Assessing the impact of community dance on physical health, psychological wellbeing and aspects of social inclusion

Drawn from the findings of Sanna M. Nordin, PhD and Cinzia Hardy, MSc
Dance is increasingly visible on the government’s agenda for increasing the populations’ levels of physical activity. For instance, a recent review of arts-based health practices published by the Department of Health (DoH), recommended that:

Arts and health initiatives should be “firmly recognised as being integral to healthcare provision and healthcare environments.” (Review of Arts and Health Working Group for the DoH, 2007, p. 7).

Be Active, Be Healthy (2009), the new government plan for getting the nation moving, also makes a strong case for the inclusion of dance alongside other forms of physical activity in society. Be Active, Be Healthy (2009) identifies issues around physical activity for the young, the elderly, the able bodied and disabled. It further considers issues around ethnicity and suggests how to best respond to those for whom inactivity is putting their health at risk. Such considerations are vital, for the problems of inactivity are not restricted to any one particular group in today’s society, yet the needs of each group may be quite distinct. Among those considered hard-to-reach in terms of health are young people, older people, persons with disabilities, and some Black and Ethnic Minority (BME) populations.

While the groups highlighted above are in many ways distinct, it has been suggested that they may all enjoy, and benefit from, participation in dance. Indeed, to quote former ministers for public health (Caroline Flint) and for culture (David Lammy) in their foreword to Arts Council England’s (2006) document Dance and Health - the benefits are for people of all ages:

Efforts to improve health and well-being need to reach everyone in our society. Anyone can dance and enjoy dancing – young or old, disabled or non-disabled. The vibrant range of styles drawn from different cultures gives dance an impressive reach in our multicultural society. Dance also has a long history of successfully working with hard to reach groups and building a sense of social cohesion within communities.
Dance 4 Health

What were the project’s aims?

The aim of the Dance4Health project was to assess whether creative dance, delivered within a community setting, could impact on the physical health, psychological wellbeing and aspects of social inclusion for participants.

Seven projects were delivered across Warwickshire over a nine month period, running from April to December 2008. Each was developed in partnership with other organisations or agencies, and with a particular focus on meeting the health needs of specific groups in Warwickshire. As a result each project, artist and client group was unique, involving individuals or communities from five distinct cohorts:

- Young People (predominantly girls aged 11 – 15)
- Older People (Aged 50+ and employed in manual, sedentary work)
- Frail Older People (The initial intention was to focus on people with Alzheimer’s and their carers but in reality the recruited participants consisted largely of frail elderly people, among whom there were two Alzheimer’s sufferers)
- BME Community (older Muslim and Hindu women aged 50+)
- Adults with physical and/or learning disabilities and their carers in an integrated project with others interested, recruited from the general public.

These groups are described further in Table 1, below.

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<tbody>
<tr>
<td>Dance artist</td>
<td>Fergus Early &amp; Manjit Kaur &amp; Amanda Stephenson</td>
<td>Nikki Smedley</td>
<td>Kath Kimber-McTiffen</td>
<td>Beverley Drew</td>
<td>Bruce Tetlow</td>
<td>Louise Katerega</td>
<td>-</td>
<td></td>
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<td>Dance form(s)</td>
<td>Creative</td>
<td>Bhangracise</td>
<td>Various, incl. contemporary &amp; street dance</td>
<td>Salsa/Latin American</td>
<td>Contemporary/ Creative</td>
<td>-</td>
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<tr>
<td>Sex (% female)</td>
<td>86.4%</td>
<td>96.9%</td>
<td>100%</td>
<td>90.5%</td>
<td>100%</td>
<td>40%</td>
<td>78.8%</td>
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<tr>
<td>Average age</td>
<td>73.17</td>
<td>61.61</td>
<td>13.77</td>
<td>13.27</td>
<td>51.03</td>
<td>37.70</td>
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Getting started …

In developing the Dance4Health project, County Arts Service worked with a range of health, community and voluntary sector, dance and local authority partners. Following initial discussions with the Primary Care Trust (PCT; specifically, the public health officer), Health and Wellbeing Forums (HiWeb, linked to Warwickshire’s Local Area Agreements), Adult Social Care (WCC) and Dancescape (a sub-regional dance development programme in Coventry, Solihull and Warwickshire) a number of recommendations were made as to the development and delivery of the project. During the research and development phase (April – November 2007), the project developed into two key areas of delivery: core and strategic development with an aim of sustainability, profile and long term impact; and local project delivery, to involve responding to local/neighbourhood health issues and working in partnership with local agencies and organisations.

