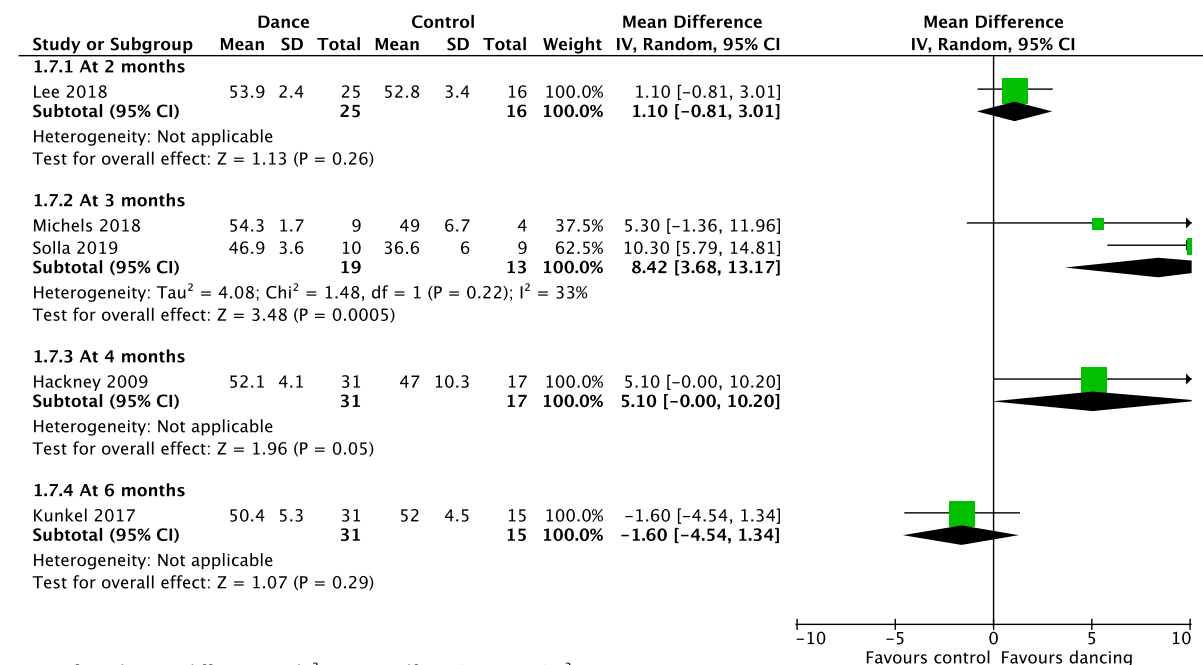
### 1.4 Disease severity: MDS-UPDRS 4 (dyskinesia) (0-13, higher score worse)



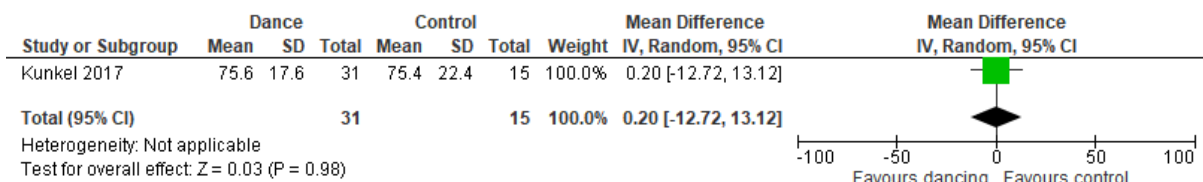
### 1.5 Disease severity: MDS-UPDRS 4 (fluctuation) (0-10, higher score worse)



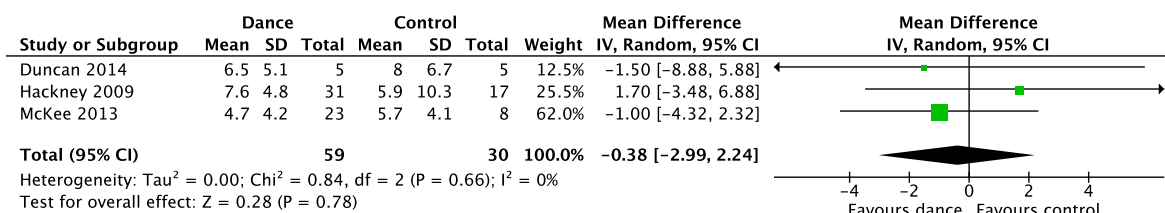
### 1.6 Balance: Mini-BEST Test (0-28, higher score indicates better balance)



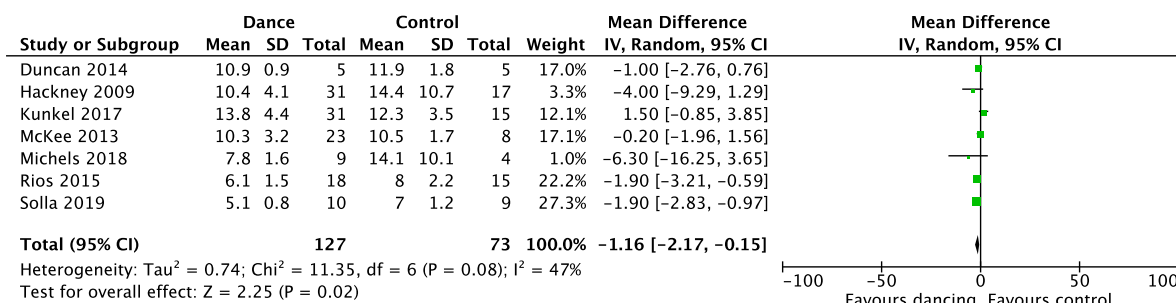
### 1.7 Balance: Berg Balance Scale (0-56, higher score indicates better balance)



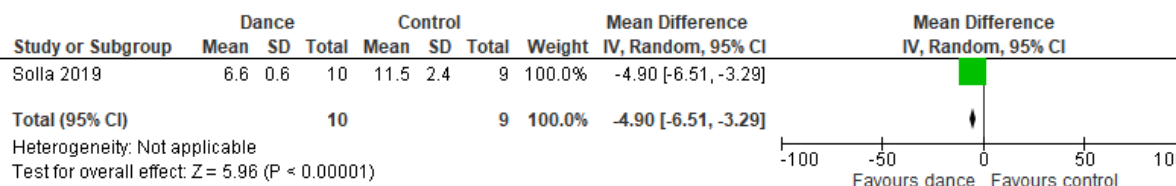
### 1.8 Balance: Activity-specific balance confidence (0-100, higher score indicates better balance confidence)



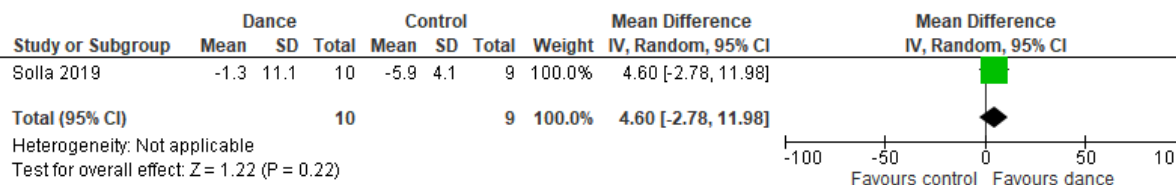
### 1.9 Freezing of gait questionnaire (0-24, higher score indicates more severe condition)



