

Time-Dynamics of Burnout Patients: Results of a Laban Movement Analysis - A Controlled Study

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Abstract

Background: The personal relative time and rhythms become dysfunctional within burnout syndrome, as biological and psychosocial rhythms are dysregulated. Not yet investigated is the movement behavior of burnout patients and therefore nor are the time-dynamics. The aim of this study is to find a deeper understanding of the time-dynamics within the movement behavior of burnout.

Methods: Hospitalized burnout patients (n = 22) and a healthy control group (n = 20) participated in a standardized movement sequence with simple time-related tasks. Two certified movement analysts rated each participant independently using Laban Movement Analysis. The analyzed categories were the time-related Effort Time and Phrasing. The consistency between the raters was tested with the inter-rater reliability test, Cohen's Kappa, and the comparison between the groups was tested with the Mann-Whitney U test.

Results: The rater agreement (inter-rater reliability) was substantial to almost perfect in all variables: Kappa = .65-.92 (p < .001), (.457 ≥ 95% CI ≤ 1.04). So, the consistency between the two raters was good enough to guarantee objectivity and thereby also the reliability of the test is proven and given.

There are significant differences between the burnout patients and the control group in the variables: Sustained Movements, Rhythmic Phrasing, Impulses, Repetitions, Sequences and Variations. No significant differences were found in the variables: Sudden/Fast Movements, Metric Phrasing, Ametric Phrasing, Free-Rhythmic Phrasing, Continuous and Interrupted Phrasing.

Conclusion: Burnout patients have deficits in their time related movement behavior. They have a lack of the Sustained Time Effort element and the Phrasing. So, the implicit time dynamics of the living body are shown less within burnout-syndrome. These findings could provide new starting points for preventive and therapeutic interventions.

Introduction

Since burnout is not yet a separate clinical diagnosis and furthermore, there are various different definitions of the burnout syndrome, scientific investigations about the syndrome are required.

The personal relative time and rhythms [1] become dysfunctional within burnout syndrome, as biological (e.g. heart rate, respiratory rate, sleep-wake rhythm) and psychosocial rhythms (e.g. work-life balance, activity and relaxation) are dysregulated [2]. Further to that, and with reference to Fuchs [3], Paletta [4] declared that burnout patients have a characteristic consciousness referring to time, especially to the past and the future, hardly ever to the present. Additionally, they have an outstanding ability to synchronize with people around them, by repressing their own time-related processes. Finally the effort, which is also associated with time, is affected. Since burnout patients have a special relationship to time and since time is embodied (not organized cognitively) the implicit time dynamics of the living body [5] promise new findings.

These implicit time dynamics have to be analyzed on the body itself, as they are pre- or even un- conscious and the living body expresses them as movements. Body issues need as well body instruments for analysis [6]. So, an obvious method is a movement analysis to methodically collect these dynamics. Laban Movement Analysis as a movement behavior observation instrument is an appropriate method because it includes the whole movement behavior and especially the use of the body parts and the quality of the movement [6].

And along with the bio-psycho-social model to understand human-beings "mental illness is associated with altered behavior" [7]. Because of that many studies investigated the movement behavior of patients with mental illnesses using various methods. But Levy and Duke [8] criticized previous surveys associated with emotions and movement behavior with their inconsistent results because of their inadequate instruments for movement analysis and made a plea for the Laban Movement Analysis: The others lack a systematic language and comparability in consequence of the variety of methods used and only measure the quantitative aspects of movement, but not the qualitative aspects.

There are some surveys with Laban Movement Analysis, which analyses the movement behavior of mental illnesses, like borderline personality disorder [9], eating disorders (anorexia nervosa and bulimia) and inflammatory bowel disease [9,10] or schizophrenia and other personality disorders [11].

