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## **The short-term effects of dance style on mood**

**Karen McKenzie, Racheal Bowes, Kara Murray**

### **Abstract**

**Aims:** Research has suggested that dance can have psychological benefits. We explore whether dance has a greater impact on mood than being in a control group and whether the impact of dance on mood differs depending on the type of dance engaged in.

**Methods:** 82 participants (4 males, 78 females), recruited from dance schools in England, completed a mood questionnaire before and after an intervention of ballet, tap or a period of waiting (control).

**Results:** Dance group status and age significantly predicted change in positive mood after the intervention, with older age and being in the dance group predicting increased scores. There was no significant difference in positive mood change scores between those attending ballet compared to tap.

**Conclusion:** The results suggest that engaging in tap or ballet, in combination with older age predicts greater psychological wellbeing.

**Key words:** Dance styles; positive affect; negative affect

### **Background**

The restrictions associated with Covid-19 has resulted in people find new ways to exercise at home, one of which has been dancing. Dancing can be tailored to the physical ability and fitness levels of most people, meaning that the even those at most risk of Covid-19 can follow NHS advice to engage in 'light exercise at home.' (<https://www.nhs.uk/conditions/coronavirus-covid-19/advice-for-people-at-high-risk/>)

Research, including recent systematic reviews, into the benefits of dance have found positive effects including on physical function and psychological wellbeing, in healthy adults (e.g. Liu et al 2020), children with disabilities (May et al 2019) and harder to reach populations (Murrock and Graor 2014). Dance also seems to have psychological benefits, such as improvements in mood for groups of different ages (Anderson et al 2014, Crumbie et al 2015) and with different conditions, such as Parkinson's disease (Lewis et al 2016). Dance has also been developed into specific therapeutic approaches e.g. Dance Movement Therapy, which has been found in a recent meta-analysis to be effective as an intervention for those with mild to severe depression (Karkou et al 2019).

Overall, however, the methodological quality of the studies in this area varies, with many provide only limited details about the intervention (see Karkou et al 2019) and little is known about whether the effectiveness of interventions differs according to the type of dance style used. This is despite the fact that dance can vary in intensity, tempo, movements and rhythm. Of the limited research exploring the effect of different types of dance styles on mood, an early study by Lane and Hewston (2003) found that a more dynamic dance style led to reports of increased 'vigour' i.e. alert and energetic mood, although the sample size was small and comprised professional dancers. Rokka et al (2010) compared the effect of participating in a single high and medium intensity dance session on the mood of a healthy, general population sample who had previously engaged in dance on a regular basis. The authors found that both types of dance resulted in improvements in tension, depression, aggression and energy, although the higher intensity dance sessions resulted in greater levels of improvement. Neither study included a control group. The present study aims to add to this small body of research by exploring a. whether dance has a greater impact on mood than being in a control group and b. whether the impact of dance on mood differs depending on the type of dance engaged in.

## **Methods**

### *Design*

Ethical approval was granted by the first author's university ethics committee. The study compared the mood scores of participants, who were taking part in two different styles of dance (ballet and tap) and a control group. Mood was measured both before and after the intervention (an hour-long dance class or hour-long wait) using the Positive and Negative Affect Schedule (PANAS) Mood Questionnaire (Watson et al 1988).

### *Participants*

Participants, aged 18 years or above, were recruited from dance schools and clubs in the Midlands and the North East of England. Potential participants were provided with information about the study and provided written consent if they wished to take part. A total of 82 people participated, of whom 78 were female. The mean age was 28.6 years (SD = 14.2, Range 18-74). Twenty-nine people participated in the ballet dance, 29 in the tap dance condition and 24 were in the control condition.

Those in the dance conditions already took part in that particular dance class. Those in the control condition did not participate in dance but waited for an hour-long period in a similar environment to which the dance participants were recruited e.g. the dance school waiting room. Those with a current or previous diagnosis of a mental health issue that may have an effect on mood, such as anxiety or depression were excluded.

