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Companies in judicial reorganization: An analysis of print management in management reports

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ABSTRACT
Print management in financial reports is a mechanism to change the user's perception of accounting information, directing them to the understanding desired by the firm's management. In judicial reorganization scenarios, financial reports can be used as an instrument to legitimize the condition of the firm or the chain of events that led it to this condition. This research aims to verify whether there is characteristic evidence of print management in the management reports of publicly-held companies listed on B[3] that entered the judicial reorganization process in the period between 2014 and 2019. The set of data analyzed are from companies that obtained approval of their request for judicial reorganization in the period with management reports published on the CVM website. 66 reports from 11 companies were analyzed in the periods of 3 years before and 3 years after the judicial reorganization process. For analysis, two print management metrics were adopted, the TOM and the Flesch Readability Index (IFLF). The data were analyzed descriptively and by non-parametric correlation instruments. The result of the analysis showed that there is a change in the print management (TOM) of the accounting narratives with a tendency to neutrality from the third year to the first year before the judicial reorganization process of the analyzed firms. The result of the survey made it possible to consider that companies tend to reduce the positive TONE of accounting narratives as they approach a scenario of judicial reorganization, and that after this scenario there is a tendency to return to the management of the printing of reports. The results of this study also contribute to the perception of market agents about possible changes in the narratives of companies' accounting reports when their indicators tend to scenarios of financial difficulties.

Keywords: Print management, Judicial reorganization, Legitimacy.

INTRODUCTION

In 2020, there were 99,010 deaths from brain accident in Brazil, according to data from the Mortality Information System of the Ministry of Health – DATASUS, presenting itself as the main cause of death and neurological impairments (Sbavc, 2023).

According to Zhao et al., (2021) stroke is the predominant cause of cognitive deficits and disabilities, which is responsible for 5.2% of all deaths worldwide.

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The World Health Organization (WHO) reports stroke in such a way that it is a rapid development of clinical signs of focal or global disorders of brain function, of vascular origin, which results in changes in the cognitive and sensorimotor planes, according to the extent and area of the lesion (Santos et al., 2021).

It is a disease that predominantly affects middle-aged adults, blacks, men, and the elderly (Santos et al., 2020). Among the causes that predispose a person to suffer a stroke are non-modifiable factors that affect age, sex, race, and heredity (Fernandes et al., 2022).

In stroke, the modifiable risk agents are smoking, inadequate nutrition, hypertension, obesity, diabetes mellitus, and physical inactivity (Guzik; Bushnell, 2017). The prevention of stroke is lifestyle change (Santos et al., 2020).

The symptoms present as headache, mental confusion, altered vision, muscle weakness, difficulty in communication and comprehension skills, gait deficit and balance. The diagnosis is made through computed tomography (CT), magnetic resonance imaging (MRI) and cerebral angiography (Barreto, 2019).

The level of mortality is very high and when the individual does not die, he may be left with sequelae, with limitation of activities of daily living (ADL), intellectual, aphasia, hemiparesis (muscle weakness or unilateral paresis), hemiplegia and consequently the pathology causes a high financial cost (Oliveira et al., 2020).

The physiotherapist works by rehabilitating patients with cerebrovascular accident (CVA), due to the sequelae of the pathology that affects the motor and sensory region, gait, muscle strength and proprioception, it is important because it helps to minimize damage and avoid secondary complications (Martins et al., 2022). However, after the patient's clinical condition stabilizes, it is necessary that rehabilitation be started as soon as possible, so that the patient's prognosis is effective (Santos et al., 2020).

The professional aims to promote quality of life (QoL), improve activities of daily living (ADLs), gain muscle strength, reduce the patient's pain level, provide gait, optimize proprioception, reduce the flexor pattern. The treatment plan uses kinesiotherapy through active and passive exercises of the lower and upper limbs for gait training, improvement of muscle strength, balance and stretching (Oliveira et al., 2020).

Proprioceptive neuromuscular facilitation or Kabat method is based on the application of spinal and diagonal facilitating movement schemes that use the agonist muscles to favor the weaker ones (Chay, 2024).

