

Clinical Validation of the Nursing Diagnosis of Labile Emotional Control after Mild and Moderate Traumatic Brain Injury

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ABSTRACT

Objective: To clinically validate the diagnosis of Labile Emotional Control (00251) after mild and moderate Traumatic Brain Injury (TBI).

Methods: This descriptive study was conducted with 40 patients (two groups of mild and moderate TBI) to evaluate 13 defining characteristics based on the Fehring model.

Results: Four and five major characteristics were identified for mild and moderate TBI, respectively. The total diagnosis score was 0.74 on NANDA-I Taxonomy.

Conclusion: This validation of the major defining characteristics demonstrates the impact of TBI on the affective/emotional aspects of patients, which emphasizes the need to provide assistance for these individuals.

Implications for nursing practice: This study contributes to the improvement of nurses' practice and quality of assistance provided to TBI patients.

INTRODUCTION

Traumatic brain injury (TBI) pertains to any lesion resulting from an external trauma, which leads to anatomic abnormalities of the skull, such as fractures or laceration of the scalp, as well as the functional impairment of the meninges and brain. It leads to temporary or permanent brain alterations that may be cognitive or functional in nature^[1].

The Glasgow Coma Scale^[2] is commonly used to assess the severity of TBI. It classifies TBI as mild (13 to 15 points), moderate (9 to 12 points) or severe (3 to 8 points), and is considered to be an indicator of the cares required by a person with TBI^[3].

Mild TBI is common and it affects about 42 million people worldwide. Epidemiological studies have reported that mild TBI is a significant risk factor for neurodegenerative diseases, but these associations are not yet well-established and require more research. In contrast, moderate or severe TBI are proven to be a risk factor for neurodegenerative diseases such as dementia^[4].

After the trauma, the prevalence of affective lability varies substantially based on the type of case, assessment methods, lesion severity, and time elapsed since the lesion until the assessment evaluation. Among those with mild TBI, affective lability can be high in the first week, until three months after the trauma^[5].

TBI is associated with a variety of early and late behavioural disorders after the brain injury, including post-traumatic behavioural dyscontrol, which progresses with disinhibition and aggression and may be chronic and disturbing^[6]. In addition, the affective lability, irritability, and associated symptoms such as annoyance, impatience, anger, and short-temperedness tend to increase regardless of the severity of TBI^[7].

NANDA's Taxonomy II-I^[8] defines "labile emotional control" as uncontrollable bursts of exaggerated and unintended emotional expression. It has the following defining characteristics: avoiding professional situations, avoiding social situations, absence of eye contact, excessive crying without feeling sad, uncontrollable crying, involuntary crying, difficulty in using facial expressions, embarrassment regarding expression of emotions, expression of emotions that are incoherent with the triggering factor, tears, excessive laughter without feeling happy, uncontrollable laughter, and involuntary laughter.

A nursing diagnosis is a clinical judgment about a human response to conditions of health/process of life, or a vulnerability to such a response from an individual, a family, a group, or a community^[8].

Thus, validation studies of a nursing diagnosis are similar to procedures used to obtain the validity and reliability of measure instruments. In such cases, validity refers to the degree to which a measuring instrument exactly assesses what it is supposed to measure, and reliability is the accuracy with which the instrument produces the same results on repeated application^[9].

It is emphasized that the findings of the present study were included in the most recent update of NANDA-I, and its validation contributes to the creation of protocols in nursing care and care guidance of people with mild and moderate TBI and their families.

PURPOSE OF THE PRESENT STUDY

The objective of this study was to perform a clinical validation of the nursing diagnosis of "labile emotional control" in patients with mild and moderate TBI using Fehring's model.

METHODS

The clinical validation of the diagnosis of "labile emotional control" was performed based on the model proposed by Fehring^[10]. The model of clinical validation is based on obtaining evidence on the existence of the diagnosis of interest in the real clinical environment. Fehring^[10] proposed two models derived from the nature of the nursing diagnosis, physiological or cognitive/affective^[11].