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Time-related results – here associated to the Effort Time – were found in the following surveys, which analyzed the movement behavior of mental disorders with the Laban Movement Analysis:

Burn [12] found that anorexic patients in comparison with a healthy control group mainly show the Sustained Time Effort element. Apparently, but not necessarily in contrast to that, Lausberg et al. [7] found in anorexia nervosa mainly the Sudden Time Effort element in comparison with a heterogenic group of psychosomatic disturbances. So anorexic patients showed more Sudden movements, but only in comparison – as previously mentioned – with psychosomatic-patients. Shenton [13] found, in general, a distorted use of time in patients with anorexia nervosa.

Welsche [14] reported from a controlled study of female patients with depression that they show mainly Sudden movements. The latter is interesting for the present study because of the affinity between depression and burnout.

But neither the movement behavior nor the time-dynamics of burnout patients have been investigated yet. Therefore, movement observation promises new information and new findings about burnout syndrome.

The aim of the study is to find a deeper understanding of the time-dynamics within the movement behavior of burnout patients in order to find new implications for burnout syndrome and further for preventive and therapeutic interventions. Hence, we try to identify potential differences in time-related parameters within the movement behavior of burnout patients in comparison to healthy people.

Materials and Methods

Participants

Tested were 22 burnout patients, 14 men and 8 women with a mean age of 47.2 years (\pm 9.1 years) and a healthy control group with 20 participants, 10 men and 10 women with a mean age of 41.5 years (\pm 15.0 years). The burnout patients were hospitalized in a rehabilitation-clinic for psychiatric illnesses (Privatklinik St. Radegund).

The attendant psychiatrists selected the burnout patients for the study. To assure the diagnosis, patients as well as the control group filled out a questionnaire, the Burnout Screening Scales (BOSS) [15]. The criterion-related validity of the Burnout Screening Scales shows an accordance with the statistical values of the BOSS with the clinical diagnosis of the psychiatrists. One female participant was not accepted in the study, as her BOSS-values did not align with the burnout diagnosis. Interestingly her values in the movement analysis were also not burnout-like.

Both patients and the control group heard before the study that it was only a movement study, but not that it was related to dance in order to avoid the possible affinity to dance influencing the results. They participated voluntarily and also were blind to the hypothesis of the study.

The criteria of exclusion were (further, in the case of the burnout patients) psychic or somatic illness or intellectual impairment, which could influence movement behavior.

Setting

The participants were in burnout groups or healthy groups ($n = 10 \pm 2$). We tested them in groups as we also wanted to observe their behavior among each other.

The setting was always the same: same location (the gym of the clinic), same time (between 2 and 3 pm), same dance therapist and same two silent observers (two researchers).

Movement Instructions

The participants performed movements following verbal instructions. The instructions were standardized and were composed of three parts.

The verbal instructions came from a dance therapist who is trained in Laban Movement Analysis. To ensure that the dance therapist is not influenced during the analysis and/or influences the participants, she is not involved in the analysis and is blind to the hypothesis.

First Part: Warm Up

The first part is a warm up, to 'arrive' and acclimatize with the cameras and the situation, hence a normal behavior is established; it lasts ten minutes.

Second Part: Time-related Instructions

The second part consists of simple instructions related to time; it lasts 20 minutes (each sub-part lasts five minutes):

Tempo, my own and the others' (5 min.):

- Please move in a comfortable tempo.
- When you have found your tempo, please notice the tempo of the others without losing your own.
- Now, sometimes, please try a tempo of someone else and then return to your own.

Stop and Go (5 min.):

- Please experiment with stop and go: make stops by yourself within your movements. You can decide by yourself how long you want to stop and when you want to move again.
- Now please notice the others with their movements during your stops.

Slow and Fast (5 min.):

- Please let your movements become gradually slower and slower and finally move for the next few minutes as slowly as you can, like in slow motion.
- Now, please let your movements become gradually faster and faster and finally move for the next few minutes as fast and/or as hectically as you can, like in fast motion.

