

Adapting Dance to Complex Clinical Contexts: A Methodology Model

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The authors certify that the work presented in this paper is free from any form of conflict of interest.

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Abstract

This study aimed to document the process of adapting a dance intervention in a complex clinical setting, in order to propose a methodology that could inspire the development of other interventions in specific clinical contexts. While the content of health-related dance interventions is still relatively undocumented in the literature, the processes of adapting dance to specific situations are even less so, and rarely seem to be based on theoretical or practical guidelines. Yet the description of these processes could guide the adaptation of other interventions. The adaptation methodology described in this article is part of an embedded single-case study, where the case unit was the adaptation process of a dance group intervention and the subunits of analysis were the intervention's clinical and theoretical premises, content, and pedagogy. Participants were rehabilitation therapists (n=21), patients (n=6), relatives (n=4), and rehabilitation assistants (n=4). Data were collected through various techniques (focus groups, situational observation, pilot dance sessions, interviews, critical incidents, research journals, template for intervention description and replication/TIDieR checklist, and video recordings) to allow an iterative adaptation process. Inductive qualitative analysis revealed that the adaptations were made prior to and throughout the intervention, taking into account relevant scientific and disciplinary knowledge, as well as the different actors' implicit and explicit experiences. The intervention pedagogy focused on adapting

the dance content to meet the participants' needs while inviting them to self-adapt this content. The resulting methodology model includes four stages: preliminary design, validation with rehabilitation therapists, specific tailoring, and ongoing tailoring. Optimizing the adaptation of dance and ensuring its complementarity within a complex clinical context requires collaboration with the different disciplinary clinicians in order to offer synergistic coherence and ensure dance's contribution to therapeutic objectives.

Key points

- A relevant methodology may be required when it comes to adapting dance for specific populations and contexts.
- Dance adaptation processes warrant description so as to inform adaptations needed in other dance projects and research.
- Rigorous adaptation may be required to ensure that dance can be complementary in complex clinical contexts such as stroke rehabilitation.

Introduction

The use of dance for people with special needs has been examined in many studies, some of which have been conducted in clinical contexts.^{1,2,3} Numerous authors in the health,^{4,5} dance,⁶ and arts⁷ fields have called for better descriptions of such interventions or programs, encouraging researchers to provide more information about the dance content and pedagogy they used. Although there is a growing body of research that seeks to better describe such dance interventions,^{8,9,10} the processes by which their content is developed are rarely described. As the development of innovative health interventions increasingly relies on collaborative approaches combining interdisciplinarity and intersectorality, it becomes all the more relevant to examine our dance development processes, particularly when dance is to be integrated into clinical programs.

To support potential collaboration between dance facilitators and researchers, the International Association for Dance Medicine and Science (IADMS)'s Dance for Health Committee created a set of considerations, in the form of an infographic, for the planning of Dance-for-Health projects¹. Although the tool raises important questions to ask at the development stage, it does not provide a methodology either for development or for co-development with stakeholders who may be involved in such a project. To contribute to literacy on this topic and offer a potential complement to the

¹ <https://iadms.org/resources/dance-for-health/>

IADMS tool, this article aims to present the process followed to adapt a dance intervention in subacute rehabilitation post-stroke, in order to propose a methodology model that could guide other researchers' work.

Stroke is a disorder of the cerebral vasculature that affects brain functions. Rehabilitation is essential to reduce the effects of stroke on patients' abilities and restore their social participation. Research has demonstrated the importance of early intervention and intensity of rehabilitation (in terms of therapy hours) for optimal recovery.¹¹ However, the dose of rehabilitation is generally insufficient when compared with best practice recommendations.¹² Therefore, new intervention strategies, such as the use of adjunct or alternative therapies, should be explored to complement the active rehabilitation time provided by standard therapies.¹³ Our aim was therefore to develop a dance intervention that could offer such a complement.

Research design and participants

The adaptation methodology presented here was used within an embedded single-case study, which involves subunits of analysis within the case unit.¹⁴ The case unit was the adaptation process used in a ten-week dance group intervention in subacute rehabilitation post-stroke, while the subunits of analysis were the intervention's clinical and theoretical premises, as well as its content and pedagogy (another article describes these subunits of analysis in detail⁹).