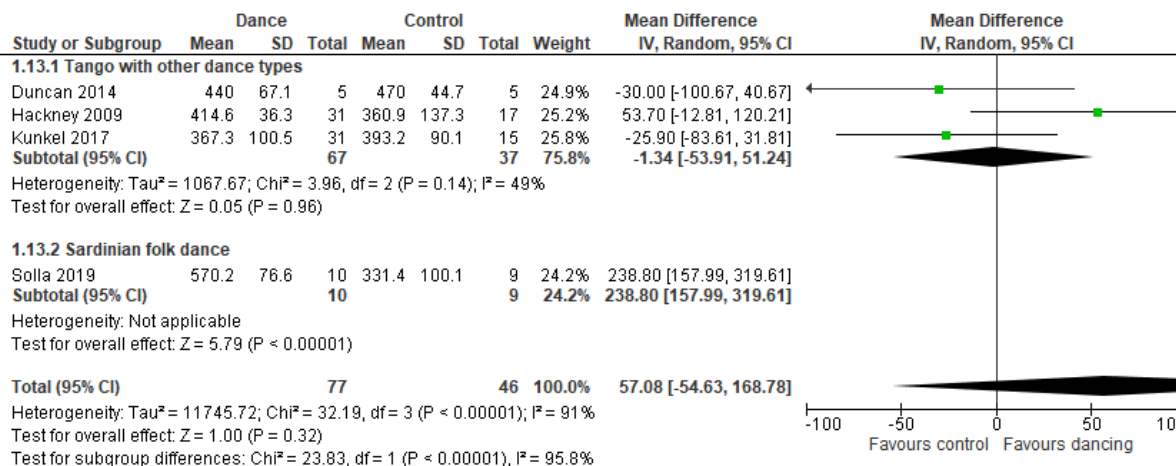
### 1.10 Timed Up and Go Test (TUG) (seconds)



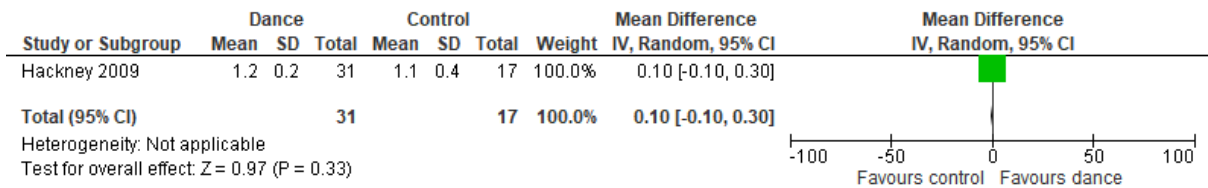
### 1.11 Five Times Sit-to-Stand Test (seconds) (lower better)



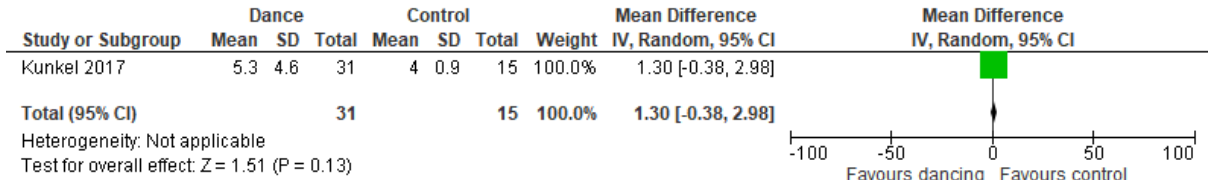
### 1.12 Sit-and-Reach Test (cm) (longer better)



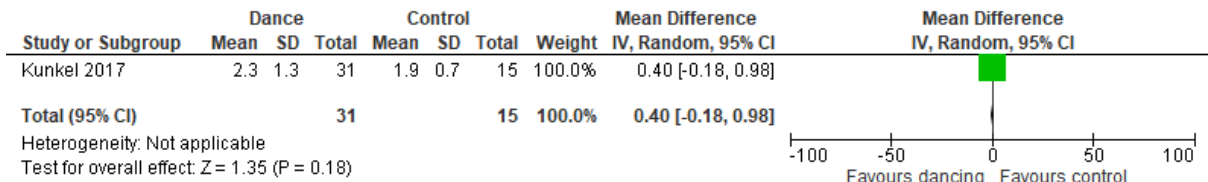
### 1.13 Walking distance: six-minute walk test (meters) (longer better)



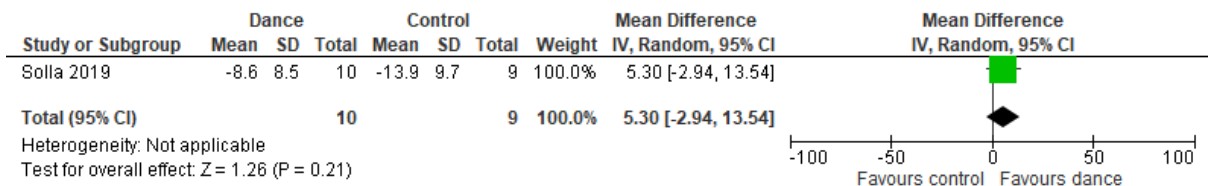
#### 1.14 Forward velocity (meter/second)



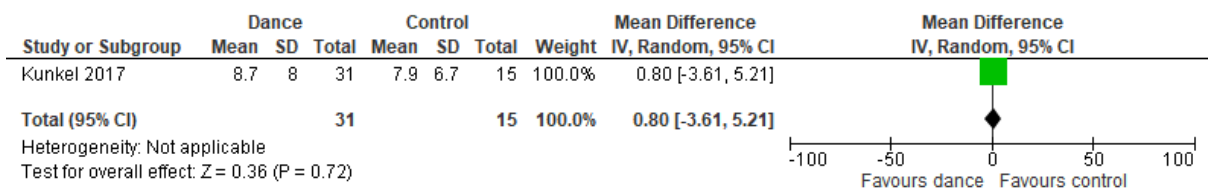
#### 1.15 Standing start 180 degree turn test (number of steps)



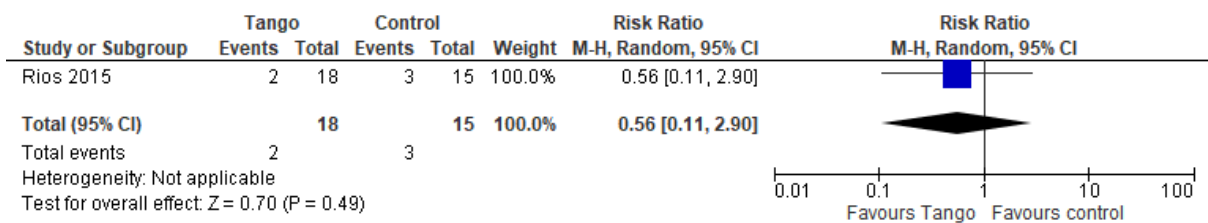
#### 1.16 Standing start 180 degree turn test (time taken in seconds)