Different Time-Variations in Pairs (5 min.):

- Please dance in pairs with time-variations. Show as many different variations as possible. Move synchronously and also asynchronously.

Third Part: Improvisation to the Elements

The third part consists of improvisation tasks of the elements earth, water, fire and air and also lasts 20 minutes (each element five minutes). The purpose of this part is to provoke the effort, the variability and the movement patterns of the participants. The last tasks were oriented on Lausberg's [10] study with patients with psychosomatic disorders:

- Please try to represent earth with your movements.
- Please try to represent water with your movements.
- Please try to represent fire with your movements.
- Please try to represent air with your movements.

These movement tasks were filmed from five angles.

Movement Analysis

Two certified and trained dance therapists and movement analysts who have long experience with Laban Movement Analysis, i.e. experts, analyzed independently from each other and independently from the instructor and the researcher each participant via video. So, they could watch as often as they have to, a sequence to analyze the variables of the Laban Movement Analysis. They were blind to the hypothesis of the study and to the patients and control group.

Laban Movement Analysis (LMA)

The movement analysis system was developed based on LMA from Rudolf von Laban [16–18] and on literature, which builds on LMA [19]. Variables and their rating grades – the coding system – were tested in a pilot study.

LMA is a scientific and standardized method for observing behavior and movement [6,20,21], because it is descriptive and also objective [6]. LMA is the approved diagnostic instrument and scientific system for movement analysis in dance and movement therapy [6,21,22] and so there are scientific data for comparison [21].

It covers the whole of movement behavior and especially the quality of movement [6, 8]. “Laban encodes both the structural characteristics and the expressive specificities of a movement using a set of semantic components” [23].

So as well as neurosciences and robotics, animation techniques and surveillance techniques use LMA to analyze movement behavior of humans for their surveys, because it's specific, mathematical and precise [24-27].

Summarizing LMA, it is “a formal and universal language for human movement” [27]. Finally: pre-verbal patterns can also be recognized [28]. And since in the present study time-dynamics were analyzed, which are pre- or unconscious, it is the adequate instrument, as Pfeffer [29] has demonstrated already.

Variables

In the present study the time-related variables of Laban Movement Analysis were analyzed. It is obvious that every movement behavior and therefore also every variable of Laban Movement Analysis cannot be out of time. The following variables are especially connected to time.

Effort Time

The Effort is a dynamic and energetic quality within the movement, described by Laban [30]. It is an inner impulse to move [31], which lives in everybody [32]. It's the inner involvement within a movement,

the expression and the feeling [33]. The Effort element Time is this inner attitude toward the motion factor time. The quality of the attitude is identified as Effort element within the ranges of two extremes: indulging and fighting against: Sustained and Sudden/Fast [31].

“How does the mover exert him/herself in time? Driven by it or lingering in it? What is his/her attitude toward exertions in time? Sudden: urgent, hasty; Sustained: taking time, leisurely. [...] Time as an Effort is not to be confused with time as duration. Duration is the amount of time that a movement might take. Time as an Effort describes the attitude towards how one approaches whatever the duration of the time is [34]”.

Phrasing

Phrasing means temporal modeling and accentuation of movement sequences, like accent in the beginning, in the middle or in the end with various dominances. These underlie a rhythmic-dynamic aspect [35]. “Each section may have one or more phrases and each activity may have one or more phrases” [36]. The category Phrasing is based on change and rhythm and thereby on temporality. The subcategories are:

- Rhythmic – Free-Rhythmic: “[...] Rhythm is not just a duration of time, accentuated by stresses. It is also the result of the interaction of Effort combinations with variations in spatial patterns” [37]. Free-Rhythmic movement is a very free, creative and individual style of rhythm.
- Metric – Ametric: Metric movement is subordinated an underlying measure; it is consistent, steady-going and balanced. Metrical emphases are like rigid and symmetrical rhythmical patterns [36]. Ametric movement is without a measure and without structure whatsoever; it is not consistent and is imbalanced.
- Continued – Interrupted – Impulsive: Continued movement is without pauses, i.e. constant movement, whereas Interrupted movement is a movement with pauses, i.e. stop and go. Impulsive means movement with impulses, which highlight a movement sequence.
- Sequences – Variation – Repetition: Sequences are recognizable definitive movement sequences. Variation is a variety of different movements/movement patterns/sequences, whereas Repetition is a constant repetition of the same movements/movement patterns/sequences.