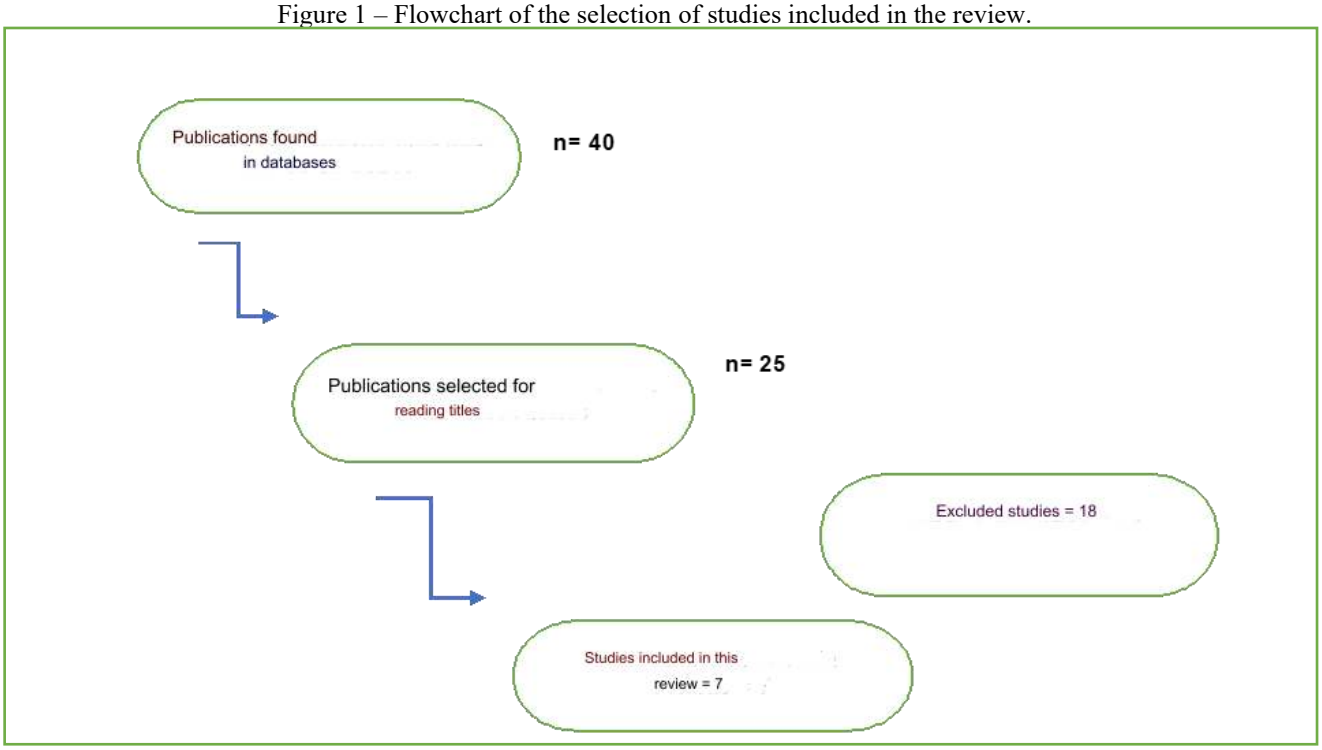
The objectives are to clarify proprioceptive neuromuscular facilitation in the treatment of patients with post-stroke.

METHODOLOGY

It is an integrative study of literature, in which articles published from 2016 to 2023 in Portuguese and English were used. Articles were searched in the Scientific Electronic Library Online (SciELO), VHL, PubMed, Latin American Literature in Health Sciences (LILACS), PEDro. The keywords used were "physiotherapy", "fnp", "stroke".

According to the descriptors, 40 articles were initially found, of which 25 adjusted to the inclusion processes filtered in the database, progressing to the analysis of the titles, continuing to exclude duplicates in the database, which were 18 articles and 7 studies were included to argue the established theme. Figure 1 specifies the selection methods.

Figure 1 – Flowchart of the selection of studies included in the review.



Source: Prepared by the authors

RESULTS AND DISCUSSION

Cerebrovascular accident (CVA) is divided into ischemic when there is an obstruction of the artery preventing the passage of blood to the brain, and hemorrhagic, resulting from the rupture of a vessel in the brain tissue and both can leave permanent sequelae (Silva et al., 2020).