Four categories of participants took part in the study: rehabilitation therapists, patients, relatives, and rehabilitation assistants. Participating rehabilitation therapists were members of the multidisciplinary neurology team from the rehabilitation hospital. Participating patients were adults who had recently had a stroke (≤ 25 days) and been admitted to the rehabilitation hospital. All were eligible for inclusion, irrespective of their neurological impairments. However, they had to be able to give informed consent and participate in the planned interviews in French or English, despite some communication difficulties that may have resulted from the stroke. Participating relatives were spouses or other adult family members in close contact with the patient and willing to participate in one or more adapted-dance sessions. The participation of a relative was not a criterion for patient selection. Participating rehabilitation assistants were employees of the rehabilitation hospital. They danced with the whole group and ensured the safety of the most severely impaired patients. Participation in the project was voluntary. The study had received prior ethics approval from both the university and the rehabilitation hospital and all participants signed a consent form.

(Note: the participant recruitment process is integrated into Figure 1 – in shaded text – to lighten the following sections.)

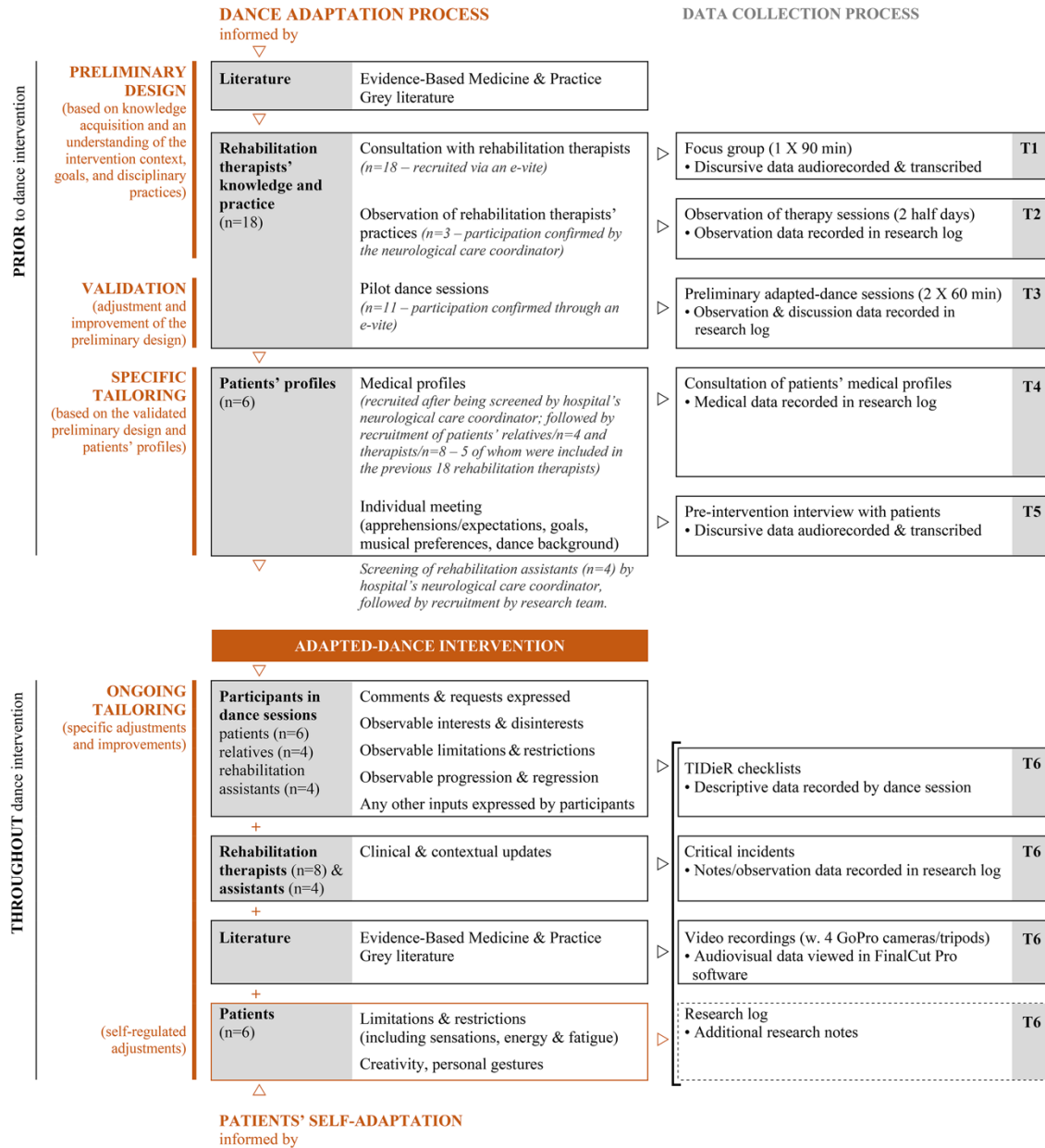


Figure 1.