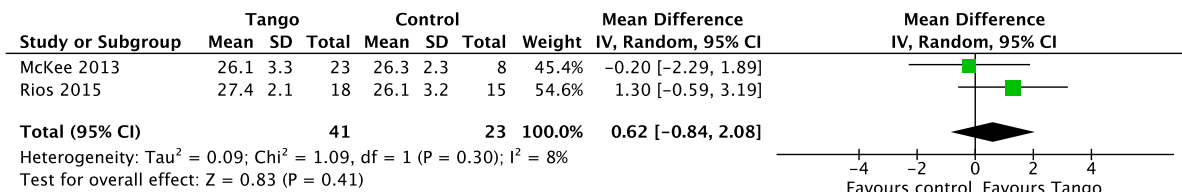
#### 1.17 Back-Scratch Test (cm) (longer better)



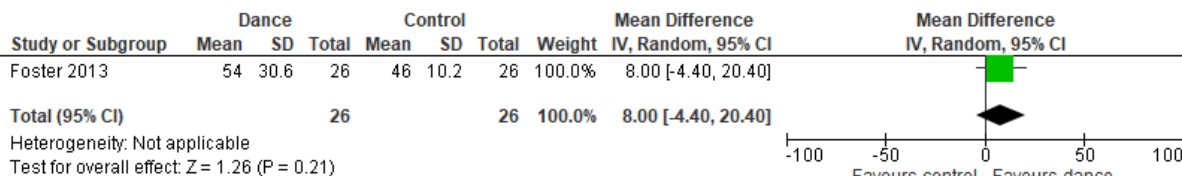
#### 1.18 Spinal mouse inclination degree (higher worse)



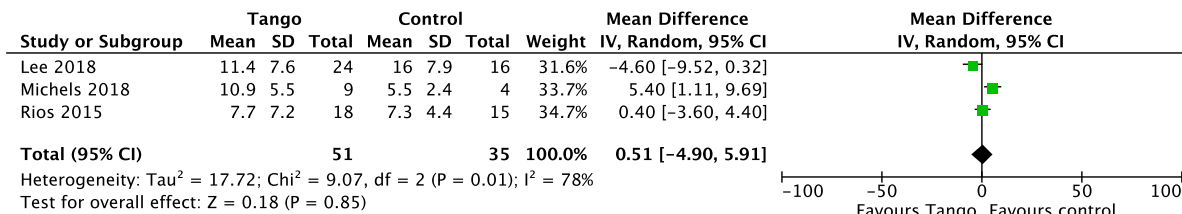
#### 1.19 Adverse events: falls during study



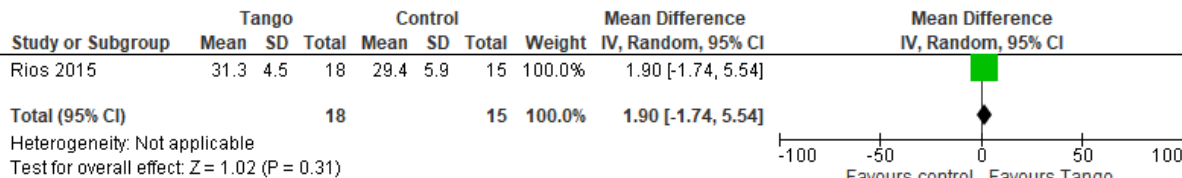
### 1.20 Cognitive function: Montreal Cognitive Assessment Scale (0-30, higher score better)



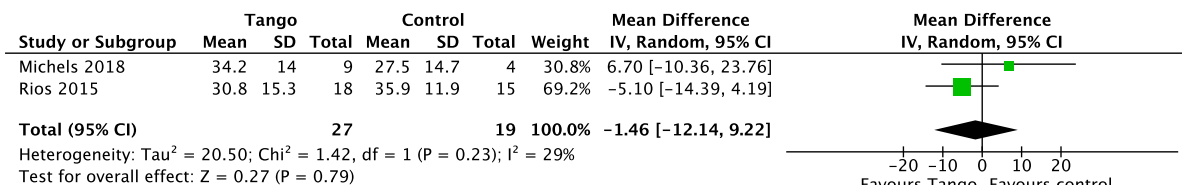
### 1.21 Activity participation: Activity Card Sort score (0-100, higher score better)



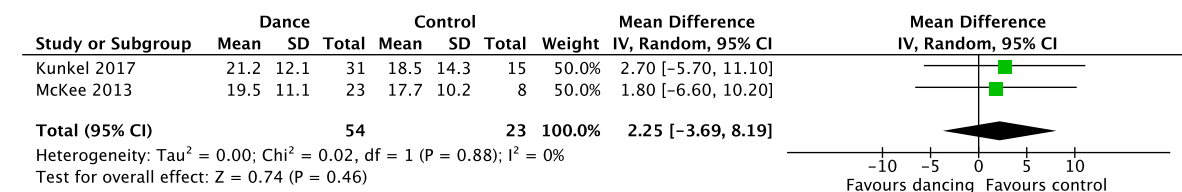
### 1.22 Depressive symptoms: Beck Depression Inventory score (0-60, higher score worse)



### 1.23 Apathy: Apathy Scale score (18-72, higher score better, less apathy)



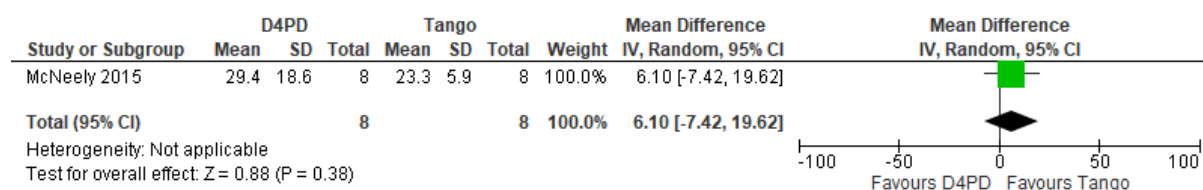
### 1.24 Fatigue: Krupp Fatigue Severity Scale score (9-63, higher score worse)



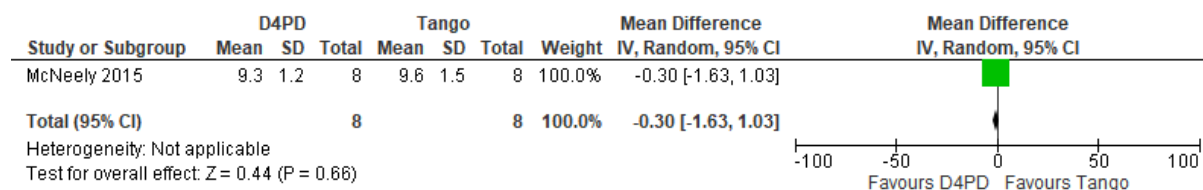
### 1.25 Quality of life: PDQ 39 score (0-100, higher score worse)