### *Materials*

Participant mood was measured using the PANAS. This is a 20-item measure used to calculate both positive affect (e.g. excited, active) and negative affect (e.g. upset, guilty) scores over the short term and has good reliability and validity (Crawford and Henry 2004, Ostir et al 2005). Scores can range between 10-50, with a higher score on the positive affect scale indicating a more positive mood state and on the negative affect items, a lower score indicating less of a negative mood state.

Participants also provided demographic information.

## Analysis

Change scores were calculated by subtracting affect scores after the intervention with scores obtained before. Two multiple linear regression analyses were run to explore whether group status (engaging in dance classes or not) predicted change scores in positive and negative mood.

## Results

Table 1 illustrates the mean and standard deviations for the mood scores before and after the intervention.

*Table 1. Table displaying means and standard deviations for Positive Affect and Negative Affect mood scores before and after intervention.*

<b>Positive Affect Scores</b>			
	Ballet (n=29)	Tap (n=29)	Control (n=24)
Before	30.55 (5.40)	32.48 (7.49)	33.29 (9.13)
After	34.28 (6.65)	37.00 (7.53)	34.96 (10.73)
Change scores	3.72 (6.06)	4.52 (5.99)	1.67 (6.24)
<b>Negative Affect Scores</b>			
Before	12.83 (3.29)	12.28 (3.51)	13.96 (5.83)
After	11.31 (2.38)	11.52 (2.92)	12.54 (4.97)
Change scores	-1.52 (2.47)	-7.6 (1.82)	-1.42 (4.34)

The results from the multiple regression analysis, with age and dance class as predictors and change score for positive affect indicated a significant model ( $F(2, 47) = 14.65, p = .02; R^2 = .271$ ).

Both age and dance class status predicted positive affect change scores (Age:  $\beta = .220, p < .001$ ;

Dance class status:  $\beta = -2.23, p = .001$ ). This indicates that age was the largest contributor and that

engaging in some form of dance resulted in greater positive mood than being in the control group. No significant model was found for negative affect change scores. A one way ANOVA found no significant differences between the ballet and tap dance groups for positive ( $F(1,56) = .251, p = .618$ ) or negative affect ( $F(1,56) = 1.77, p = .189$ ).

## **Discussion**

The current study aimed to investigate the effects of different dance styles on short-term mood. The results indicated that that engaging in either dance or ballet resulted in greater positive mood than being in the control group, although age was a stronger predictor in the model than dance group status, with positive affect increasing with age. Previous research has indicated dance can be of benefit to groups of differing ages (Anderson et al 2014, Crumbie et al 2015) and in our own study the ages of participants ranged from 18 to 74 years. This suggests that dance could have psychological benefits for people of all ages, but that it may be of particular relevance to older people, particularly if Covid-19 places restrictions on the availability of other forms of exercise for them.

No significant differences in mood were found when comparing the two dance styles of ballet and tap. Previous research comparing different dance styles has found that the more dynamic, higher intensity style resulted in greater reported psychological benefits (Lane and Hewston 2003, Rokka et al 2010). It may be that, in the present study, tap dancing was not sufficiently more 'dynamic' than ballet to result in a significant difference in the mood of participants in the two different dance groups.

The results also indicated that engaging in dance was not predictive of changes in negative mood. This may be because all groups had relatively low negative affect scores at baseline, meaning that there was less scope for change after the intervention. It is also likely that the control group had a number of parents waiting for their children to finish a dance class. As such they may have socialised with other parents during the one hour wait, which contributed to their levels of

wellbeing. Social interaction, even with those with whom we are not particularly close, has been found to have a positive impact on psychological wellbeing (Sandstrom and Dunn 2014).