Statistical Analysis

Inter-rater Reliability

The consistency of the movement analysts is tested with the inter-rater reliability test of Cohen's Kappa, to measure the objectivity of the analysis and the quality of the test [7, 38–40].

Tests between Groups

Since the data is ordinal scaled and non-parametric, the differences between the groups were tested with the Mann-Whitney U test [8, 41]. This test does not calculate with the measured (rated) values but with the ranks of the values. The smallest measured value gets the smallest rank [41].

Results and Discussion

Methods

Inter-rater Reliability: Objectivity and Reliability

The rater agreement (inter-rater reliability) was substantial to almost perfect in all variables: Kappa = .65-.92 (.457 \geq 95% CI \leq 1.04).

Consistency of the Raters: Effort Time

Category	Subcategory	Kappa	CI
Effort Time	Sustained	.66	.47-.86
	Sudden	.84	.69-.99

Table 1: Inter-rater reliability of the two raters of the variables of the Effort Time.

CI = confidence interval

Consistency of the Raters: Phrasing

Category	Subcategory	Kappa	CI
Phrasing	Metric	.69	.47-.90
	Ametric	.82	.66-.98
	Rhythmic	.85	.71-.99
	Free-Rhythmic	.72	.50-.94
	Continued	.75	.57-.94
	Interrupted	.70	.50-.90
	Impulsive	.65	.45-.84
	Repetitions	.89	.74-1.04
	Sequences	.64	.46-.83
	Variations	.92	.81-1.03

Table 2: Inter-rater reliability of the two raters of the variables of Phrasing.

CI = confidence-interval

So the consistency between the two raters was good enough to guarantee objectivity. And thereby also the reliability and quality of the analysis is proven and given.

Validity

Since LMA is a well established and proven scientific instrument for observing movement behavior and as we analyzed burnout patients for their different movement behavior in relation to a control group, the validity can be considered to be a logical validity. So, our domain, which should be covered, is the movement itself, which is covered by Laban Movement Analysis, more precisely time-related variables of Laban Movement Analysis.

Patients vs. Control Group

Burnout patients have deficits in their time-related movement behavior. There are significant differences between the burnout patients and the control group within the following variables of the Effort Time and Phrasing.

Effort Time

Within the Effort Time, the subcategory Sustained was shown significantly less often by the burnout patients compared to the control group. Sudden was also shown less often, but not significantly (Table 3, Figure 1). So the mean rank of the subcategory Sustained of the patients is 17.4 and of the control group is 26.0. The mean rank of the subcategory Sudden/Fast of the patients is 19.4 and of the control group is 23.8 (Figure 1).

Results of the U Test

Category	Subcategory	U Test*	P-value
Effort Time	Sustained	U = 130.0	.02 (significant)
	Sudden/Fast	U = 174.5	.22 (n.sign.)

Table 3: Results of the U test of the variables Sustained and Sudden (Effort Time).

*Mann-Whitney U test (p < .05)

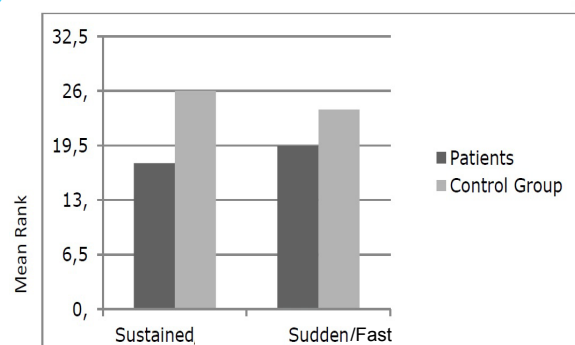


Figure 1: Mean rank of burnout patients and control group of the variables Sustained and Sudden (Effort Time).

