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“I think relax, relax and it flows a lot easier”: Exploring client-generated relax strategies

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“I think relax, relax and it flows a lot easier”: Exploring client-generated relax strategies

Abstract

Background. Some adult stroke survivors participating in Cognitive Orientation to daily Occupational Performance (CO-OP) treatment programs self-generated relax strategies that have not been explored in previous CO-OP publications. The objective of this study was to describe the process by which adults with stroke used relax strategies and to explore the outcomes associated with their use.

Methods. Secondary analysis of transcripts of intervention sessions from five participants was conducted.

Results. All five participants applied relax strategies after initially observing a breakdown in performance that was attributed to increased fatigue or tension. The relax strategies used by the participants during their occupations included general relaxation, physical modifications to reduce tension, mental preparation, and pacing. The application of these strategies seemed to result in improved skill performance, reduced fatigue, and transfer to other activities.

Conclusion. The relax strategy warrants further investigation as a potentially important therapeutic tool to improve occupational performance in individuals who have had a stroke.

Keywords

stroke, strategy use, relaxation

Credentials Display

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One of the main roles of the occupational therapist while implementing the Cognitive Orientation to daily Occupational Performance (CO-OP) treatment approach is to guide each client to discover and self-select his or her own performance plans, called domain-specific strategies. Early CO-OP literature, based on studies of children with developmental coordination disorder, described seven categories of domain-specific strategies: body position, attention to doing, task specification/task modification, supplemental task knowledge, feel of the movement, verbal motor mnemonic, and verbal rote script (Polatajko & Mandich, 2004). The approach has since been adapted for other populations, including adults living with the effects of stroke (McEwen, Polatajko, Huijbregts, & Ryan, 2009; McEwen, Polatajko, Huijbregts, & Ryan, 2010; Polatajko, McEwen, Ryan, & Baum, 2012; Skidmore et al., 2011). Adults with stroke have been observed using an additional category of domain-specific strategy, called the relax strategy (Fernandes et al., 2010). Relax strategies, evoked to diminish effort or to return one's body to a state of tranquility in response to fatigue or tension, are not well described in the literature, thus making it difficult for therapists to apply them in a clinical setting.

Fatigue, anxiety, tension, and spasticity are well documented in the stroke population (Ayerbe, Ayis, Rudd, Heuschmann, & Wolfe, 2011; Duncan, Wu, & Mead, 2012; Marciniak, 2011; Naess, Lunde, & Brogger, 2012; Naess, Lunde, Brogger, & Waje-Andreassen, 2012; Sommerfeld, Gripenstedt,

& Welmer, 2012; Wolfe et al., 2011). Links among these impairments and reduced occupational performance have also been demonstrated (Andersen, Christensen, Kirkevold, & Johnsen, 2012; Oneş, Yalçinkaya, Toklu, & Çağlar, 2009). Specific links between tension and motor performance breakdown have been postulated through a phenomenon known as reinvestment (Orrell, Masters, & Eves, 2009). Reinvestment is defined as skill breakdown under pressure related to an individual's tendency to apply conscious control to an otherwise automatically controlled movement (Masters, Polman, & Hammond, 1993), and is significantly more prevalent in the stroke population than in controls (Orrell et al., 2009). Orrell and colleagues (2009) suggested that a paradigm shift toward more implicit motor learning, with less explicit instruction, may help to reduce the reinvestment phenomena. Relax strategies, aimed at diminishing effort or returning one's body to a state of tranquility during an activity (Fernandes et al., 2010), may divert the performer's attention from the specific movement mechanics of the task and enable a smoother performance that requires less effort.

Relax strategies, as described in this article, are evoked during the practice of a task. The intention of the strategy is to improve immediately the performance of the specific occupation, activity, or skill; therefore, relax strategies differ from formal relaxation techniques, such as progressive muscle relaxation (Hawton, Salkovskis, Kirk, & Clark, 1989) or autogenic relaxation (Ernst & Kanji,

2000). While the two entities are likely related, the clinical objectives differ. Traditional, formal relaxation techniques are intended to promote longer-lasting generalized reduction in tension and anxiety. The preliminary efficacy of these more traditional forms of relaxation has been demonstrated in people living with stroke (Kneebone, Walker-Samuel, Swanston, & Otto, 2014). “Relax strategies,” as defined here, are short-term cognitive strategies evoked during CO-OP treatment sessions to improve performance during a physical activity.