From these discussions, and further development work, seven projects emerged. A lead dance artist was appointed to manage and lead each of the projects, as well as support the research elements of the Dance4Health project as a whole. All seven projects began with a series of ‘taster’ sessions, often in different geographic locations in order to give a broad range of participants the opportunity to take part (for example in North Warwickshire 10 taster sessions were held in five venues across the borough including a school, a youth project and the pupil referral unit). From these sessions a regular programme of dance workshops were identified and timetabled. All seven projects completed a minimum of 10 regular sessions, with some projects still continuing a year later. For the purposes of the research, however, the 10-12 week durations initially conceived were evaluated. In summary, each project covered three stages of development and progress:

- **Taster sessions.** Allowing each identified group to access at least two workshop sessions with the lead artist as a way of introducing them to the projects that were to be offered.
- **Workshops.** A series of regular classes or workshops over a 3 - 6 month period, led by the lead artist and supported by the mentored artist.
- **Exit strategy.** A period of partial subsidy/support for each group to assess the long term sustainability and/or development of the group.
Building in the research process

Participants were made aware that their dance workshop was part of a broader dance for health research project, and were asked to complete voluntary health questionnaires and take part in fitness testing as part of the project. A combination of quantitative and qualitative measures and a longitudinal design were used. Participants completed quantitative measures at baseline, midpoint (half-way through a project) and endpoint. Focus groups were held at the end of projects.

Physical Fitness Tests (Health Checks)
To get a more objective measure of health improvements, a selection of participants were invited to participate in physical fitness tests (called health checks) at a local college. Conducted by a trained professional at baseline and endpoint, the health checks comprised the following tests:

Body Composition
Height and weight
As well as enabling measures of any weight change, these measures enable calculations of body mass index (BMI), an indication of whether a person is within the healthy range of weights for their height.

Body fat percentage
Although BMI is an indicator of healthy weight, measures of body fat percentage are considered more valuable because BMI does not account for what proportion of body weight is fat, as compared to muscle.

Cardiovascular Fitness
Resting heart rate
A reduction in resting heart rate over time is considered indicative of an improvement in fitness.

Blood pressure
Participants’ blood pressure was measured.

Lung function
A measure of participant’s maximum speed of expiration or peak expiratory flow rate.

Flexibility
Flexibility was captured using the sit-and-reach test, a common measure of the flexibility of the lower back and hamstring muscles.
Project Outcomes

The evidence collected clearly indicated that positive changes occurred within the Dance4Health projects from baseline to endpoint. These included, but were not limited to:

- Improvements in **physical health** such as improved lung function and improved flexibility.

- Improvements in **psychological wellbeing** such as the experiencing of more positive personal feelings of energy, absorption (feeling deeply involved in activities) and calm.

- Improvements in **social inclusion** such as community helping, altruism, and perceptions of other people as being fair and trustworthy.

Additional benefits were also evident, primarily in the following areas:

- High levels of **enjoyment** and **intrinsic motivation** for taking part in dance and, for some, additional physical activity outside the projects. In particular, participants reported consistently positive attitudes towards dance as an activity both for instrumental reasons (e.g. to get fit) and as a pursuit enjoyable in its own right. Presumably as a result of this enjoyment and perceived benefits, participants reported a desire for projects to continue in the longer term.