## 2. Two different forms of dance interventions

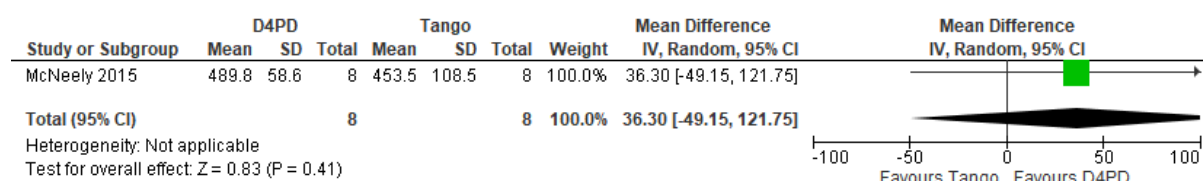
### 2.1. Dance for Parkinson's Disease (D4PD) versus Tango



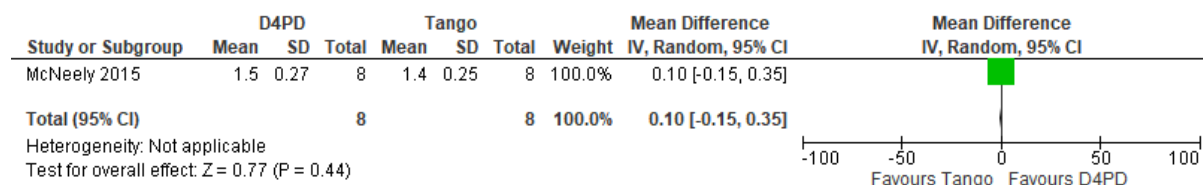
#### 2.1.1. Disease severity: MDS-UPDRS 3 (motor examination) (0-108, higher score worse)



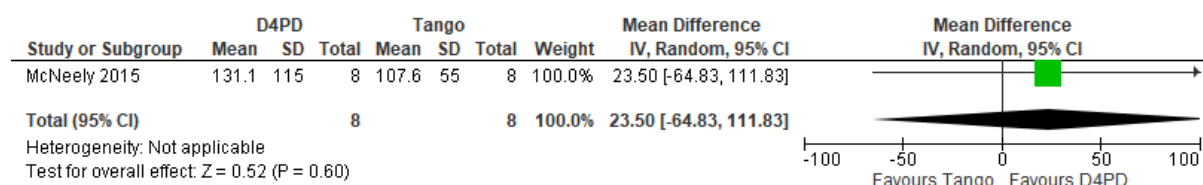
#### 2.1.2. Agility: Timed Up and Go Test (seconds)



#### 2.1.3. Walking distance: six-minute walk test (meters)

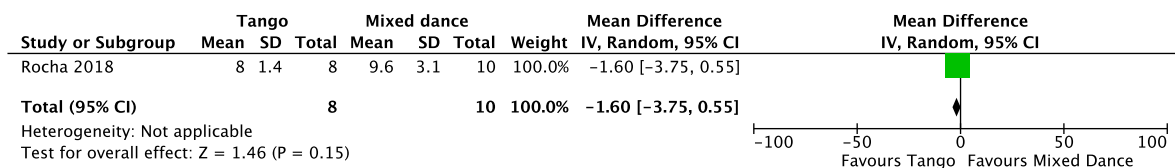


#### 2.1.4. Forward velocity (meter/second)

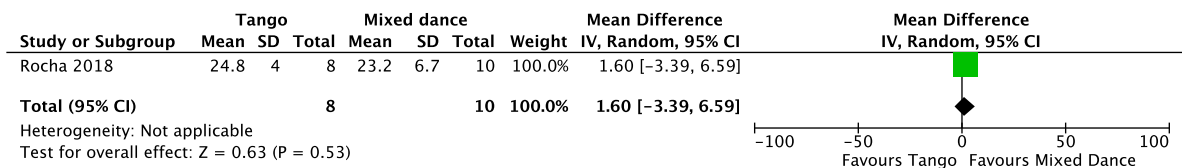


#### 2.1.5. Quality of life: PDQ 39 score (0-100, higher score worse)

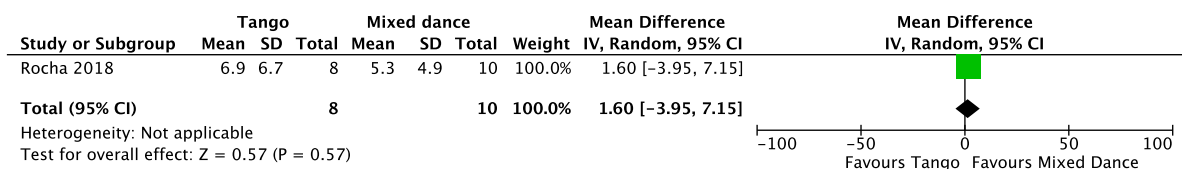
## 2.2. Tango versus Mixed dances



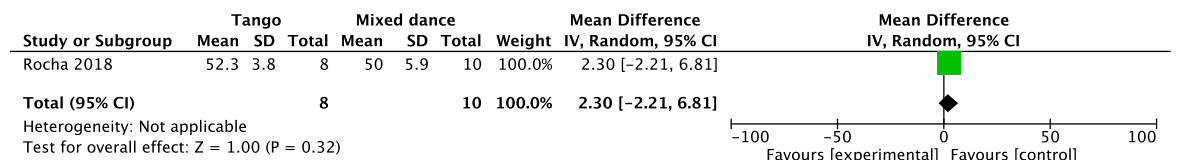
### 2.2.1. Time Up and Go test (TUG)



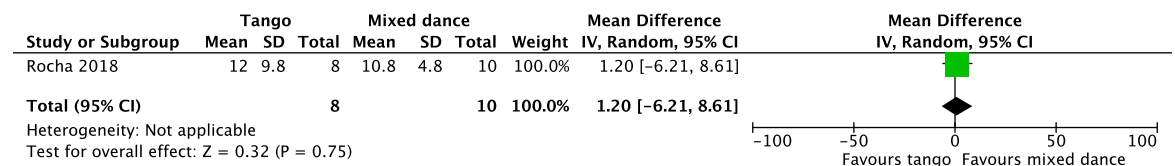
### 2.2.2. Functional Gait Assessment



### 2.2.3. Freezing gait questionnaire (0- 24, lower score better)

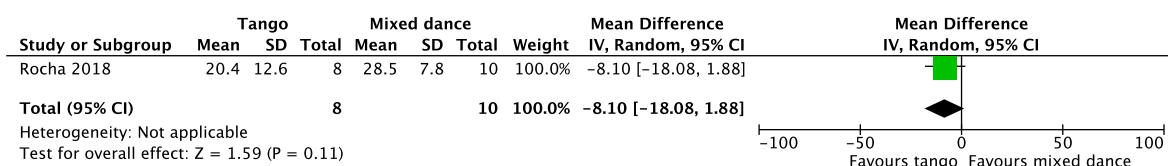


### 2.2.4. Berg Balance Scale



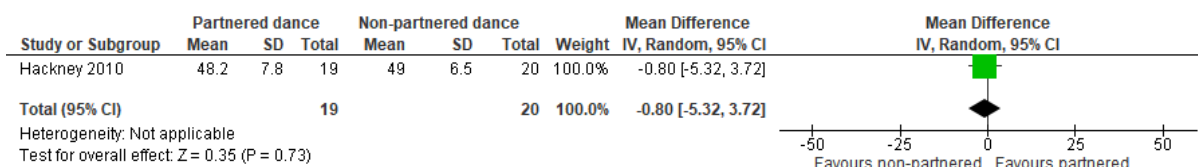
### 2.2.5. Motor experiences of daily living: MDS-UPDRS 2