In this study, it was used Fehring's modified model known as "Model of clinical evaluation focused on the patient" for the evaluation of the cognitive or affective diagnosis. In this model, the researcher conducted direct clinical observations of the patients through interviews and/or a questionnaire^[10].

The convenience sample consisted of 40 patients with TBI, subdivided into two groups: mild TBI (n = 20) and moderate TBI (n = 20), treated in the outpatient clinic of the Hospital University of Sergipe Federal, Brazil, from August to September 2016. This study was a part of the project REVIVA/LITRAUMA (giving lives a new meaning, Academic League of Trauma), in which a multidisciplinary team assists patients in the chronic phase.

The inclusion criteria were as follows: being aged 18 years or over, and having the cognitive condition and verbal ability to meet requests at the time of application of the evaluation instruments. Patients with severe TBI, psychiatric and mood

disorders prior to the TBI, disorientation and cognitive impairments at the time of interview, after application of the *Breve de Avaliaçao Psiquiátrica* (Brief Psychiatric Rating Scale-BPRS-anchored) to verify the same, were excluded from the sample.

All ethical and legal aspects of research with humans were upheld according to Resolution No 466/12 of the National Health Council of the Ministry of Health. Additionally, the study was approved by the Research Ethics Committee of the Federal University of Sergipe (Opinion no. 1.486.065).

The data collection instrument was a semi-structured questionnaire composed of two parts. The first part comprised the patient's identification data, while the second referred to the defining characteristics described in NANDA-I [8] regarding the nursing diagnosis of "labile emotional control," rated on a 5-point Likert scale (1: very characteristic of me; 2: pretty characteristic of me; 3: somewhat characteristic of me; 4: slightly characteristic of me; 5: not characteristic of me at all).

Based on the defining characteristics identified in the literature review, operational definitions were developed for the present study. Subsequently, a panel of 5 nurses with PhD in TBI, a psychiatrist, and a psychologist in the area of emotions evaluated the questionnaire to validate the reliability of the elaborated concepts.

The defining characteristics were validated according to the extent to which they represented the patients who received a nursing diagnosis of "labile emotional control." In the actual survey, the patients rated the extent to which the manifestations listed were relevant to their behavioral and emotional state of health after TBI.

For the analysis, the weighted average (WA) of the scores devised by Fehring [10] were used, and the characteristics with a score ≥ 0.80 were classified as major characteristics, those with a score between 0.50 and 0.79 were classified as secondary characteristics, and those with a score less than 0.50 were classified as irrelevant characteristics. A total score of ≥ 0.50 was considered to indicate validity of the diagnosis.

The data on categorical variables were presented as simple frequencies and percentages. To assess differences in the WA proportions, the binomial test was used, and for comparison of proportions among groups, the z test was used (two groups), with the Bonferroni correction (when there were 3 groups). The R Core Team 2016 software was used for all analyses, and significance was declared at ≤ 0.05 .

RESULTS

In total, 70% of the participants were men, with a mean age of 40 ± 14.25 years. More than half (52.5%) had received 5 to 8 years of education, followed by 40% with 9 to 11 years of education. Only 5% of the sample had more than 11 years of education, indicating an overall low educational level.

Table 1 presents the WA of the clinical validation for the mild and moderate TBI groups. In the mild TBI group, according to the WA obtained, the following four defining characteristics were considered to be "major characteristics": avoiding professional situations, avoiding social situations, embarrassment regarding the expression of emotions, and expression of emotions that are incoherent with the triggering factor. Six were identified as secondary characteristics: absence of eyes contact, excessive crying without feeling sad, uncontrollable crying, involuntary crying, difficulty in using facial expressions, and tears. Finally, excessive laughter without feeling happy, uncontrollable laughter, and involuntary laughter were considered as irrelevant characteristics.

For the moderate TBI group, the five major characteristics were identified: avoiding professional situations, avoiding social situations, excessive crying without feeling sad, embarrassment regarding the expression of emotions, and expression of emotions that are incoherent with the triggering factor. Majority of the characteristics were identified as "secondary characteristics" and they included the following: absence of eye contact, uncontrollable crying, involuntary crying, difficulty in using facial expressions, tears, uncontrollable laughter, and involuntary laughter. Only excessive laughter without feeling happy was considered to be an irrelevant characteristic.