Herman Kabat developed in 1954 the proprioceptive neuromuscular facilitation (PNF) procedure for the treatment of poliomyelitis, demonstrating efficiency in the most diverse diseases, specifically stroke (Santos et al., 2021).

Its purpose is to allow functional movement, through the inhibition, strengthening and relaxation of muscle groups, in this way they use eccentric, concentric and static muscle contractions,

established with graduated resistance and facilitatory procedures, adjusted to meet the patient's needs (Silva et al., 2020).

Soon after the selection of the research for the investigation, with the use of the study extraction instrument, Chart 1 was generated, which shows the data of the articles regarding the information on title, author, methodology and results of the 7 selected studies.

Chart 1 – Presentation of the characteristics and information of the studies in this review (continued).

TITLE	AUTHOR/YEAR	METHODOLOGY	RESULTS
Proprioceptive neuromuscular facilitation in gait in patients with sequelae of stroke.	Santos et al 2016.	Cross-sectional study	The conduct was performed by a single physiotherapist in two weekly sessions lasting 45 minutes, totaling 10 consultations, around five weeks. In the present study, the patients showed great improvement in gait, becoming aware of and maintaining the functionality of the dorsiflexion movement.
Physical therapy care in a patient with sequelae of stroke: Experience report.	Fernandes et al, 2022.	Qualitative research study.	17 physiotherapy sessions were held at the IESC/FAG Physiotherapy School Clinic, from 04/15/2019 to 08/26/2019. Global stretching, proprioceptive neuromuscular facilitation (PNF), strengthening, Frenkell (Balance and proprioception), gait training were used. There was improvement in the gain of range of motion (ROM), strengthening of the entire musculature, increased balance, independent gait and independence in activities of daily living (ADLs).
Proprioceptive neuromuscular facilitation and mirror therapy in the lower limbs of a hemiparetic patient.	Silva et al, 2020.	Case report.	A 53-year-old female patient was diagnosed with hemorrhagic stroke. The home physiotherapy sessions took place three times a week lasting one and a half hours each session, held over a period of five months, totaling 65 consultations, using mirror therapy and the PNF method. The association of these techniques obtained benefits in several aspects, both for motor learning, gain of muscle strength and improvement of motor control, which favored good mobility of the patient.
Functional electrostimulation associated with proprioceptive neuromuscular facilitation of the trunk in individuals with sequelae of ischemic stroke.	Oliveira et al, 2020.	Controlled pilot clinical trial.	Studies were carried out with 4 individuals, three women and one man, the control group was submitted to PNF and the experimental group used proprioceptive exercises associated with functional electrostimulation. It is noteworthy that the use of functional electrical stimulation at the motor points of the external oblique and latissimus dorsi muscles, associated with trunk PNF, was effective in gaining postural control, proprioception and relative mobility gain of the affected limbs.

Neuromuscular Facilitation-Based Proprioceptive Physical Therapy in Improving Balance and Gait in Patients With Chronic Stroke	Nguyen et al, 2022.	Systematic review and meta-analysis.	The included studies were not restricted to only randomized controlled trials published in English, thus offering a more comprehensive understanding of the effect of the PNF intervention in the published literature related to balance and gait in patients with chronic stroke. More than 6 months after stroke onset, PNF can still benefit patients by improving balance and gait skills. In particular, pnf focusing on trunk control in stroke patients may improve balance function and walking ability.
Proprioceptive neuromuscular facilitation to improve motor outcomes in older adults with chronic stroke.	Cayco et al., 2019.	Case report.	This is a case report evaluating 4 older adults (mean age - 64.75) with chronic stroke (more than 6 months) after the implementation of a 6-week proprioceptive neuromuscular facilitation-based program. With 1 hour of therapy, 3 times a week. Positive results were observed in balance, strength and mobility in all cases. Proprioceptive neuromuscular facilitation can modify motor outcomes to decrease the risk of falls in older adults with chronic stroke.
Efficacy of pelvic proprioceptive neuromuscular facilitation techniques on balance and gait parameters in patients with chronic stroke: a randomized clinical trial.	Boob; Kovela, 2022.	Randomized clinical trial.	The participants (n=30) were stroke survivors who met the inclusion criteria for the research and were divided into two groups. The regimen lasted four weeks and lasted 30 minutes every day. Patients were evaluated at the beginning and end of treatment. In both groups, pre- and post-intervention outcome measures were recorded and data were analyzed. Pelvic PNF along with task-oriented exercises have proven to be beneficial and can aid in the restoration of balance and gait parameters as a result of normalizing pelvic geometry and symmetry in stroke patients.