CO-OP is an established, collaborative, client-centered treatment approach that combines cognitive strategy use with motor learning theory. The client achieves personally meaningful goals through the use of a global cognitive strategy, GOAL-PLAN-DO-CHECK (Meichenbaum & Goodman, 1971), and domain-specific strategies. The global cognitive strategy is the main framework of the CO-OP approach and is used for all goals, whereas domain-specific strategies are unique to each client and goal, and the clients develop them to address specific breakdowns in performance (Polatajko & Mandich, 2004). The CO-OP approach is distinctive from other rehabilitation approaches in the degree of control it gives to clients to develop their own domain-specific strategies to improve skill performance. Although clients generate the strategies themselves, their therapists use a guided discovery process to help them do so. Guided discovery is more efficient when the therapist has broad knowledge of

potentially useful domain-specific strategies and the circumstances in which to use them. Since little is known about the use of relax strategies to enhance immediate skill performance, studying participants who are known to have spontaneously used these strategies can enhance our knowledge regarding when they are evoked, how they are manifested, and what outcomes are associated with their use. This research may help therapists in the future to guide or teach clients to use relax strategies when the circumstances are appropriate.

The overarching objective of this study was to examine existing data from past studies to explore the process of using relax strategies and the outcomes of their use. The following questions guided our research:

1. In clients with stroke who self-generate relax strategies, when and how are they generated?
2. What outcomes do clients attribute to the use of relax strategies?

Method

The authors employed a descriptive qualitative secondary analysis of transcribed intervention sessions from three previous studies. The data source was verbatim transcriptions of video-recorded CO-OP treatment sessions from nine single cases from three completed studies. The authors scanned the transcriptions of intervention sessions for any text segments that described relax strategies. From those nine potential case studies, the authors identified five individuals who had used a relax strategy. Three cases came from previously

published single case experimental series (McEwen et al., 2009; McEwen et al., 2010), and the individuals were all more than 1-year poststroke. Two additional single cases came from feasibility testing for a randomized controlled trial in adults less than 3-months poststroke (NIH Clinical Trials registration # NCT01309165). Common inclusion criteria from those three studies were that the participants had to be living in the community following a stroke and had to have ongoing rehabilitation goals. Common exclusion criteria were dementia, comorbid neurological or psychiatric conditions, and moderate or severe aphasia.

As the research objective was to explore the process of using relax strategies, the aim of the qualitative analysis was not to derive themes from the data, but instead to understand and explain the underlying processes associated with applying relax strategies to specific activities. We did this using two levels of analysis: The first was a content analysis, and the second was a cross-case chronological analysis of the coded content to explore the processes.

For the first level, the authors employed conventional content analysis to develop conceptual categories related to the process of using relax strategies (Hsieh & Shannon, 2005). This is an inductive technique that is useful to describe phenomena when existing literature is limited. The authors did not use any preconceived codes, but rather derived the codes from the data. The first author (DC) read the transcripts initially to identify

all episodes that related to the process of using relax strategies, including the circumstances before and after using the strategy. Both of the authors independently read the identified episodes and developed codes for the meaningful phrases preceding the use of a relax strategy, the strategies that were used, and the resulting circumstances. Both of the authors then met to compare, discuss, and finalize the codes they had developed independently. Working together with the final codes, both of the authors then re-coded the identified episodes and arranged the codes into broader categories.

The second level of analysis involved a cross-case analysis of the coded episodes to seek any underlying processes related to the use of the relax strategies (Miles & Huberman, 1994). This was an iterative analysis conducted by both of the authors that involved review of the coded episodes chronologically, cross-case comparisons, review of the clinical context from which the data were derived (i.e., the CO-OP treatment approach, individual participant goals and characteristics, therapist factors), process model development, model review, and model revision.

Results

The authors identified five single cases in which an individual had used some form of relax strategy to enhance activity performance during previous CO-OP intervention studies. Approximately nine hours of treatment session transcriptions were analyzed. The five cases were comprised of three men and two women who

ranged from 42 to 67 years of age. To the best of the authors' knowledge, all five of the individuals developed their relax strategies as a response to immediate performance problems during CO-OP

treatment and did not have previous experience with these strategies, nor were they instructed or trained in the use of these strategies by the therapists. An overview of each participant is given in Table 1.

