The Arts in Psychotherapy 52 (2017) 10–23

Contents lists available at ScienceDirect

The Arts in Psychotherapy

Research article

Active factors in dance/movement therapy: Specifying health effects of non-goal-orientation in movement

Solveig Wiedenhofer*, Prof. Dr. Sabine C. Koch

SRH University Heidelberg, Department of Therapeutic Sciences, Maria-Probst-Str. 3, 69123 Heidelberg, Germany

ARTICLE INFO

Article history:
Received 31 January 2016
Accepted 29 September 2016

Keywords:
Dance movement therapy
Dance and health
Perceived stress
Well-being
General self-efficacy
Body self-efficacy
Goal-directed movement
Improvisation

ABSTRACT

This study addresses the impact of non-goal-directed improvisational dance versus goal-directed improvisational dance in reducing perceived stress and improving well-being, general self-efficacy, and body self-efficacy. Fifty-seven students participated either in the experimental condition ($N = 30$) or in the control condition ($N = 27$). Participants in the experimental group (EG) performed non-goal-directed improvisational dance movements, while participants in the control group (CG) improvised to the same music in a goal-directed way with the help of colored paper sheets serving as targets. In support of the hypothesis, perceived stress decreased ($p < 0.05$) and body self-efficacy increased ($p < 0.05$) in the EG vs. the CG. At post-test, all outcomes improved within the EG (perceived stress and well-being: $p < 0.001$; body self-efficacy: $p < 0.01$; self-efficacy: $p = 0.001$); and within the CG perceived stress decreased ($p < 0.01$), and well-being ($p < 0.001$), and self-efficacy ($p < 0.05$) increased. Results suggest that non-goal-directed vs goal-directed improvisational dance is effective in improving body self-efficacy, and is superior in reducing perceived stress. Moreover, improvisational dance generally seems to have beneficial effects on health-related psychological outcomes. Future studies should investigate implications for clinical settings, identify other active factors of dance therapy, and anchor them theoretically.

Many people make use of the positive effects of dance intuitively. They attend dance classes, go out for dancing, or dance through their living rooms and kitchens, when they feel like it. The last case is the clearest example for people dancing out of an inner impulse without any social motivators. Do people dance in order to express themselves? Hanna (1995) stated that dance is a multisensory experience and is thus able to provide a "more complete mode of self-expression than speech or writing" (p. 324). She depicted that dance addresses the person on several levels, namely the bodily, emotional, cognitive, and cultural dimension. Dance supplies us with ways of feeling our physical self and detecting solutions for problems in everyday life (Hanna, 2006). Therefore, it appears to connect us to our creativity, which may enable us to discover new possibilities of posture and moving. This again, our body posture and the way we move, affects how we perceive the world around us and how we feel, which is continuously being uncovered by the growing research in the field of embodiment (Fuchs & Koch, 2014; Koch, 2011a, 2013, 2014; Koch, Morlinghaus, & Fuchs, 2007). We can thus hypothesize that our natural impulse to dance arises from some form of healthy instinct.

According to phenomenologist Maxine Sheets-Johnstone (2010), dance is a capacity with evolutionary roots, with movement at its core, as a sign of life, of feeling alive and of agency (Sheets-Johnstone, 2010). In 1930, Erwin Straus, a German phenomenological psychiatrist who emigrated to the US during World War II, made an early differentiated attempt to descriptively define what constitutes dance movements as such. He opposed dance movements to the movements of marching soldiers, which he qualified as directed, counted, and measured (gerichtet, gezählt and gemessen; Straus, 1930; translation by the authors). Following Straus, *dance movements are non-directed and non-limited (Straus, 1930). Non-limited, as Straus defined it, refers to the components of space and time. Dance is not limited by the space a dancer moves in, because it has no specific endpoint and can surpass the room as such. Neither is dance limited by time, because – according to Straus – dance terminates only by exhaustion or ecstasy. Moreover, Straus (1930) described the increased involvement of the torso as a determining factor of dance, which can be found in all kinds of dances. He depicted that the torso, in dance, is leaving the vertical axis. This moves the body into the surrounding space (Umraum) in all possible directions, without aiming for a specific goal.* Erwin Straus was a psychiatrist who emigrated from Berlin to Kentucky, when the Nazi regime was gaining power in Germany. On arrival in the US he worked in the Lexington Veteran Administration Hospital. He was a phenomenologist devoted to the investigation

* Corresponding author.
E-mail addresses: solveig.wiedenhofer@web.de (S. Wiedenhofer), sabine.koch@hochschule-heidelberg.de (Prof.Dr.S.C. Koch).

http://dx.doi.org/10.1016/j.aip.2016.09.004
0197-4556/

of human expression and experiencing and as such one of the most influential clinical body-mind philosophers of the 20th century. His approach can be viewed in line with, for instance, that of US-based phenomenologist Eugene Gendlin (1967).

Dance/movement therapy (DMT) is an emerging academic discipline. As such, further research to examine its active factors is needed. To properly employ elements of dance in a therapeutic context, we need to investigate what exactly is therapeutically effective in dance and how we can apply it to promote health. Many approaches in DMT foster dance movement in the sense of Straus (non-directed, non-limited). Hanna (1995) stated that dance can help to escape stress by diversion as well as by figuring out ways to better handle stressors. Bräuninger provided a large scale multicenter study, which showed that DMT group treatment is effective in improving stress management and diminishing psychological distress with lasting effects (Bräuninger, 2012, 2014). The original question arising for us was thus whether non-directed, non-limited movement – dance movement according to Straus (1930) – has different effects on body and mind than directed, counted, and measured movement – non-dance movement according to Straus (1930).