Sustained Time Effort, i.e. Sustained movements are significantly affected in contrast to Sudden Time Effort, i.e. Sudden/Fast movements.

To indulge in the Sustained Time Effort element means to have time, to take one's own time, to indulge in the present, to be slow and cautious. This seems to be lacking within the burnout syndrome. These results can be explained by the following:

On the one hand, people with a main attitude toward the Sustained Time Effort element can begin to strive against their inner, true attitude to survive in an achievement-oriented society in which counts: the faster the better. Because the inner attitude does not fit with the requirements of the work-environment they try to overcome it. So, if a Sustained person always has to deal with time pressure it ends in over-extension and in burnout syndrome. [42] And such persons are habituated to not showing Sustained movements anymore.

On the other hand, people with a main attitude toward the Sudden Time Effort element often feel agitated and suffer of notorious lack of time. They know the anxiety, the unrest of missing something and attach their identity and their self-confidence to busyness and to getting jobs done. Hence, their self-confidence is vulnerable when doing nothing. [43] This attitude recalls the burnout syndrome in the beginning state. They try to show only Sudden movements to achieve something and they are habituated in doing so. Finally they cannot indulge in the Sustained Time Effort any more.

The result that burnout patients show a significantly less Sustained Time Effort could have both starting points: The attitude toward

Sudden Time Effort as well as the attitude toward Sustained Time Effort. In any case, with an inner pathological, not free approach, i.e. in both conditions they don't indulge in the attitude but struggle with it in one or another way. Either way, burnout syndrome ends with a lack of the Sustained Time Effort element.

Furthermore, the Effort Time cannot be seen only on the one side of the continuum, it must always be seen on both sides (Sustained to Sudden/Fast). So, if there is a limitation on one side of the continuum, there is also a limitation on the other side of the continuum and therefore the whole Effort is affected and limited. If so, the whole capacity of the possibilities of this Effort within the movement cannot be lived and expressed. And this is what is seen in the results: They show significantly fewer Sustained movements, but they also show fewer Sudden/Fast movements in comparison to the control group. So the whole Effort Time is limited within burnout and cannot be acted out with all the possibilities as healthy persons can.

Phrasing

Metric/Ametric and Rhythmic/Free-Rhythmic

Within the Phrasing, the subcategories Metric and Ametric were shown less often from the burnout patients compared to the control group, but not significantly (Table 4, Figure 2). So, the mean rank of the Metric Phrasing of the patients is 20.1 and of the control group is 23.0. And the mean rank of the Ametric Phrasing of the patients is 20.6 and of the control group is 22.5 (Figure 2).

Results of the U Test

Category	Subcategory	U Test*	P-value
Phrasing	Metric	U = 190.0	.42 (n.sign.)
	Ametric	U = 201.0	.66 (n.sign.)

Table 4: Results of the U test of the variables Metric and Ametric (Phrasing).

*Mann-Whitney U test (p < .05)

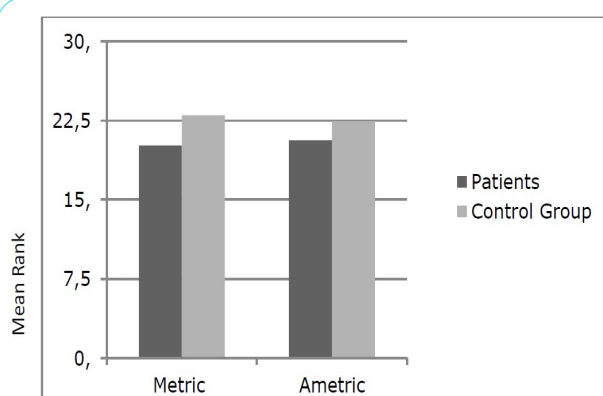


Figure 2: Mean rank of burnout patients and control group of the variables Metric and Ametric (Phrasing).