Table 1
Overview of participant characteristics

Descriptor	Lilly	James	Will	Martin	Florence
Age	67	55	42	56	48
Sex	F	M	M	M	F
Time since stroke	2m	1.3m	13m	18m	22m
Cognitive screen score	MoCA 24	MoCA 28	MMSE 30	MMSE 29	MMSE 30

Note. M = Male; F = Female; m = months; MMSE = Mini Mental Status Exam (Folstein, Folstein, & McHugh, 1975); MoCA = Montreal Cognitive Assessment (Nasreddine et al., 2005).

Figure 1 represents the results of the combined first and second level analysis; it displays a three-segment process related to using relax strategies, with specific categories from the content analysis embedded within each segment. The process of using relax strategies always began with an initial awareness that fatigue or tension was negatively impacting performance. This led to the

exploration of relax strategies to resolve the performance breakdown, which varied among the participants and with different activities, and finally to some form of impact on occupational performance. Below, we elaborate on these three broad aspects of the relax strategy process and the categories embedded within each.

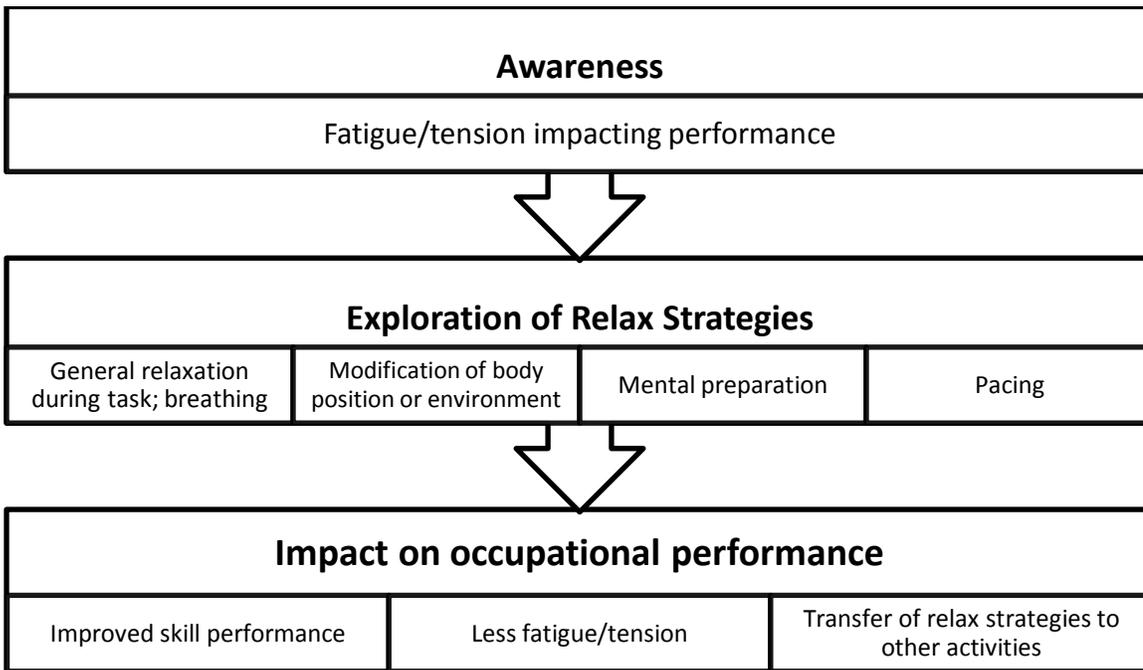


Figure 1: The three segment relax strategy process

Awareness of Fatigue or Tension

Prior to developing a relax strategy, all of the participants noted declining performance that they attributed to fatigue or tension. For example, Lilly described fatigue as a barrier to activity completion, stating, “I wanted to do more but it’s just that I get so tired.” James specifically identified mental fatigue, stating, “The mental part of it is what really tires you out.” During handwriting, Will noted that he must stop when he gets tired because the quality of his handwriting deteriorates. They sometimes became aware of specific tension in a muscle or body part or general overall tension prior to evoking a relax strategy. For example, James stated, “I just naturally get tense, and I think you’re trying to throw all of your body’s effort into this stupid little pen that’s writing and there’s a lot of tension there and you know the tension really exhausts you.” When the therapist asked James where he noticed the tension, he said, “In my shoulder and arm and my writing hand.”

Exploration of Relax Strategies

While it was common among the participants to evoke a relax strategy in response to their awareness of fatigue or tension, the specific strategy applied varied among the participants and with different activities. The different relax strategies included general relaxation, physical modification, mental preparation, and pacing.