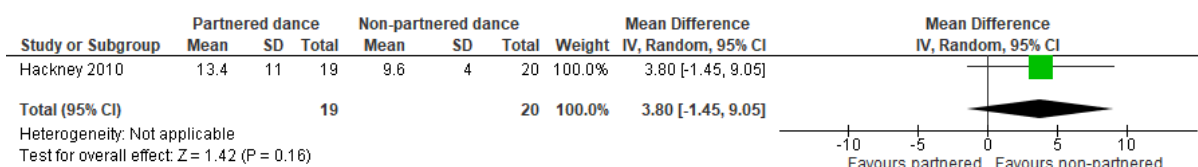


## 2.2.6. Quality of life: PDQ39

### 2.3. Partnered versus non-partnered dance



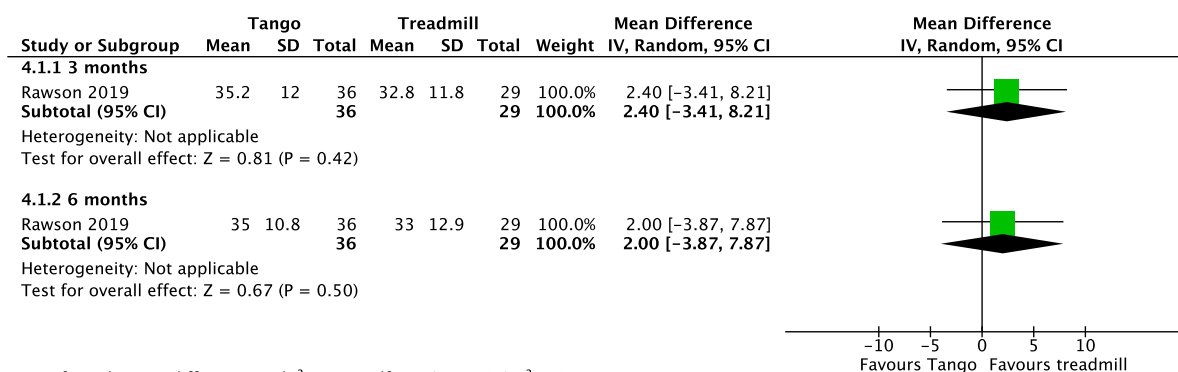
#### 2.3.1. Balance: Berg Balance Scale (0-56, higher score indicates better balance)



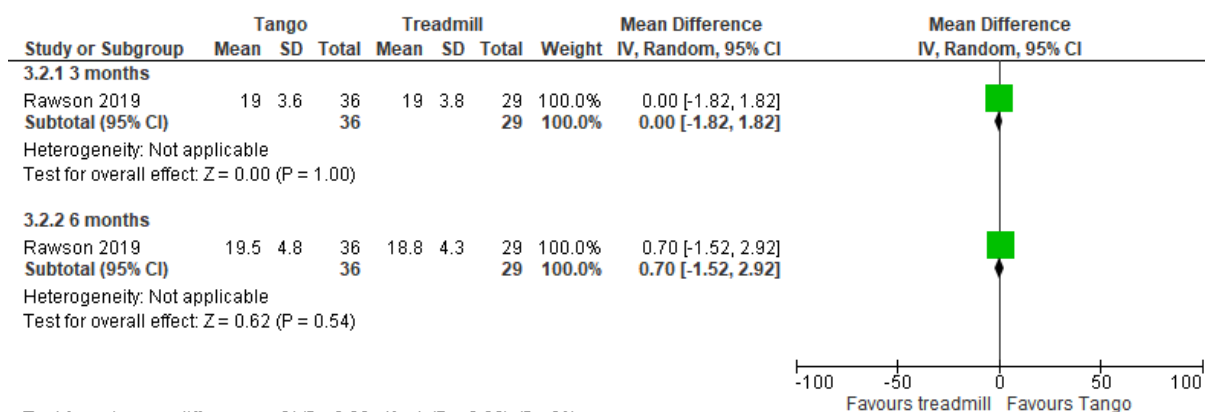
#### 2.3.2. Agility: Timed Up and Go Test (seconds)

## 3. Dance versus different exercises

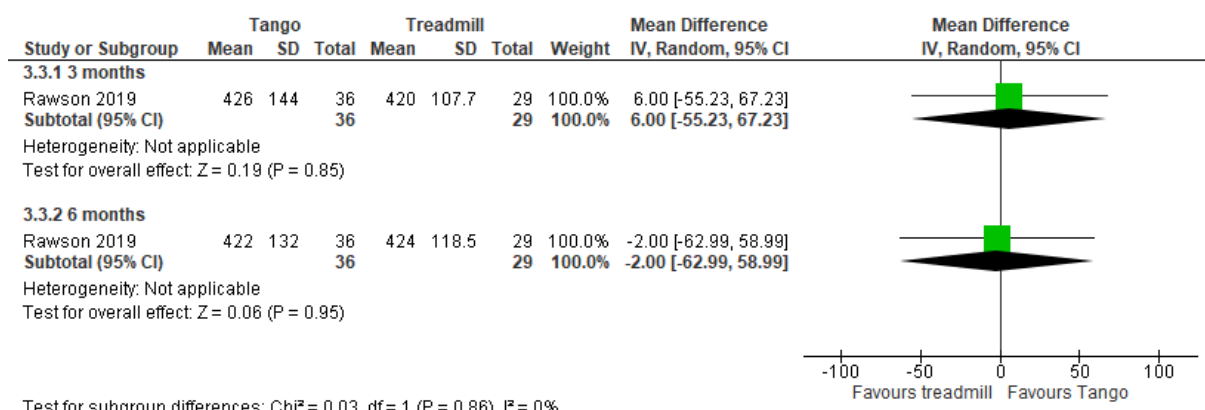
### 3.1. Tango versus treadmill



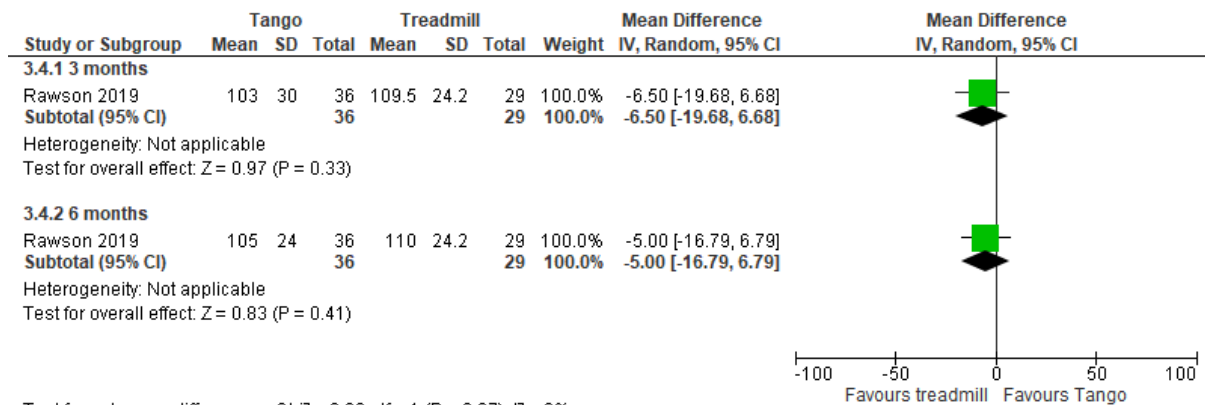
#### 3.1.1. Disease severity: MDS-UPDRS 3 (motor examination) (0-108, higher score worse)