The total score for the validity of diagnosis of "labile emotional control" was 0.74 for both mild and moderate TBI groups. This score is considered valid as per the NANDA-I Taxonomy.

The scores on the defining characteristics examined in this study were compared between the evaluations carried out by the evaluator (nurse expert in TBI) and the clinical validation for the two distinct groups (mild and moderate TBI) (**Table 2**).

Table 1. Distribution of the Defining Characteristics of the Nursing Diagnosis of “Labile Emotional Control” with the Scores, According Mild and Moderate TBI Groups, Brazil, 2016.

Defining characteristics of the nursing diagnosis “Labile Emotional Control”	TBI		TBI	TBI	Test Z
	(WA)		mild	Moderate	
	Mild	Moderate	p-value*	p-value*	p-value**
			(WA < 0.5)	(WA < 0.5)	
Avoiding professional situations	0.95	0.988	< 0.00	< 0.00	0.248
Avoiding social situations	0.8	0.863	0.001	< 0.00	0.299
Absence of eye contact	0.625	0.538	0.132	0.412	0.713
Excessive crying without sadness	0.775	0.863	0.006	< 0.00	0.236
Uncontrollable crying	0.7	0.7	0.021	0.021	0.5
Involuntary crying	0.663	0.725	0.058	0.021	0.334
Difficulty in using facial expressions	0.663	0.525	0.058	0.412	0.812
Embarrassment regarding expression of emotions	0.8	0.938	0.001	< 0.00	0.099
Expression of emotions that are incoherent with the triggering factor	0.9	0.988	< 0.00	< 0.00	0.115
Tears	0.613	0.738	0.132	0.021	0.199
Excessive laughter without happiness	0.15	0.05	0.999	1	0.854
Uncontrollable laughter	0.088	0.975	1	< 0.00	< 0.00
Involuntary laughter	0.163	0.888	0.999	< 0.00	< 0.00

The defining characteristics that had discordant scores in the three validations (among those of the expert, mild TBI group, and moderate TBI group) were excessive laughter without feeling happy and involuntary laughter, which imply different perceptions between the nurse’s view as an evaluator and the view of the patient being evaluated.

Table 2. Comparison of Groups: Experts, and Mild and Moderate TBI Patients, Concerning the Defining Characteristics of the Nursing Diagnosis “Labile Emotional Control” According to the Scores Obtained in the Content Validation and Clinical Validation, Brazil, 2016.

Defining Characteristics	WA		
		Mild	TBI
	Evaluator	TBI	Moderate
Avoiding professional situations	0.694 ^a	0.950 ^b	0.988 ^b
Avoiding social situations	0.806	0.8	0.863
Absence of eye contact	0.613	0.625	0.538
Excessive crying without sadness	0.613	0.775	0.863
Uncontrollable crying	0.774	0.7	0.7
Involuntary crying	0.766	0.663	0.725
Difficulty in using facial expressions	0.605	0.663	0.525
Embarrassment regarding the expression of emotions	0.629 ^a	0.800 ^{a,b}	0.938 ^b

Expression of emotions that are incoherent with the triggering factor	0.815	0.9	0.988
Tears	0.581	0.613	0.738
Excessive laughter without happiness	0.718 ^a	0.150 ^b	0.050 ^b

DISCUSSION

Several brain diseases may involve affective deregulation, including TBI, amyotrophic lateral sclerosis, multiple sclerosis, strokes, and brain tumors, among others^[12].

In the present study on TBI patients, the major defining characteristics for labile emotional control (00251) were similar in both mild and moderate TBI groups, except for the inclusion of excessive crying without feeling sad in the moderate TBI group alone. The others major characteristics were avoiding professional situations, avoiding social situations, embarrassment regarding expression of emotions, and expression of emotions that are incoherent with the triggering factor.