Methodology

The dance adaptation process was intertwined with the qualitative data collection process. Its various stages (Figure 1, right-hand column) thus supported the adaptation of dance for stroke rehabilitation. Again, it is not so much the adaptation for stroke rehabilitation that we wish to highlight here, but rather the methodology used to enable this adaptation.

Prior to the intervention, the dance adaptation process involved a focus group held with rehabilitation professionals, observation of their practices, and pilot dance sessions with some of them. Analysis of these data led to ongoing thematization¹⁵ to identify the intervention goals, principles, and rehabilitation themes that would inform the preliminary design of the intervention and to confirm its relevance with therapists. Throughout the intervention, the dance adaptation process relied on the Template for Intervention Description and Replication (TIDieR¹⁶), an adaptation of the critical incident method,¹⁷ and on audiovisual recordings of the dance sessions using four digital cameras. Ongoing thematic analysis of the data led to the identification of effective and ineffective pedagogical modalities, ultimately to improve the intervention through an iterative process. This methodology is “unpacked” in the next sections to describe the process of dance adaptation and highlight the input of the research participants.

Prior to intervention – from generic design to specific tailoring

A total of 18 rehabilitation therapists participated in the dance adaptation process prior to the dance intervention, including physical therapists (n=10), occupational therapists (n=7), and a psychologist (n=1); 83% of them were female. Six patients (three men and three women) also took part; the mean age was 71.0 ± 9.9 years (range 59-86). The term “patient” is used here to categorize the participant, but he or she was referred to more as a “dancer” in our dance sessions. All the patients had recently suffered a stroke and were dealing with a variety of neurological sequelae. The dance facilitator was a member of the research team.

Before involving any participants, the adaptation process began with the research team members acquiring scientific and contextual knowledge about the intervention context. A cursory review of the literature (e.g. through the Stroke Engineⁱⁱ and Canadian Stroke Best Practicesⁱⁱⁱ websites) served to improve their understanding of stroke in general, to identify rehabilitation issues and principles to be considered in the preliminary formulation of the research objective (intensify rehabilitation) and its sub-objectives (foster participation/engagement and motivation), and to enable future discussions with rehabilitation professionals. It also aimed to glean any potential recommendations from the literature regarding dance for stroke. Basically, this first step involved learning more about stroke rehabilitation before meeting the professionals in the field.

ⁱⁱ www.strokingengine.ca

ⁱⁱⁱ www.strokebestpractices.ca

Next, the research team met with the rehabilitation therapists (Time 1), as shown on the far right of Figure 1 (T1, T2, T3, etc.). They informed us of the patients' range of needs and the goals most commonly set by the multidisciplinary team. They voiced their recommendations, suggestions, and concerns, identified safety measures, and provided information on the various technical aids to be incorporated into our dance sessions. They helped validate and refine the previously stated research objectives. This was followed by observation sessions of rehabilitation therapists' practices (Time 2), which allowed us to develop dance movements inspired by their work (e.g., self-assisted movements for the side affected by the stroke). Rehabilitation therapies thus influenced our dance adaptation work. We then invited the rehabilitation therapists to validate (or invalidate) the preliminary dance content proposals (Time 3) by holding two pilot dance sessions with them, thus enabling us to anticipate potential difficulties, find solutions, and develop new proposals collaboratively. This co-development stage made it possible to take advantage of the different types of professional expertise involved (physical therapy, occupational therapy, speech-language pathology, dance).

After recruiting the patients, we accessed their medical records (Time 4) to learn about their neurological sequelae. The dance facilitator then met them individually (Time 5) to inquire about their personal rehabilitation goals. She also asked about their musical preferences, apprehensions and expectations regarding dance, hobbies and art-related practices, and any other interests that might provide "gateways" to participation, i.e., potential anchors to consider in our adaptation of dance. Although this step did not provide any new relevant information to consider for dance adaptation in our study, the participant interviews provided a worthwhile initial contact, especially with those who were not particularly fond of dance to begin with or whose concept of dance might have impeded their participation (e.g., fear of having to learn codified steps when they did not see themselves as "dancers"). After considering the potential sequelae and needs related to stroke in general, modifications were made to the preliminary design taking into account the participants' actual individual limitations (e.g., to better manage a post-stroke perceptual or sensory sequel) in order to move from a generic design to more specific tailoring.