General relaxation during the activity.

Some of the participants used body awareness and general relaxation as their relax strategy during the task execution. For example, James stated, “To be

able to perform better, you relax.” This awareness helped the participants to develop strategies to self-regulate. He later expanded on this idea, stating, “I was kind of feeling like I was getting a little tense there. I could do a check on myself, right?” Similarly, referring to how she performs tasks, Lilly said, “I am more aware of the fatigue. I’m more aware of the signals in my body and I tend to listen to my body now.” For several of the participants, the word relax appeared to become a key part of their relaxation strategy. When the therapist asked Will to verbalize his strategy for bicycling, he replied, “Relax.” James reflected, “I’m more relaxed now when I write. I don’t get that tight feeling when gripping the pen as much. That’s one thing I really worked on was just staying relaxed and, you know, I was surprised I could achieve that.” Breathing also appeared to be an integral part of several of the participants’ general relax strategy. After initially struggling with fatigue and tension while typing, Lilly developed a breathing strategy and reported, “I keep on doing that now, and it helps a lot, especially when I’m typing, and I (demonstrated a deep breath), and it helps.” James noted, “I think the breathing really helps to calm me down,” and Martin said, “My goal is to breathe through; to let the air to my abdomen.”

Physical modification. The participants modified their body position or the environment when they observed tension or fatigue while performing their goals, with the objective of reducing their tension or fatigue. For example, Florence noted that she was able to reduce tension

while walking: “I thought if I try to relax this leg when I walk, it will help.” Lilly noticed tension in her arm while typing and chose to change her chair position, saying, “I think the chair is the most important thing [for a relaxed posture] really because this is supporting my back completely.”

Mental preparation. The participants also developed a mental preparation relax strategy. This strategy involved preplanning how the task would be executed before doing it, so that he or she could reduce the cognitive effort during the task. For example, Lilly said, “I cannot think and write.” James also found it beneficial to think initially about the sentence he was going to write before he picked up the pen, stating, “If you can just take that moment and think about it, the steps you are going to go through to reach that goal, it’s a lot easier.”

Pacing. The participants also developed and applied pacing strategies to diminish fatigue and tension. This frequently involved planning to work at a slower pace. When a therapist asked James to consider how he could reduce fatigue, he responded, “I should pace myself or plan a little better.” Will noticed a positive effect from slowing down, stating, “I feel more relaxed. If I try to hurry, it doesn’t work.” Understanding when to rest or do less also appeared to be a part of a relax pacing strategy. For example, Lilly developed a strategy to take breaks while typing, stating, “Now I know when I’m tired I stop, I walk away from the computer.” Will noticed his declining performance while writing and developed a pacing strategy of “so when you feel tired, leave it here.”

Improved Occupational Performance

The participants reported several positive outcomes of applying the relax strategy. These included improved skill performance, less fatigue, and learning to transfer the relax strategy to other activities.

Improved performance. Florence noted that the application of the relax strategy improved her walking, stating, “[relaxing] does, I think it helps me to take bigger steps because when I go rigid at the knee, it is harder.” James also reported improved performance, stating, “the more relaxed I became, the better I wrote.” The participants also reported that the activity became more automatic. James said that while he is writing, “I think relax, relax and it [the pen] flows a lot easier.”

Less fatigue. The application of the relax strategy also appeared to reduce fatigue. While cutting vegetables, Lilly reflected on her ability to cut vegetables and stated, “I’m not as tired, there’s not a lot of effort expended on it, and my breathing is natural.”

Transfer to other activities. Perhaps most important, some of the participants appeared to be able to transfer the relax strategy to other activities. When the therapist asked Will if his relax strategy for writing was applicable to other tasks, such as washing the dishes, he said, “Yes. Keep in mind all of the time to relax, otherwise it’s tiring.” James recognized how tension was negatively impacting his performance in his initial goals and then applied the relax strategy to other activities: “Not to be tense, I think that’s the primary thing, I think that’s

really affecting everything. I could watch the writing to see, but mostly I can feel it. Like I've made myself aware of it now, so it can permeate into all the different areas of what I do now." He also stated, "The more you relax, the better you perform, so this is quite applicable to a lot of areas in life."