Source: Prepared by the authors

According to Santos et al., (2016) a cross-sectional study was carried out on PNF, in which they presented good results in individuals with sequelae of stroke, the treatment was established to improve the motor function of gait and the functionality of these patients. By performing PNF to the muscles of extension of the hip joint, it was noticed that there was an improvement of around 60% in voluntary isometric contraction and increase in ROM, improvement in gait and awareness to maintain the functionality of the dorsiflexion movement was observed.

In the qualitative research study by Fernandes et al., (2022), the PNF method was used in ten sessions, performed on the upper and lower limbs. In which there was an improvement in the response of motor control, gain in flexibility and increase in muscle strength. In continuity with the FNP, fine and gross motor skills were performed in five sessions. In view of this, the conducts associated with other physiotherapy techniques such as stretching, gait training, motor coordination, Frenkel method for proprioception were related and the patient had improvement in the gain of range

of motion (ROM), strengthening of all the muscles, increased balance, independent gait and improvement of ADLs.

According to Silva et al., (2020) carried out a case study that designed to evaluate the effectiveness of combining the techniques of ET (mirror therapy) and PNF in a hemiparetic patient after hemorrhagic stroke. In view of the facts mentioned, it is of paramount importance to conclude that the combination of these two methods is beneficial in several aspects, both for motor learning and muscle strength gain, which contributed to the patient's good mobility.

In the study by Oliveira et al., (2020), a pilot controlled and randomized clinical trial was carried out in which the effectiveness of functional electrostimulation (FES) correlated with proprioceptive neuromuscular facilitation in postural control and balance of individuals with sequelae of ischemic stroke was presented. Therefore, the use of the FES at the motor points of the external oblique and latissimus dorsi muscles, together with the trunk PNF, was effective in gaining postural control, proprioception and relative mobility gain of the affected limbs.

In the study by Nguyen et al, (2022) PNF reports positive results in improving pain, ROM, strength, muscle endurance, coordination and has been widely used for early rehabilitation of the acute or subacute phases to improve motor functions of stroke patients. The results obtained showed that PNF-based physiotherapy has positive points in improving balance and gait speed in individuals approximately up to 6 months after a stroke.

According to Cayco et al., (2019) demonstrated that the PNF method combined with neuroplasticity was effective in improving the motor outcomes of four elderly people with chronic stroke. The results were positive in balance, strength and mobility, so that patients with a shorter duration of chronic stroke and with fewer comorbidities benefited more from FNP.

According to Boob; Kovela, (2022). The surprising result of the research demonstrates that the pelvic PNF technique with task-oriented lower limb activities in people with chronic stroke in group A were performed on the affected side, with the hips flexed at 100° and the knees flexed at 45°, this rehabilitation was important to assist in anterior pelvic elevation and posterior pelvic depression and had better results than only task-oriented activities in group B which were Activities such as standing on a swing board, walking forward, walking backwards, crossing obstacles, walking on an uneven surface, climbing stairs, and walking on a ramp. Therefore, it was observed that the recovery of patients in group A was faster, which improved their QoL.

CONCLUSION

By analyzing the facts mentioned above, it is observed that the FNP aims to improve the QoL of people affected by stroke, and to provide ADLs, is easy to handle and acts on functional

movement, through the inhibition, strengthening and relaxation of muscle groups because they use eccentric, concentric and static muscle contractions. The physiotherapist works by rehabilitating patients with stroke, due to the sequelae of the pathology that affects the motor and sensory region, gait, muscle strength and proprioception, it is of fundamental importance because it helps to minimize damage and avoid secondary complications.