- Very high levels of **social benefits**. For example, there were a vast number of examples of new friendships and meaningful belonging. Such social motives and benefits were not secondary but something intrinsic to the projects’ appeal, a main reason why people stayed involved in the projects, a main source of enjoyment, a benefit in itself, and a key component of health, given that social support bolsters health in all age groups.
Outcomes for Physical Health

Resting heart rate
Resting heart rates overall ranged from 53 to 111 and there was a marginally significant decrease from baseline to endpoint for the 37 individuals who provided data at both time points:

Resting Heart Rates: Marginal Improvement

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Baseline                  Endpoint
53                       53
63                       63
73                       73
83                       83
93                       93
103                      103
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Resting heart rate is an indicator of cardiovascular fitness (stamina) and there were several examples of improvements in stamina during the focus groups:

“Stamina-wise, we worked with carers ... I think they feel they are on the go all the time so they were like ‘oh, we’re quite fit we are, we look after people so we’re the fit ones’ ... I’d put the music on to do a Cha Cha Cha and I’d have to turn the music off ‘cause the stamina just wasn’t there...their perception of their fitness was totally different from the reality. Now, I can keep the music on for the whole of the session.”

(Dance artist)
**Lung function**
Lung function scores overall ranged from 130 to 580 and there was a statistically significant increase from baseline to endpoint for the 33 individuals who provided data at both time points:

![Lung Function: Improvement](image)

**Flexibility**
Hamstring flexibility was not measured for all fitness test participants because some older persons were considered at risk of injuring themselves if being asked to sit on the floor. For those who did undertake the test, scores overall ranged from 0 (being able to touch the wall, i.e. the maximum [best] score) to 26 centimetres away from the wall. There was a statistically significant improvement (i.e. decrease in distance away from wall) in flexibility from baseline to endpoint for the 33 individuals who provided data at both time points:

![Hamstring Flexibility: Improvement](image)
There were also numerous examples of flexibility improvements in the qualitative findings, perhaps especially for the older women. For instance, one woman was reported to have 40 degrees more movement in her arm and now hopes to be able to put on her own shoes. Another focus group finding reported on flexibility more generally:

“We felt really good...we had never done it before but this has really given some good benefit, like movement of joints and stiffness is gone.”

(Older Asian women participants)

This was the case even for those who had very limited movement and who had been advised against dancing by their GP:

“I had a heart attack and rheumatic pain every day. My legs are very stiff, my arms are very stiff. I ask doctor, can I exercise? He said “you cannot stand up for long”. I said “I can sit down and move”. He said “alright”. I did it, look! My arms used to go up to here and now, look, I can move this side like this (showing how high she can move her arms over her head).”

(Older Asian woman participant)

Additional Physical Health Benefits
Some interviews resulted in qualitative evidence that there had been health benefits that exceeded those captured through the fitness tests. For instance, one participant was said to have experienced a decrease in pain:

“F has been experiencing back pain by the shoulder blades and had visited the doctor on occasions for four months before the dance project. Now, after the eight weeks of our dance sessions the pain has gone and she has stopped taking painkillers.”

(Extract from dance leader’s reflective diary)
Conclusion

The aim of this summary was to outline the evaluation of Dance4Health, a set of seven community dance projects. A mixed methodology informed by dance science was used. Specifically, health was seen as comprising aspects of physical health, psychological wellbeing and social inclusion, with benefits being evident for participants in all three areas. For instance, participants recorded improvements in lung function and flexibility (physical health), feelings of energy, absorption and calm (psychological wellbeing), and community helping, altruism, and perceptions of other people as being fair and trustworthy (social inclusion). Other social benefits were also strongly in evidence, and participants rated the dance projects as highly enjoyable and motivating. Limitations include high participant turnover and data from both baseline and endpoint was obtained from only a sub-set of the Dance4Health cohort, which means that findings may not extend to the entire group.

Altogether, it was felt that using a combination of quantitative (fitness tests, questionnaires) and qualitative (focus group) data is valuable in obtaining an understanding of whether dance can improve aspects of health, as well as how it may do so. Dance4Health may be considered a success, given that it effectively used dance to improve health among groups sometimes seen as hard-to-reach in health terms including women who are either teenagers, working in manual or routine employment or from BME communities, as well as persons who are either elderly or disabled.