Based on this pre-intervention adaptation process, it was determined that the intervention would be added to the rehabilitation program of the participating patients for two 55-minute sessions per week for 10 weeks, to help intensify their rehabilitation. For safety and participation reasons, it was also determined that it would be largely chair-based to accommodate participants with severe motor

impairments, whether or not in wheelchairs, and to target the median zone of the Borg Rating of Perceived Exertion (RPE) Scale.¹⁸ Patients' relatives would also be invited to take part in the intervention, which combined different approaches to dance (ranging from structured dance to guided improvisation, body percussion, and somatic dance).

Throughout the intervention – from planned to real-time tailoring

A total of 22 participants took part in the adaptation throughout the intervention: the same six patients, eight treating therapists (three physical therapists; three occupational therapists; and two speech-language pathologists, five of whom had been involved in the preliminary design and validation stages), four relatives (one spouse, two daughters, and one brother), and four rehabilitation assistants. Here, the dual role of the dance facilitator (also a researcher) allowed for observational participation.¹⁹ She was thus able to adjust the intervention as she observed it, making possible a descriptive and explanatory approach that was both synchronic (by focusing on the intervention at specific moments)²⁰ and dynamic (by focusing on the evolution of the intervention).²¹

Throughout the intervention, all adjustments aimed to make the specific tailoring even more specific on an ongoing basis (Time 6). They were first based on the patients' participation in the sessions, i.e., in response to their explicit comments and requests, but above all, in response to a range of information observable through their participation (e.g., interests and disinterests, activity limitations and participation restrictions, progression and regression/or new challenges). As detailed in Figure 1, this information was collected using the TIDieR descriptive tool, critical incidents, video recordings, and the research log. Video recordings were reviewed after each session to pinpoint details of patient participation potentially missed by the dance facilitator in real time. Other inputs came from the relatives and rehabilitation assistants who participated in the sessions (observations, reactions, proposals, etc.). The dance facilitator was unable to attend the weekly multidisciplinary meetings (although we would recommend doing so), but frequent informal updates from rehabilitation professionals nonetheless informed the ongoing adaptation process. After trying her more intuitive approaches, she also continued to search the literature for knowledge and strategies in order to better handle unexpected situations (including comorbidities such as Parkinson's disease and obesity) that might require a number of adjustments. This ongoing tailoring went beyond the initial planning, as it was one thing to prepare to work with such a group and quite another to adapt to the group.

In the dance sessions, the dance facilitator demonstrated several variations of the same movement to provide visual guidance for individuals with different limitations. More importantly, our dance pedagogy fostered self-adaptation of movements by the patients (Time 6), according to their own limitations and restrictions (including sensations, energy, and fatigue levels), while encouraging their creativity and personal gestures. They were constantly invited to self-adapt to involve them more actively in the intervention. All participants engaged in self-regulated movement according to their stroke-related challenges, which allowed them to participate in the dance adaptation process. This process could not have been completed without the patients' self-adaptations, given the heterogeneity of post-stroke sequelae within the group.

Discussion

Overall, the study offers deep insight into the importance of having a clear methodology model for adapting dance in a complex clinical context. This will be addressed in the next two sections on the concepts of (1) adaptation and (2) complementarity of dance interventions.

The concept of adaptation

Several terms are currently used in the literature to refer to dance in relation to health and well-being: 'dance for health', 'adapted dance', and 'dance therapy'. Generally, these different approaches seem to incorporate a number of shared considerations (albeit not necessarily explicit) in the development of a dance project. As mentioned earlier, the infographic developed by the IADMS' Dance for Health Committee can help those planning Dance-for-Health projects. The considerations to take into account are the dance objectives, intended participants, content and structure of the dance activities, host organization, and various concerns of those conducting in-parallel research. These considerations require some decision making and adaptations to ensure the relevance of the dance activities to the participants and host organization, not to mention to the potential research project involved. The IADMS guidelines echo the considerations addressed in the adaptation process illustrated in Figure 1. The specific objective of our work, however, was to integrate such guidelines into a methodological process, and in so doing, propose a concrete example of dance adaptation based on data collection. At the same time, we sought to illustrate that it takes time to develop an intervention that is relevant to a particular context.