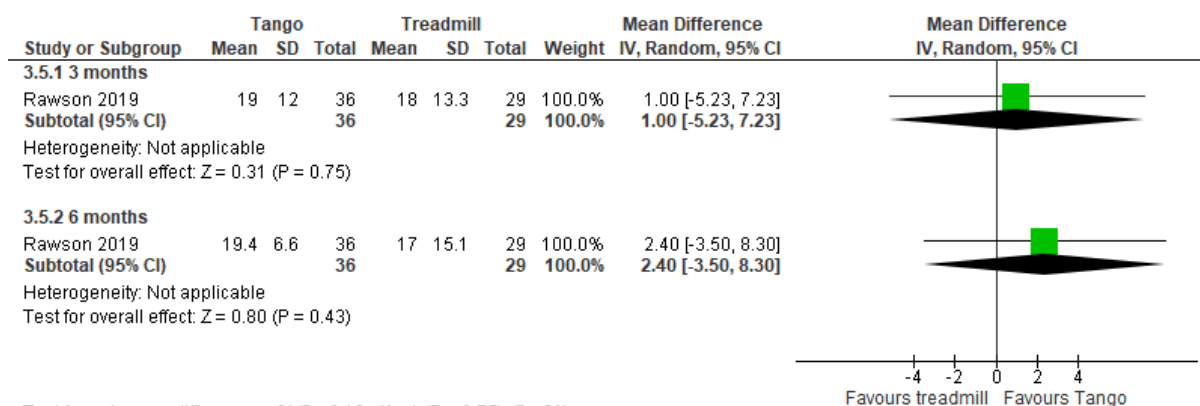
### 3.1.2. Balance: Mini-BEST Test (0-28, higher score indicates better balance)



### 3.1.3. Walking distance: Six-minute walk test (meters)

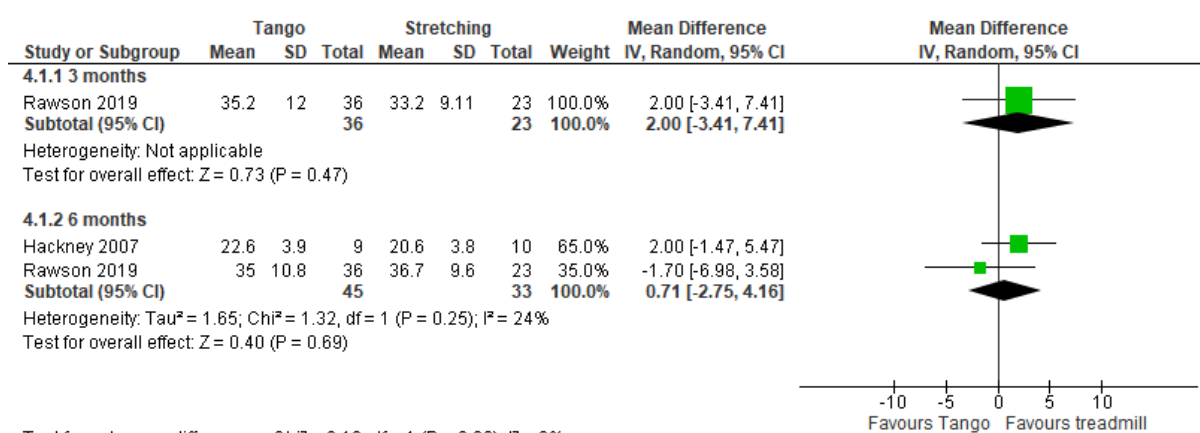


### 3.1.4. Forward velocity (meter/second)

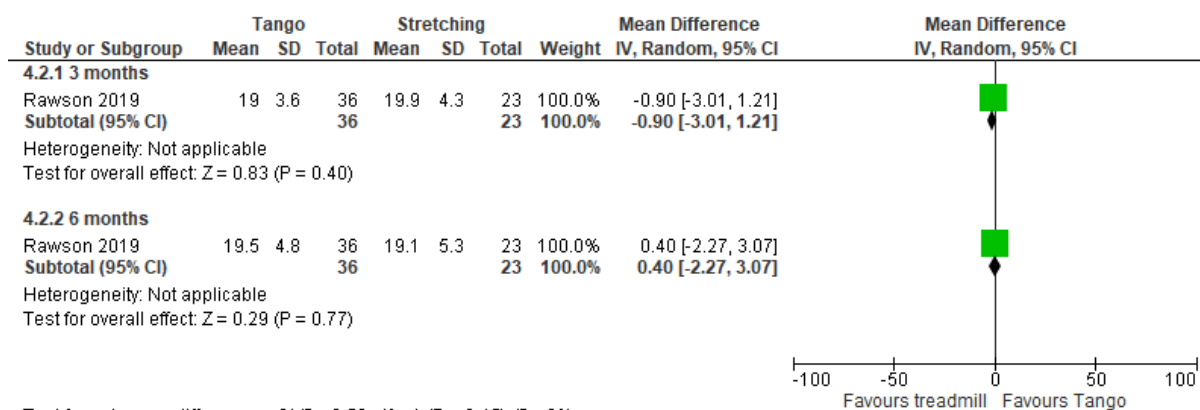


3.1.5. Quality of life: PDQ 39 score (0-100, higher score worse)

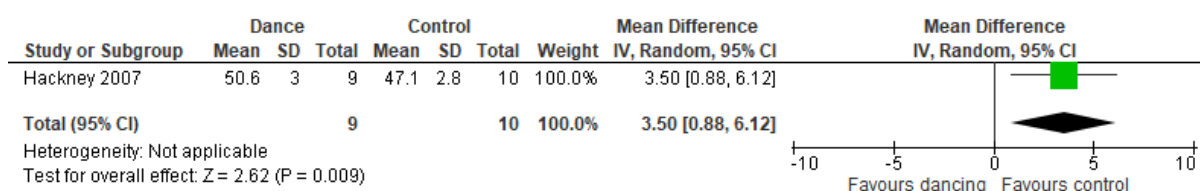
### 3.2. Tango versus stretching or flexibility exercises



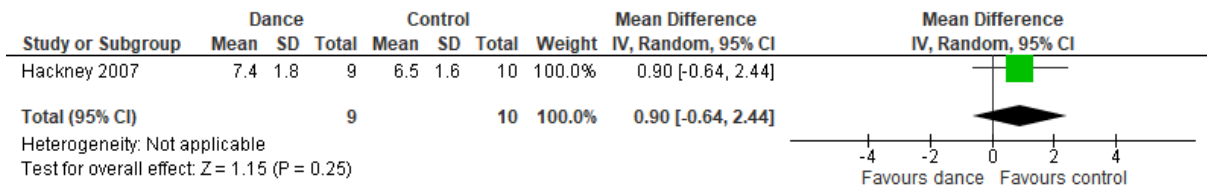
3.2.1. Disease severity: MDS-UPDRS 3 (motor examination) (0-108, higher score worse)