The full version of the report can be found at www.warwickshire.gov.uk/countyarts or by contacting the County Arts Service at countyartsservice@warwickshire.gov.uk or calling 01926 412492. The report can be provided in large format or Braille if requested.
Dance 4 Health

Case Studies
The North Warwickshire Active Lifestyles group (NWALG), made up of representatives from North Warwickshire Borough Council, PCT, Extended Schools Team and local community and voluntary sector representatives, identified young people as priority targets for the Dance4Health programme in North Warwickshire. This group had identified, ‘significant drop out rates in North Warwickshire of young people at the start of key stage 4 (age 14) participating in sport/physical activity’. Young people were identified as a priority for support by the Borough’s Health Improvement Officer, in particular young women aged 14 – 19.

Young people were also highlighted by the Schools Sports Partnership (SSP) who was interested in supporting the project. The SSP had found that highest take up in physical activity in Secondary School involved dance, particularly street and break dance.

North Warwickshire is a predominantly rural area, with a number of former coalfield areas. In planning the project it was clear that there needed to be opportunities for young people from smaller or more isolated villages to participate. The SSP agreed to provide additional funding for the project to young people to access the project from villages across the Borough.

Based on the research County Arts Service developed a youth dance project for North Warwickshire which was led by dance artist Kath Kimber McTiffen. Kath has experience of working with young people in a variety of settings, including schools and arts venues, and leads classes involving contemporary, creative and street dance.

Ten ‘tasters’ were held during the summer of 2008 across the Borough including schools, youth clubs, community centres and pupil referral unit. These sessions were extremely popular with over 200 young people participating.

Participants were invited to attend regular sessions that were held at Atherstone Leisure Centre. A core group of young people began to attend regularly, (with an average of 8 – 10 people, both girls and boys) per workshop.

Some of the young people involved in the project reported that they had done some dancing before, often when young at private dance schools or through dance classes at school. Many were keen to learn a more recent style of dance, including street dance.

Following the first few weeks of the regular project some positive health benefits were already being mentioned by participants taking part.

“I can run faster and for longer, and I think I lost some weight”
“I feel I can do more and not get out of breath as much”

The area that appeared to have a really positive impact on the young people, was in terms of confidence and social interaction. Many talked about enjoying the sessions and felt positive about taking part,

“it’s just a load of fun”

In November 2008 a Youth Dance4Health showcase day took place with dance workshops and an informal performance of the work created to date. After the day an artist focus day took place at which it was observed by one of the dance artists:

“…in our group there was one young lady that I saw huge changes... When she first came in the body language was kind of like this (crossed arms and head looking down) and she didn’t speak much. And then today she was there giving it all she has....it’s just been a massive improvement. Her whole demeanour has changed, as has her co-ordination....she couldn’t put one foot in front of the other when she started and now…”

The group members were committed to continuing their regular sessions and, with additional support from Warwickshire County Council’s (WCC) Youth Service, the project moved to the Ratcliffe Youth Centre in Atherstone and continues to meet on a weekly basis.

The group is now known as ‘Toxic Toes Street Dance’ and, supported by Kath and Kate Wilding - WCC Youth Worker, successfully received a grant from the Youth Opportunity Fund to continue the group until March 2010, with additional funding from Dancescape. This funding has enabled the group to participate in a summer school which culminated in an arts award for all the participants.

The group are keen to continue to concentrate on street dance styles and have a good creative input into the choreography. Toxic Toes will be working to create a dance piece which they hope to enter into Youth Dance England events in the near future.
The Stratford project started with a Dance and Disability Awareness Day in June 2008, Thirty-six people attended the day to raise people's understanding of this area of dance development, and were introduced to the concept of the Dance4Health project including the possible health and wellbeing benefits of taking part. A session was also run by Louise Katerega, Creative Director of Foot In Hand Dance Company, who introduced dance for people with disabilities and led a practical session. After lunch, the participants divided into 2 groups to discuss the potential challenges, barriers and interest for a regular group (this included transportation, permissions, appropriate venues), dance styles and solutions were explored. It was also important to discuss the role of the support worker in the dance sessions (a previous project had highlighted that unless a service user needed continual 1 to 1 support, workers should be encouraged to fully participate on a regular basis with all members of the group. This enabled both care worker and service user to get the most from the dance session). It was also important that management took on board how important consistency of staff was for the confidence of the group to evolve.