What makes a dance intervention well-adapted for a given population or clinical context? This question raises the notion of the relevance of content to the goals being pursued. In the context of our study, the goals were to intensify rehabilitation and to foster patient participation and

motivation. A good dance adaptation should thus allow us to reach our goals.^{1,22} The literature generally focuses both on what is done in dance and the effects of dance, but not on how dance has been developed to achieve specific goals. Some authors have already highlighted the complexity of research methodology when it comes to dance for health⁵. We must add to this the complexity of adaptation methodologies.

Based on our study, three aspects stand out as more specific to adapting dance in a complex clinical context: 1) the co-development of a preliminary ‘generic’ design to which specific individual considerations can then be added; 2) its validation by the professionals concerned to ensure its relevance and safety; and 3) the use of a pedagogy that fosters self-adaptation of movements by the participants, in order to overcome the inherent limitations of dance adaptation.

The concept of intervention complementarity

To support this section we draw on additional findings based on semi-structured interviews conducted at the end of our intervention with all dance session participants (patients/PA, relatives/REL, and rehabilitation assistants/AS) and participating treating therapists (physical therapist/PT; occupational therapist/OT and speech-language pathologist/SLP) (n=22). Two of the open-ended questions were “How do you think adapted dance is different from other rehabilitation therapies?” and “In what ways do you think it can be complementary in stroke rehabilitation?” Based on the participants’ words, we discuss two levels of complementarity that they associated with dance, one of which echoes the concept of adaptation (see Figure 2).

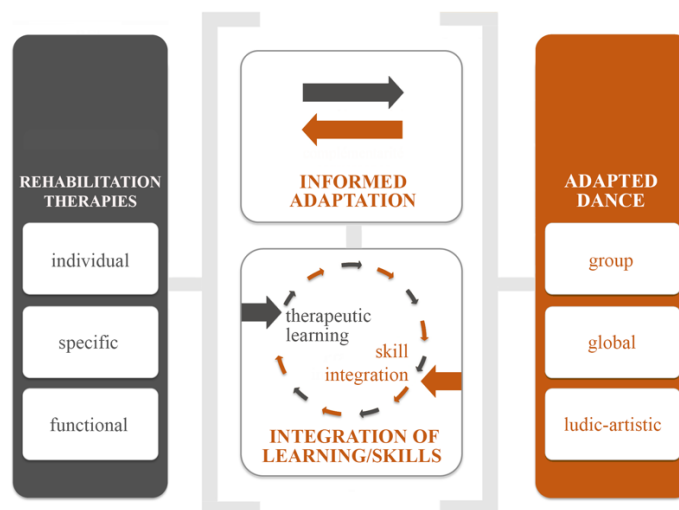


Figure 2.

Participants perceived the dance intervention as complementary in the stroke rehabilitation context because it offered a group format unlike the individual work prioritized in other therapies. It also offered a global approach to movement, whereas other therapies are more specific, focusing on the side affected by the stroke (the ‘problem’). Its ludic-artistic dimension complemented functional therapies, “somehow addressing the same movements, but through a different approach” (AS3). Participants perceived such dance complementarity as “natural”; “dance was more holistic, naturally integrating the whole body in its approach to movement” (OT3).

They then told us that they felt the dance intervention was ‘in line’ (AS1) with the therapies. Most of them clearly perceived the intervention as ‘informed’ (PA1) by rehabilitation knowledge and practices. They no longer spoke of a ‘natural’ but of an ‘informed’ complementarity resulting from adaptation. The therapists mentioned how important this was to prevent interference with the therapy work. After having ‘informed’ the dance adaptation process, they said they wished that dance had, in turn, informed their practice more, through systematic two-way communication between them and the dance facilitator, a process we had not implemented systematically.

Dance was reported as ‘polishing’, ‘refining’, and giving movements more ‘finish’ (AS3). Some participants said that “dance integrated the work done in therapy into one whole, [bringing] together learning from different areas – [either] tasks or skills learned in therapy – and then had put that skill into a whole that was coherent and rewarding: dance” (AS4). From our point of view, such an integration may be ‘natural’ in part, but not as natural as it may seem since the movement examples participants cited were often adapted specifically for stroke. For us, this again illustrates the importance of dance adaptation, as dance by itself could not have guaranteed a complementary intervention in subacute rehabilitation post-stroke.

In summary, our study supports the importance of methodology for relevant dance adaptation for subacute rehabilitation post-stroke or even broader application, and contends that adaptation relevance can ensure dance complementarity. Our model can inspire other dance facilitators working in diverse rehabilitation contexts or other complex clinical contexts, as well as other researchers.

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