#### *Implications for mental health nursing practice*

The results have a number of implications for the practice of mental health nurses. As a mental health intervention to improve mood, dance is accessible to a wide range of people. It can be tailored to take account of the individual needs of the person, such as fitness levels, physical disabilities or communication difficulties. It does not require expensive equipment and offers a structure around which additional interventions can be introduced e.g. encouraging social interaction through group dancing (Ravelin et al 2006). While specific Dance Movement Therapies require additional expertise and training (Association of Dance Movement Psychotherapies, n/d), dance as an intervention to improve mood, provide pleasure, and increase physical activity is available to all mental health nurses.

This may be particularly relevant in light of the recent emphasis on the importance of social prescribing as a means of improving physical and mental health. Social prescribing involves using a range of non-medical approaches and engagement in activities, of which dance is commonly used. Dance is offered as part of both 'Arts on Prescription' and 'Exercise on prescription' social prescribing programmes (Chatterjee et al 2018). While social prescribing is often associated with primary care services, research suggests that primary care staff may not be best suited for this role because of the need to keep up to date with the wide range of community resources and activities in their area and the extent to which these match the needs of their patients (Thomson et al 2015). It is suggested that professionals working within mental health services, such as mental health nurses may be well placed to offer social prescriptions, such as dance, in conjunction with more standard therapeutic interventions. This is because they will have greater knowledge of the mental health needs and risk factors of the specific individuals (Thomson et al 2015). Indeed, it is becoming more common for health professionals, such as nurses to provide social prescriptions (Chatterjee et al 2018).

Research suggests that dance may also offer a way for some people with mental health difficulties to experience a sense of freeing up their minds and an opportunity to escape their immediate concerns for a period (Frogitt and Little 2012). Many people with mental health difficulties experience self-stigma (Mills et al 2020). Dance, as a socially prescribed intervention may help reduce this, by offering an activity that is not immediately associated with an illness or pathology model of mental health, however further research is needed to confirm if this is the case.

### *Limitations*

The study did have limitations. Only four participants were male, meaning that the generalisability of the results to men is limited. There is some evidence that males who engage in some forms of dance, such as ballet, can face stigma (Clegg et al 2019) which may be a factor that influences the effect of dance on mood in this group. We did not explore the influence of other factors related to the dance class on mood, such as the differences in the teachers in each class. It may be that the extent to which the teacher structures and motivates the class impacts on mood. Further research is needed to explore this.

The study also focused on those who were attending dance classes in two specific dance styles and the extent to which the results would generalise to those using different dance styles or dancing informally without using a particular style is unknown. In particular, those dancing at home on their own during the Covid-19 restrictions may experience a number of differences to the participants in our study, such as the lack of social interaction with others in the class and more limited space to move about in. This indicates a need for further research to explore the impact of such factors on the relationship between informal dance and mood. Finally, the study used pre-existing groups, therefore, those who have already been dancing for a number of months or years may not experience the positive mood benefits of dance as markedly as those who are new to it.

### *Conclusion*

The Covid-19 pandemic has placed restrictions on the range of exercise and activities that people can engage in. Older and more vulnerable groups face longer and greater restrictions. Dancing is an activity that can be adapted to suit most groups of people and which generally does not require specialist equipment. We found that engaging in two types of dance – ballet and tap- combined with age, was associated with improved positive wellbeing in the short-term. The results suggest that dance may offer a way of promoting a more positive mood, particularly for those who are currently restricted to exercising at home.

<b>Implications for Practice</b>
<ul style="list-style-type: none"><li>• Dancing has emerged as an activity that people are engaging in during the period of social isolation and distancing.</li><li>• Our research suggests that taking part in dance classes, in combination with older age has psychological benefits as it increases short-term positive mood.</li><li>• The results may be of benefit to staff when considering how best to promote the psychological wellbeing of those they support.</li><li>• Mental health nurses may wish to consider offering dance as an addition to more traditional therapeutic approaches</li></ul>

**Conflict of interest:** None

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