Six taster sessions exploring dance from 3 geographical areas of the world – South, East and West - were devised by Louise and took place in July and early August 2008. Over 30 different people signed up for these sessions. We received some very good coverage from all the local papers and 6 non-disabled, independent women from the locality came and joined the taster sessions. The support received by services, organisations and family carers was superb – this ensured success and meant that everyone who wanted to attend and was available to do so. County Arts were (and still remain) very grateful for all this assistance and in-kind support.

Twenty people including staff, service users and 4 non-disabled, independent women from the local community aspired to attend regular sessions. They ranged in age from 25 to 60+ years and had a range of physical and learning abilities.

In mid September 2009 (six weeks after the tasters were completed) 11 people volunteered to undertake health checks (included adults with and without disabilities) the checks were given before starting their 10 week dance project with a second check after the completion of the 10 weeks. Two people were requested to visit their GP due to high / very high blood pressure, one of whom who had previously had heart attacks and was advised that their medication needed to be changed and until their blood pressure was under control they would not be able to participate.
The hour and a half dance sessions ran between September and December 2008 the participants were asked to undertake 3 staged questionnaires at the beginning, middle and end of the 10 week project. The questionnaire was also made available in easy-read format by the WCC Learning Disability Partnership to ensure that everyone who wanted to could contribute to the research.

The dance session continued to explore a range of dance styles and culminated in a dance piece ‘Around the World in 80 Moves’ which was performed and well received at the Stratford College Theatre.

The second health checks were completed by six of the original 11 people. Of the six there were some interesting changes. 4 participants had lost between 1kg to 2kg in weight but the most significant change was in their flexibility. This measurement was taken with the participant sitting on the floor with legs straight in front, feet flat against a wall. They were required to gently lean forward from the hips and try to touch the wall. The distance from the tip of the middle finger to the wall was measured - in the original reading 4 of the 6 people could not reach the wall measurements from the wall were between 4cm to 20cm. After 10 weeks one of the participants flexibility changed from 20cm to touch the wall. The other 3 people’s flexibility had also improved but not as significantly.

Over the ten weeks, casual conversation and anecdotal information revealed the following effects on the participants social health and emotional well being: One of the women cited the group as the highlight of her week “the only thing that gets me out of bed” and even attended when she was too ill (with a heavy cold) to dance so as not to let the group down before performance.

This group continues to meet on a Thursday term time only, a funding bid is being developed for Olympiad funding ‘People Dancing’ to continue the work on from January 2010.

Lastly, one group participant Suzi Miller, has joined Louise’s company Foot In Hand as a professional performer, to great success at the cultural festival attached to the 2009 Special Olympics in Leicester.
Research was undertaken with the Nuneaton and Bedworth Health and Wellbeing Forum to identify local health issues and demographic groups which could benefit from dance activities. Older people and physical activity was highlighted as one of several areas and meetings took place with the PCT Public Health Trainers and a Community Development Officer from the Nuneaton and Bedworth Healthy Living Network (who had undertaken work in this area) to identify potential interested groups building on ad-hoc work which had been done related to older Asian women and physical activity. Visits were made to several organisations and groups to identify interest and need. Bhangra (south Asian traditional folk dance) was identified as a dance form of interest to several groups from different cultural backgrounds. Taking on the general consensus and desire for the dance sessions to be lead by females, Silhouette Dance Company were commissioned to undertake the project. The Company have a strong health and fitness background which was beneficial to the project and the participants.

A variety of sessions were trialled in local schools, day centres, temples and at the Newtown Centre. Regular sessions took place in several settings for women of different ethnic backgrounds; publicity was produced in Urdu, Hindi, Punjabi, Gujarati and English, to welcome a wide range of participation. Warwickshire County Council’s Edward Street Day Centre which provides day services for older women with Muslim backgrounds took part in the project and completed the Dance4Health full programme including: health checks, dance sessions, lifestyle questionnaires and a focus group.