Within the Phrasing, the subcategory Rhythmic was shown significantly less often from the burnout patients compared to the control group. Free-Rhythmic was also shown less often, but not significantly (Table 5, Figure 3). So, the mean rank of the Rhythmic Phrasing of the patients is 17.6 and of the control group is 25.8. And the mean rank of the Free-Rhythmic Phrasing of the patients is 19.7 and of the control group is 23.5. (Figure 3)

Results of the U Test

Category	Subcategory	U Test*	P-value
Phrasing	Rhythmic	U = 134.0	.02 (significant)
	Free-Rhythmic	U = 180.0	.24 (n.sign.)

Table 5: Results of the U test of the variables Rhythmic and Free-Rhythmic (Phrasing).

*Mann-Whitney U test (p < .05)

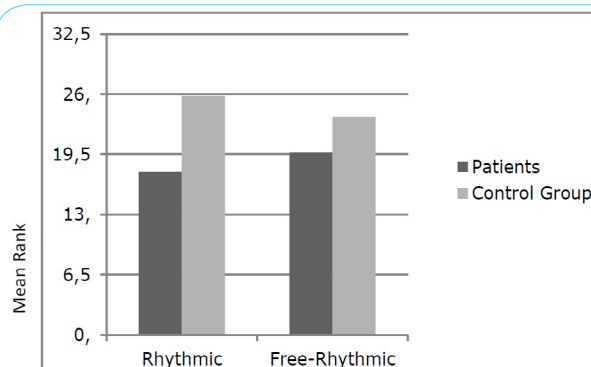


Figure 3: Mean rank of burnout patients and control group of the variables Rhythmic and Free-Rhythmic (Phrasing).

Ametric and Free-Rhythmic movements are not significantly different from the control group, as these movements are in part also shown by the control group. This is probably because of the unfamiliarity of such movements in a normal population (no dancer).

But burnout patients show significantly less Rhythmic Phrasing than the control group. These results indicate that burnout patients are able to show objective metric movements, but they can't show more than one or two individual Rhythmic movements. These results could be explained by the same as the biological rhythms, which are also dysregulated within burnout: "Industrialized society often has a devitalizing effect on organic rhythms. Its pressures reduce the flow of exertion/recuperation rhythms necessary to the continuity of vitality in activity" [37]. So burnout patients probably cannot feel their inner rhythms anymore and therefore they cannot show them. Their own inner rhythm is overlaid more and more from environmental rhythms and so they become dysregulated and in progressive states of burnout syndrome they weaken more and more.

Continued, Interrupted and Impulsive

Within the Phrasing, the subcategory Impulsive was shown significantly less often by the burnout patients compared to the control group. Continued and Interrupted were also shown less often, but not significantly (Table 6, Figure 4). So, the mean rank of the Continued Phrasing of the patients is 19.9 and of the control group is 23.2. The mean rank of the Interrupted Phrasing of the patients is 19.1 and of the control group is 24.2. And the mean rank of the Impulsive Phrasing of the patients is 17.6 and of the control group is 25.8. (Figure 4)

Results of the U Test

Category	Subcategory	U Test*	P-value
Phrasing	Continued	U = 134.0	.02 (significant)
	Interrupted	U = 180.0	.24 (n.sign.)
	Impulsive	U = 135.0	.02 (significant)

Table 6: Results of the U test of the variables Continued, Interrupted and Impulsive (Phrasing).