A pilot study was conducted to test aspects of goal direction, and non-goal direction on a range of parameters. Participants moved either in a goal-oriented way that is, directed, counted and measured/non-dance-movement, or in a non-goal-oriented way through improvisational dance which was non-directed and non-limited. The terms were defined in the following way: Goal-orientation in movement meant that the movement had an action-related purpose, e.g., getting somewhere, getting something, etc.; goal-direction in movement meant that the body or parts of the body are concentrated on a (material) goal. The latter should not be confused with the Laban nomenclature, where direct and indirect refer to a movement quality. In the pilot study, we found reduced stress, increased well-being and increased body self-efficacy, only as a result of non-goal-orientation/dance movement in contrast to goal-orientation/non-dance-movement (Wiedenhofer, Hofinger, Wagner, & Koch, 2016). However, in this pilot study, we varied all three of Straus' defining factors of dance movement vs. non- dance movement together (directed, counted, and measured), for the sake of keeping their unity intact. Thus, it remained unclear, whether it was the combination of all factors or just of one specific factor causing the effects. Findings from mirror neuron research (Gallese, 2001) and dynamic systems research (e.g., Thelen & Smith, 1994; Thelen, 2000), suggest that non-directedness versus directedness of movement may be a strong candidate for the crucial factor of the effect.

Goal-direction is a crucial aspect of perception, because it helps us attend and make predictions. In mirror neuron research (e.g. Gallese, 2001; Gallese, Fadiga, Fogassi, & Rizzolatti, 1996), Gallese and colleagues showed that so-called mirror neurons located in the ventral premotor cortex, area F5a, of macaque monkeys, show a firing reaction in an observing agent, when a goal-directed movement, preferably by hand or mouth, was observed. Effects were less pronounced if the hand imitated the action without object or if tools were used. Ferri et al. (2015) located an area in the human brain, phF5c that is likely to be a homologue of the F5 region in the macaque monkey's brain. We cannot yet claim that mirror neurons have been found in the human brain, but Ferri's findings increase the likeliness of their existence. Now, taking into account that research on mirror neurons identified goal-direction of a movement as a determining aspect in the brain's workings (Gallese, 2001; Gallese, Fadiga, Fogassi, & Rizzolatti, 1996), we may guess that goal- direction and non-goal-direction affect body and mind in different ways.

The second research direction supporting the idea of non-goal-direction having specific effects in contrast to goal-direction is the idea of *self-organization* from dynamic systems theories (e.g., Thelen & Smith, 1994). Evidently, self-organization has more degrees of freedom when movement is free to go anywhere and the person has the possibility to find out where it wants to go when following its inherent nature. As Haken and Schiepek (2006) stated, "Perception and thinking are examples for permanent generating of order transitions. The same applies to individual and collective learning processes, and even to human development in general" (pp. 29–30, translation by the authors). Self-organization is thus a primary concept and a necessity for human beings. In our study, the goal-directed group (CG) used an external organizer, whereas the non-goal-directed group (EG) used none and relied more on self-organization.

The present study has been designed to clarify whether from the triade of factors in the independent variable of the pilot study (Wiedenhofer et al., 2016), non-goal-directedness was the decisive independent factor affecting the health outcomes in such a favorable way. Consequently, it was necessary that experimental (EG) and control group (CG) differed merely in goal-directedness. Hence, we designed both groups to be improvisational and to meet the criteria for dance as defined by Straus (1930), except for the aspect of goal-directedness in the CG.

Assuming non-goal-directedness to be the crucial aspect, we expected significant effects on perceived stress, well-being, and body self-efficacy only in the EG, as suggested by the results of the pilot study (Wiedenhofer et al., 2016). We additionally expected positive effects on general self-efficacy in the EG, because it is related to body self-efficacy and the results of the pilot study revealed a tendency in this direction. Because it is possible that the general self-efficacy questionnaire in the pilot study (ASKU; Beierlein, Kovaleva, Kemper, & Rammstedt, 2012) with only three items was not sensitive enough for our sample, we now employed a self-efficacy measure with ten items (GSE scale; Schwarzer & Jerusalem, 1999).

Based on these assumptions, we hypothesized that non-goal-directed dance improvisation is superior to goal-directed dance improvisation in reducing perceived stress and improving well-being, body self-efficacy, and general self-efficacy.

Hypotheses

1. Between-Group hypothesis: A single intervention of non-goal-directed, improvisational dance movement reduces perceived stress and improves well-being, general self-efficacy and body self-efficacy significantly more than a single intervention of goal-directed, improvisational dance movement (EG > CG).
2. Within Group hypothesis 1: A single intervention of non-goal-directed, improvisational dance movement reduces perceived stress and improves well-being, general self-efficacy, and body self-efficacy in a student sample at post-test ($EG_{t1} < EG_{t2}$).
3. Within-Group hypothesis 2: A single intervention of goal-directed, improvisational dance movement does not reduce perceived stress and does not improve well-being, general self-efficacy, or body self-efficacy in a student sample at post-test ($CG_{t1} = CG_{t2}$).

Method

Sample

Fifty-seven participants (12 men, 45 women; all Caucasians) took part in the study at SRH University, Heidelberg, Germany. The sample mainly consisted of students of different subjects at SRH University Heidelberg (M = 23.21, SD = 4.54, range 19–49). Two participants were teachers. Students' subjects were physiother-