A female translator was provided to help some of the women answer the questionnaires which took place before commencing the sessions (benchmark) mid point and after the final session. The Translator was also contracted to support the researcher in the Focus Group.

The majority of the women wishing to participate were aged between 65 and 75 years. Eight women undertook a health check prior to and at the end of the 10 week programme. The fitness advisor recommended that 6 participants required a GPs note to enable them to participate this was due to them having a range and more than one serious medical conditions such as heart disease, breathing difficulties or diabetes.
“I had a heart attack and rheumatic pain everyday. My legs are very stiff, my arms are very stiff. I ask doctor, can I exercise. He said you cannot stand up for long. I said I can sit down and move. He said alright. I did it, look. My arms used to go up to here, and now look; I can move this side like this (showing how high she can move her arms over her head.)”

Silhouette Dance Company use Bhangra creatively and adapted the form/style to include more formal structured exercise for the sessions which they call ‘Bhangra-cise’.

Silhouette devised a 10 week dance programme which took place between April and July 2008, two dance artists ran the sessions. This enabled the dance movements to be demonstrated both standing and seated. The sessions consisted of warm-ups, sequences, interactive dance activities and cool-downs.

With a variety of mobility and health issues it is important to ensure that the pace, music and the content of the sessions enable everyone to fully participate to their own and best ability. It is very important that participants listen to their own body and if pain or breathlessness (for instance) occurs that they rest and do not try and push themselves too far.

Although 10 weeks was not a long programme there were improvements in participants’ attitude to taking part in physical activity with one member of the group walking to the centre rather than taking the bus and another re-joining the gym. There were positive comments received in the focus group regarding how participating had benefited them.
The service users spent a lot of their day seated and sedentary. It was observed that before a session the women were undertaking minimal movement and conversation and after the session the women were very animated, moving around the room and chatting.

One woman said in the focus group:

“...we used the whole body, and that moment was giving us a freshness. We were feeling really good. Good blood circulation.”

Improvements in mobility took place for at least three participants in the shoulder and knee joints and the hands. There was a slight improvement related to BMI% with a reduction for all eight participants of .01 to 1.0%. Seven out of eight women had a slight weight loss from 0.4kg with one participant losing 2.2kg within the 10 weeks. However, we are realistic and cannot categorically state that these changes are due to their participation in Bhangra-cise.

It was also observed by the dance artists that motivation to take part increased as the weeks went by. Week one the artists set up the dance space and encouraged women to move rooms for the dance session. By week 5 some service users had set the room out and were ready and waiting for the dance artists arrival. A strong relationship of trust was built in the group both between the participants and with the artists.

When asked if they have continued to dance (since the sessions had ended) one participant stated ‘I dance every night with my husband. I’m not joking, I do half an hour in the evenings. Sometimes I do some of the same dance exercises [I learned here], sometimes not. I put some music on and I start to do the exercises.

I have to look after myself. People can be laughing but I have to look after myself.’

Another participant said via translator:

“...that whatever we learned here, and when we go back home, if there is a function or any party, then we show all these dance steps to them - we are always learning something new, something different.”

There was a general consensus that the participants enjoyed the sessions and were keen for them to continue.

Nuneaton and Bedworth Healthy Living Network have recently heard that they have been successful in securing funding to continue the work with Silhouette Dance Company in Nuneaton. The proposal is to run a year long programme at The Newtown Centre where Bhangra-cise sessions will be part of a wider package of health, wellbeing and eating advice, weight-checks and healthy lunches. Participants of the Dance4Health project will be welcome to participate.
Acknowledgements

County Arts are grateful to the Dance4Health participants who completed lengthy questionnaires within their dance classes – we agree that dancing itself is more fun than ticking boxes and circling numbers!

We would also like to thank the dance artists for their collection of questionnaire-based data within their dance classes, and for contributing to a focus group. Special thanks to the artists and mentees who also sent us their thoughts, comments, diaries, and other feedback.

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Project evaluators:

Sanna M. Nordin, PhD¹ & Cinzia Hardy, MSc²

¹ Independent Evaluator and Research Fellow, Laban, London, UK
² Independent Dance Scientist and Arts Evaluator