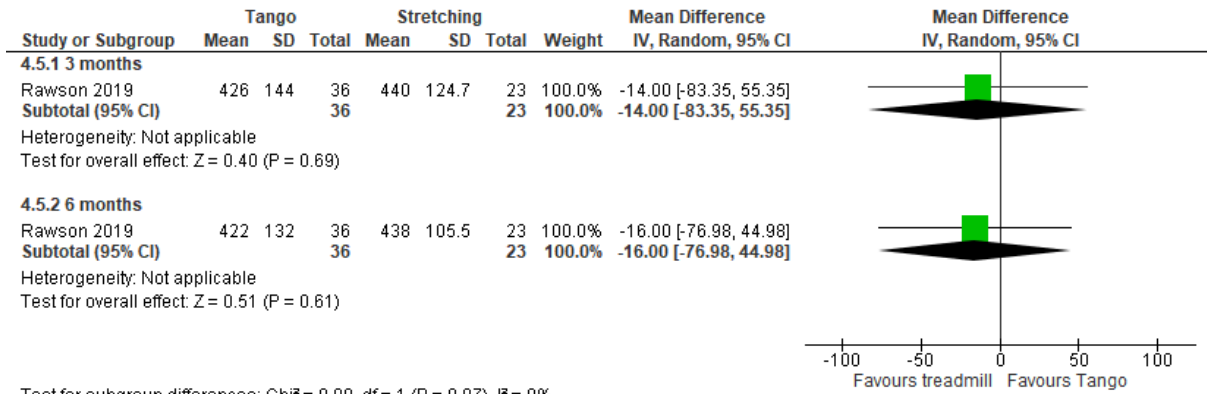
3.2.2. Balance: Mini-BEST Test (0-28, higher score indicates better balance)



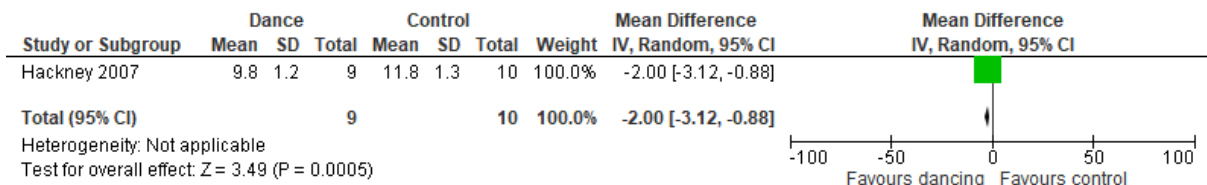
3.2.3. Balance: Berg Balance Scale (0-56, higher score indicates better balance)



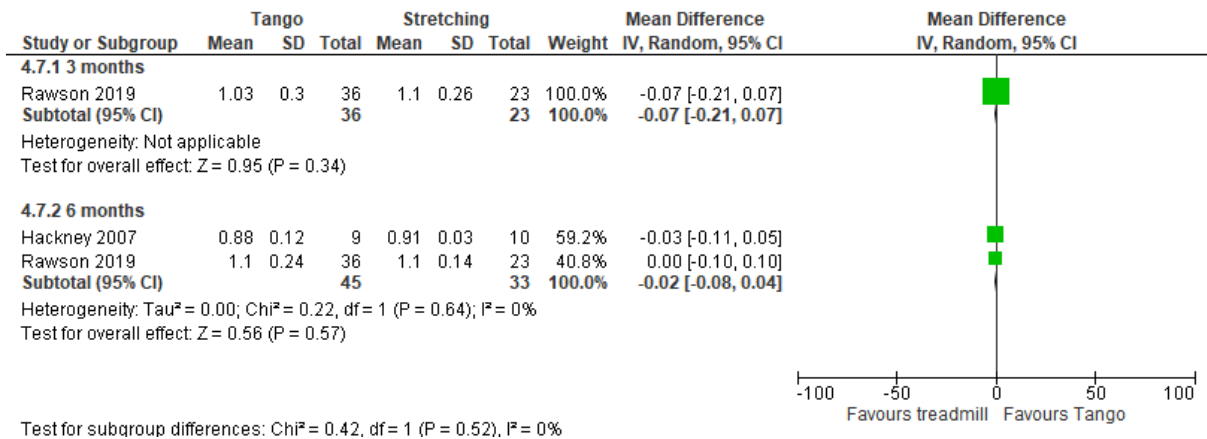
### 3.2.4. Freezing of gait questionnaire (0-24, higher score indicates more severe condition)



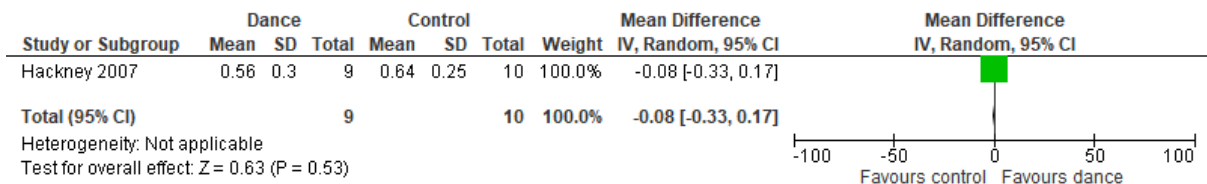
### 3.2.5. Walking distance: Six-minute walk test (meters)



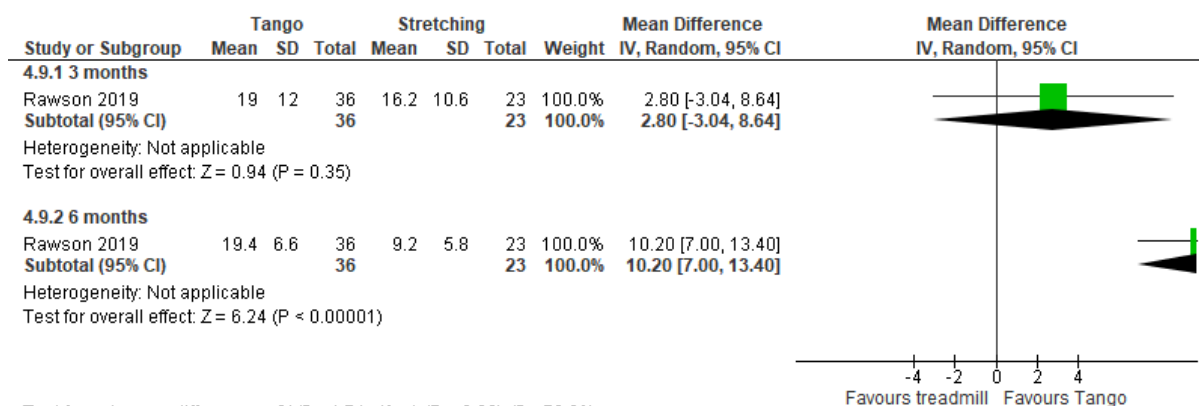
### 3.2.6. Agility: Timed Up and Go Test (seconds)