REFERENCES

Barreto, E. V. B. (2019). Aplicação da Facilitação Neuromuscular Proprioceptiva em Pacientes Após Acidente Vascular Encefálico.

Boob, M. A., & Kovela, R. K. (2022). Effectiveness of Pelvic Proprioceptive Neuromuscular Facilitation Techniques on Balance and Gait Parameters in Chronic Stroke Patients: A Randomized Clinical Trial. Cureus, 14(10), e30630. https://doi.org/10.7759/cureus.30630

Cayco, C. S., Gorgon, E. J. R., & Lazaro, R. T. (2019). Proprioceptive neuromuscular facilitation to improve motor outcomes in older adults with chronic stroke. Neurosciences (Riyadh), 24(1), 53-60. https://doi.org/10.17712/nsj.2019.1.20180322

Chay Hernandes, J. J. (2024). Beneficios terapéuticos del ejercicio en cinta rodante para la marcha en personas mayores de 60 a 65 años de edad post accidente cerebrovascular, basado en una revisión bibliográfica (Tese de Doutorado).

Dorsa, A. C. (2020). O papel da revisão da literatura na escrita de artigos científicos. Interações (Campo Grande), 21, 681-683.

Fernandes, A. M., et al. (2022). Atendimento de fisioterapia em uma paciente com sequela de acidente vascular encefálico: relato de experiência. Multidebates, 5(3), 108-117.

Guzik, A., & Bushnell, C. (2017). Stroke Epidemiology and Risk Factor Management. Continuum (Minneap Minn), 23(1, Cerebrovascular Disease), 15-39. https://doi.org/10.1212/CON.0000000000000416

Martins, E. R., et al. (2022). Abordagem fisioterapêutica em pacientes com acidente vascular encefálico (AVE). Revista de Casos e Consultoria, 13(1), e29139-e29139.

Nguyen, P. T., Chou, L. W., & Hsieh, Y. L. (2022). Proprioceptive Neuromuscular Facilitation-Based Physical Therapy on the Improvement of Balance and Gait in Patients with Chronic Stroke: A Systematic Review and Meta-Analysis. Life (Basel), 12(6), 882. https://doi.org/10.3390/life12060882

Oliveira, T. N., Lima, A. K., & Uchoa, S. M. (2020). Eletroestimulação funcional associada à facilitação neuromuscular proprioceptiva de tronco em indivíduos com sequelas de acidente vascular encefálico isquêmico. Brazilian Journal of Development, 6(11), 91384-91395.

Potter, T. B. H., Tannous, J., & Vahidy, F. S. (2022). A Contemporary Review of Epidemiology, Risk Factors, Etiology, and Outcomes of Premature Stroke. Curr Atheroscler Rep, 24(12), 939-948. https://doi.org/10.1007/s11883-022-01067-x

Santos, K. K. S., et al. (2020). Facilitação neuromuscular proprioceptiva em pacientes com acidente cerebrovascular. Revista Neurociências, 28, 1-17.

Santos, E. M., et al. (2021). Efeitos da facilitação neuromuscular proprioceptiva na melhora do equilíbrio de pacientes acometidos por AVC: uma revisão de literatura. Revista Vitrine, 1(1).

Santos, N. S., Foss, M. H. D. A., & Ferreira, L. L. (2016). Facilitação neuromuscular proprioceptiva na marcha em pacientes com sequela de acidente vascular encefálico. Arq. Ciênc. Saúde, 23(2), 87-91.

Sociedade Brasileira de AVC. (2024). Números do AVC. Retrieved April 5, 2024, from https://avc.org.br/numeros-do-avc/

Silva, S. L., et al. (2020). Facilitação neuromuscular proprioceptiva e a terapia do espelho em membros inferiores de um paciente hemiparético: Proprioceptive neuromuscular facilitation technique and mirror therapy in lower limbs of a hemiparetic patient. Revista FisiSenectus, 8(1), 80-95.

Zhao, Y., et al. (2022). Neuronal injuries in cerebral infarction and ischemic stroke: From mechanisms to treatment. International journal of molecular medicine, 49(2), 1-9.