The tendency to avoid professional situations is worth noting because returning to employment after TBI is an important clinical and public health concern owing to its physical, psychological, and social health implications^[13].

A comparative study of the capacity of five measures of lesion severity to predict return to work after TBI showed that lack of autonomy for locomotion, cognitive impairment, and depression were associated with non-returning to work after a year since TBI^[14].

Emotional and/or behavioural dyscontrol also lead to incapacitating consequences for patients. In some cases, such dyscontrol occurs simultaneously with other neuropsychiatric disorders, thus necessitating concomitant treatment to reduce the frequency and severity of symptoms. The control of these symptoms provides TBI victims and their families some post-trauma relief^[15].

The nature of affective lability among TBI patients varies substantially based on the type of case, assessment methods, lesion severity, and time elapsed since the lesion until the assessment evaluation. Among those with mild TBI, affective lability can be high since the first week until three months after the trauma^[5].

Irritability was reported by the patients as increased in mild degree in comparison to the mild and severe degree. In contrast, caregivers reported that irritability is independent of severity of the trauma, which suggests a discrepancy in perceptions^[7].

Patients who exhibit exacerbated irritability to everyday events after TBI do not experience it continuously, and its occurrence is independent of the context or anger as a triggering factor^[15].

Labile behavioural dyscontrol exudes the tendency to act impulsively in response to external stimuli, which may include disinhibition and aggression in addition to similar problems. This dyscontrol can occur concomitantly with labile emotional control, and is characteristic of neuropsychiatric diseases^[16].

In the present study, excessive crying without feeling sad was listed as a primary characteristic only in the moderate TBI group. Emotional dyscontrol is a common consequence of TBI, and it includes pathological laughter, affective lability, and irritability as some of the manifestations. Such dyscontrol is an acute and chronic problem common among people suffering from TBI, notably, either moderate or severe^[15].

However, the symptoms of pathological laughing and crying are not yet well-established. In the first year after trauma, the frequency of appearance of these symptoms ranges from 5 to 11%, but clinical reports indicate that this percentage may vary and decrease over the post-injury period^[17-19].

CONCLUSION

The clinical validation of the nursing diagnosis of “labile emotional control” in patients with mild and moderate TBI revealed similar results regarding the key defining characteristics.

Out of the 13 defining characteristics that were examined, four were considered as major characteristics for the mild TBI group, namely, avoiding professional situations, avoiding social situations, embarrassment regarding the expression of emotions, and expression of emotions that are incoherent with the triggering factor.

Likewise, the following major characteristics were identified for the moderate TBI group: avoiding professional situations, avoiding social situations, excessive crying without feeling sad, embarrassment regarding the expression of emotions, and expression of emotions that are incoherent with the triggering factor.

The total score for the diagnosis “labile emotional control” in the mild and moderate TBI groups was 0.74, which was considered valid according to NANDA-I Taxonomy. It is therefore concluded that there is strong evidence that the diagnosis of “labile emotional control” for patients with TBI, regardless of the severity of the trauma, should be based on the following characteristics: avoiding professional situations, avoiding social situations, embarrassment regarding the expression of emotions, and expression of emotions that are incoherent with the triggering factor. These findings suggest that labile emotional control in TBI may affect patients economically, socially and may cause change of roles and familiar disaggregation.

Implications for Nursing Knowledge and/or Language Development

“Labile emotional control” is a new finding that has been included in the 10th edition of NANDA-I (2015–2017) [8]. Because this is a recent diagnosis, and the clinical validation revealed only four and five major characteristics for mild and moderate TBI patients, respectively, there is a need for further research on urges, in particular, in the population in question, to avoid underestimation of the diagnosis.

KNOWLEDGE TRANSLATION

The clinical validation of the nursing diagnosis “labile emotional control” in patients with TBI has not been conducted until now, and its application in clinical practice will contribute to the appropriate implementation of planned interventions, in particular, in the fields of rehabilitation and care quality improvement.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

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Research & Reviews: Journal of Nursing and Health Sciences

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