*Mann-Whitney U test (p < .05)

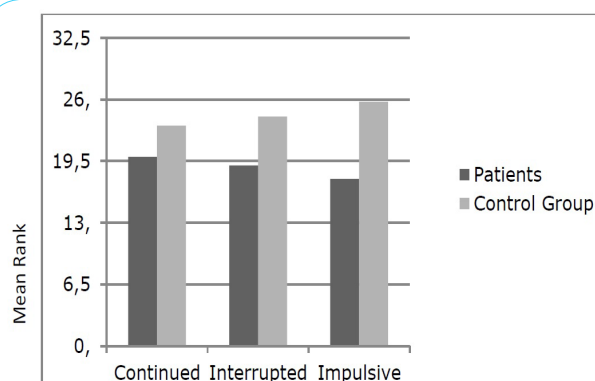


Figure 4: Mean rank of burnout patients and control group of the variables Continued, Interrupted and Impulsive (Phrasing).

These results indicate that burnout patients have fewer inner impulses. Probably their inner impulses were overwritten by impulses from the environment and with time they can't be perceived anymore. So burnout patients behave how they should behave, i.e. they show more or fewer movements, continued and – like the instruction says – also show pauses, i.e. show interrupted movements, but without their own impulses, without accentuation.

Repetitions, Sequences and Variations

Within the Phrasing, the subcategories Repetitions, Sequences and Variations were shown significantly less often from the burnout patients compared to the control group (Table 7, Figure 5). So, the mean rank of the Repetitions Phrasing of the patients is 17.5 and of the control group is 25.9. The mean rank of the Sequences Phrasing of the patients is 17.3 and of the control group is 26.1. And the mean rank of the Variations Phrasing of the patients is 16.4 and of the control group is 27.1 (Figure 5).

Results of the U-Test

Category	Subcategory	U Test*	P-value
Phrasing	Repetitions	U = 132.0	.01 (High sign.)
	Sequences	U = 127.5	.02 (significant)
	Variations	U = 108.0	.002 (very sign.)

Table 7: Results of the U test of the variables Repetitions, Sequences and Variations (Phrasing).

*Mann-Whitney U test ($p < .05$)

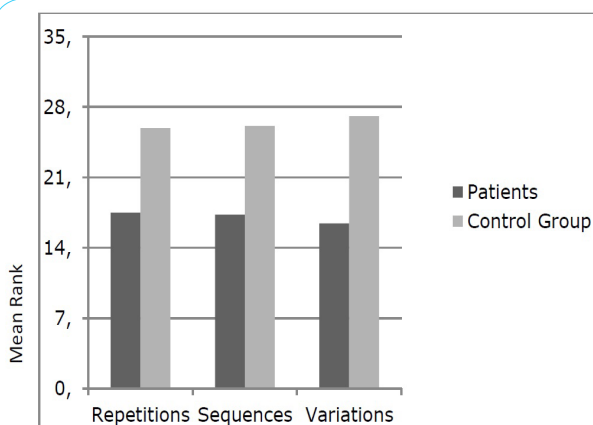


Figure 5: Mean rank of burnout patients and control group of the variables Repetitions, Sequences and Variations (Phrasing).

These results indicate that burnout patients show significantly less often Phrasing whatsoever in this subcategory. Burnout patients show movements, because they are asked to move, but they can't show any ideas in their Phrasing, hence they show few Variations. And without ideas for Sequences there cannot even be Repetitions. So burnout patients move, but they seem to move without inner ideas, without inner creativity and without inner involvement. These might have been replaced by pressures from the environment.

Summary of Phrasing

The results of the category Phrasing indicate that the own relative time which gives structure and rhythms and set impulses is weakened within the burnout syndrome. This seems to go hand in hand with the dysfunctional biological (e.g. heart rate) and psychosocial rhythms (e.g. work-life balance). So the implicit time dynamics of the living body are shown less within burnout syndrome.

Compared with Literature

Since there are no studies which analyze the movements of burnout patients whatsoever and therefore also none with Laban Movement Analysis or analysis of the time-related dynamics, the present study is the first in this area. The present study is the first to cover a very important part of burnout, which shows the high significance of the work.