### 3.2.7. Forward velocity (meter/second)



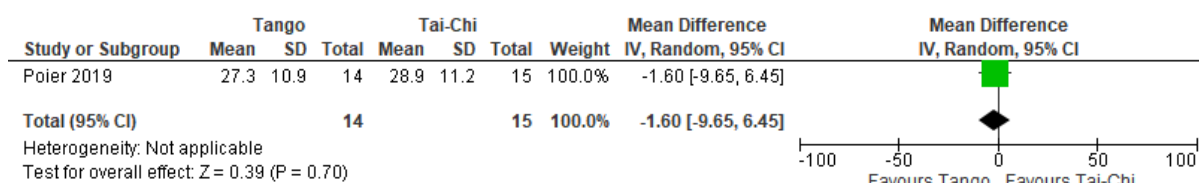
### 3.2.8. Dual-task walking velocity (meter/second)



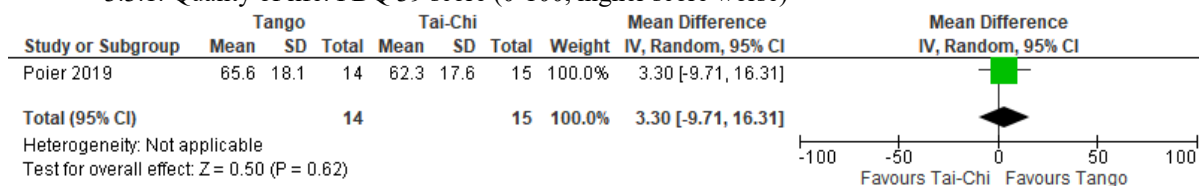
Test for subgroup differences: Chi<sup>2</sup> = 4.74 df = 1 (P = 0.03) I<sup>2</sup> = 78.9%

### 3.2.9. Quality of life: PDQ 39 score (0-100, higher score worse)

## 3.3. Tango versus Tai-Chi



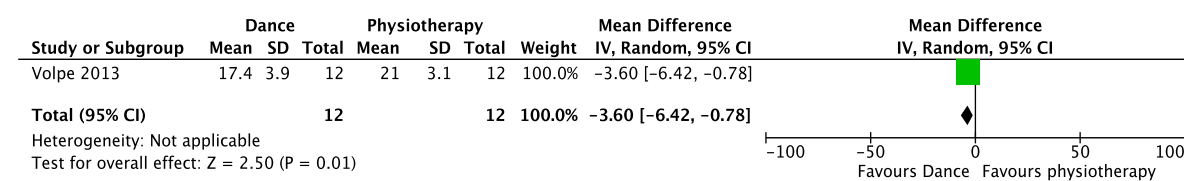
### 3.3.1. Quality of life: PDQ 39 score (0-100, higher score worse)



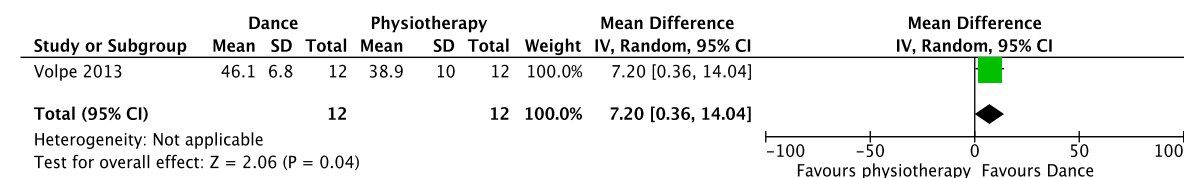
### 3.3.2. Brief Multidimensional Life Satisfaction Scale (BMLSS) (0-100, higher score better)

## 4. Dance versus physiotherapy

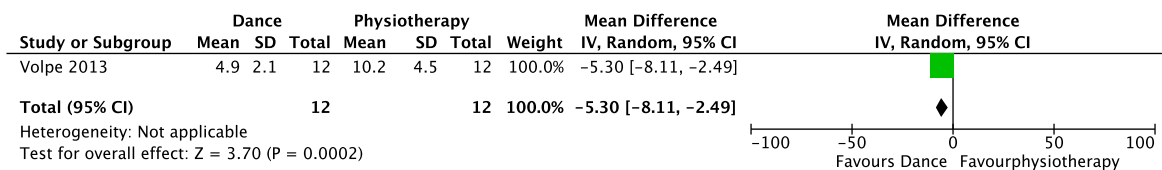
### 4.1. Irish Dance versus physiotherapy



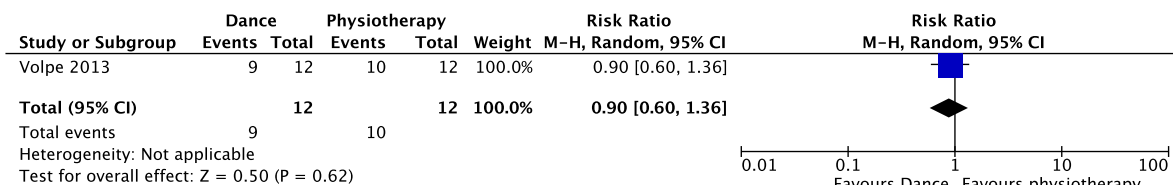
### 4.1.1. Disease severity: MDS-UPDRS 3 (motor examination) (0-108, higher score worse)



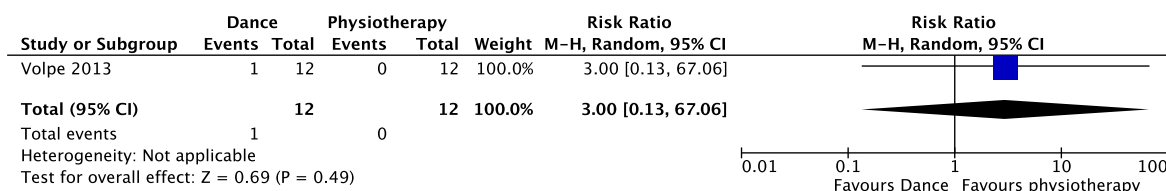
### 4.1.2. Balance: Berg Balance Scale (0-56, higher score indicates better balance)



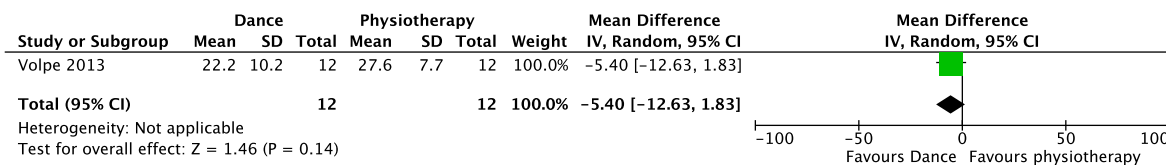
#### 4.1.3. Freezing of gait questionnaire (0-24, higher score indicates more severe condition)



#### 4.1.4. Adverse events: falls (any cause) during study period



#### 4.1.5. Adverse events: falls during the time of intervention (dancing or physiotherapy)



#### 4.1.6. Quality of life: PDQ 39 score (0-100, higher score worse)