Discussion

This study explored the process by which a small sample of adults with stroke who were participating in CO-OP intervention studies self-generated and applied relax strategies. The specific relax strategies varied among the participants and with different activities, but all of the variations appeared to begin with a self-awareness of fatigue or tension. In this discussion, we elaborate on the relax strategy and discuss why the relax strategy may be particularly important both to people living with the effects of stroke and to the therapists with whom they work.

Relax strategies as defined within this article are not one specific strategy, but instead any strategy developed by the client that is intended to reduce effort during the immediate execution of a specific task. The relax strategies are evoked immediately during the actual performance of the functional activities, once the client perceives that fatigue and/or tension are causing performance deterioration. Common manifestations of the strategy include general relaxation, modification of the body position or environment, mental preparation, and pacing. This is in contrast to more traditional, formal relaxation techniques that

involve participating in prolonged periods of stress reduction and are intended to have more generalized effects on tension and anxiety.

A critical element present throughout the process seems to be the participants' awareness of fatigue or tension. Body awareness is the ability to recognize subtle body cues (Mehling et al., 2011). We postulate that this awareness shares similarities with mindfulness, the ability "to acquire attentional control by focusing on events generated internally (bodily sensations, breath, thoughts, emotions) and externally (sights, sounds) at the current moment with nonjudgmental acceptance" (Wahbeh, Elsas, & Oken, 2008, p. 2322). There may also be elements of the construct flow when the relax strategy is well practiced and becomes more automatic. Flow, as described by Csikszentmihalyi and Rathunde (1992), refers to being completely engaged and aware during a task, with a just-right balance between skill and challenge, and focus to the point of losing track of time. Reid (2011) writes that both mindfulness and flow involve being present, actively engaged, and attentive, and both may contribute to occupational engagement. In our participants, there was evidence that they used the relax strategy to move beyond basic skill performance toward a more present state of occupational engagement.

As mentioned in the introduction, specific links between tension and motor performance breakdown have been postulated. Reinvestment occurs when an individual applies conscious control to a movement that is learned sufficiently to be

automatic (Orrell et al., 2009). The authors postulated that a relax strategy that evokes awareness of body tension and fatigue rather than conscious control of specific movement mechanics, may result in more automatic movements. Some evidence was found to support this in participant reports of activities being natural, comfortable, free, and flowing. Potential relationships between the relax strategy and diminishing the impact of reinvestment warrant further empirical investigation.

In this study, the therapists and the CO-OP process played an integral role in guiding the participants to recognize how fatigue or tension were negatively impacting performance during a task. The collaborative CO-OP process enabled the participants to develop a goal to reduce this tension or fatigue and to generate a relax strategy. Although the clients generated the relax strategy during CO-OP treatment, it is highly likely that therapists treating outside of the CO-OP context can guide their clients toward generating and applying the relax strategy when appropriate. This process of empowering clients to develop their own relax strategy would likely need to include the key elements of the relax strategy process observed by the authors. This may include facilitating awareness when fatigue or tension is negatively impacting performance, exploring relax strategies through trial and error, and including client self-evaluation of the strategies' impact on occupational performance. Although this process is described as linear, there may be times when clients need to

explore the key elements. For example, clients may need to practice several different relax strategies before they discover the one that works best for them.

Limitations and Implications for Further Research

This secondary analysis was limited by the small sample size and potentially by the client-therapist relationship between the authors and the participants, as DC was the therapist for Lilly and James, and SM was the therapist for Will, Martin, and Florence. Although some may consider this vantage point beneficial, in that both of the authors had an excellent knowledge of the broader context of the intervention sessions, including knowledge of the participant's personality and motivation, there also may have been a reduction in objectivity when interpreting the transcripts.

Future controlled studies could include investigation of the efficacy and efficiency of relax strategies to improve occupational performance in a larger sample, investigations of methods to teach relax strategies, and investigations designed to shed light on the neurocognitive mechanisms by which relax strategies function.

Conclusion

Relax strategies may be important in enabling adults poststroke to improve performance in personally meaningful occupational goals when fatigue or tension are present. Occupational therapists may play an integral role in guiding clients to recognize how fatigue and tension negatively impact occupational performance and in

enabling clients to develop an individualized relax strategy that works best for them. Further investigation is warranted.

Key Messages

- Relax strategies may enable adults poststroke to improve performance in personally meaningful occupations.
- Occupational therapists can play an integral role in helping their clients learn strategies to reduce the fatigue and tension that negatively impacts occupational performance.
- Additional research is needed to understand fully how relax strategies can positively impact occupational performance.

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