Hence, the results for burnout can only be compared with other mental disorders. Very interesting of course, is the comparison with depression: And - similar to the present study - Welsche [14] found that female patients with depression show mainly Sudden but fewer Sustained movements, i.e. although patients with depression seem to be decelerated - like burnout patients in the last state - in fact they show fewer Sustained movements.

Also, anorexia nervosa seems to imply a distorted use of time [13]. Burn [12] found mainly the Sustained Time Effort element. Apparently, but not necessarily in contrast to that, Lausberg et al. [7] found in anorexia nervosa mainly the Sudden Time Effort element in comparison with a heterogenic group of psychosomatic disturbances. This indicates that not only the burnout syndrome implies disturbances related to the Effort Time. Ciompi [1] or Fuchs [3] already stated that various mental disorders are connected to disturbances in the relationship to time.

For the category Phrasing, no results can be found in literature related to mental disorders. But this would be very interesting if investigating time-dynamics of movements. So, the time-dynamics of movements, in particular, have not been investigated yet in any mental disorder whatsoever. This again shows the high significance of the present study.

Conclusion

In the present study, the movement behavior, especially the time-dynamics of hospitalized burnout patients in comparison to a healthy control group, was analyzed to find potential differences in time-related parameters within the movement behavior. The instrument of analysis was LMA, which is a diagnostic instrument in dance and movement therapy and a scientific instrument of movement behavior. The analyzed categories were the time-related Effort Time and Phrasing. Variables and their rating grades – the coding system – were tested in a pilot study.

The rater-agreement (inter-rater reliability) of the certified and trained movement analysts was substantial to almost perfect in all variables: Kappa = .65-.92 ($p < .001$), (.457 \geq 95% CI \leq 1.04). So, the consistency between the two raters was good enough to guarantee objectivity. And thereby, also the reliability and quality of the test is proved and given. The validity can be considered to be a logical validity because movement behavior is analyzed by a proven movement observation analysis.

The results show that burnout syndrome influences the time-related parameters within the movement behavior of patients. Which means that Sustained movements as well as Rhythm, Impulses, Repetitions, Sequences and Variations are affected and less shown compared to the control group. Not significantly different are: Sudden/Fast, Metric and Ametric, Free-Rhythmic, Continuous and Interrupted movements.

So, burnout patients have deficits in their time-related movement behavior. They have a lack of the Sustained Time Effort element, which means that they don't indulge in the attitude but struggle with it. The results related to the Phrasing indicate that the own relative time - which gives structure and rhythms and sets impulses - is weakened within the burnout syndrome. So, the implicit time dynamics of the living body are shown less within burnout syndrome.

Compared to other studies, it can be said that the present study has high significance as there is a lack of scientific work that analyses the movement behavior of burnout patients in general and specifically with LMA or an analysis of the time-related dynamics. The present study is the first in this area, so it has covered first a very important part of a human being referring to burnout. Hence, the results referring to the Effort Time can only be compared with results from female depressive patients, who - similar to the burnout patients - show mainly Sudden movements, but fewer Sustained movements i.e. although patients with depression seem to be decelerated - like burnout patients in the last state - in fact they show fewer Sustained movements. But in this survey there are no results referring to the category Phrasing.

The findings of the present study could provide new starting points for preventive and therapeutic interventions for burnout. So, movement behavior, especially time-related parameters within movement can be starting points for interventions with burnout patients. Thus, to strengthen the own relative time and inner rhythms again and to widen the possibilities referring to time-dynamics and the domain time in general.

Further research is advised as it is not clear if burnout syndrome implies disturbed time-dynamics or if these have implications for mental problems, i.e. it is not yet definitively clear if burnout is the reason or the consequence.

Competing Interests

The authors declare that they have no competing interests.

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Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (GZ. 39/5/63 ex 2014/15, 08.01.2015) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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