VESTIBULAR REHABILITATION IN PATIENTS WITH BENIGN PAROXYSMAL POSITIONAL VERTIGO

Reabilitação vestibular em portadores de vertigem posicional paroxística benigna

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ABSTRACT

Purpose: to evaluate, by means of the dizziness handicap questionnaire, the effect of a Vestibular Rehabilitation (VR) protocol in patients with benign paroxysmal positional vertigo (BPPV), seven days after the first intervention and six months after the second intervention. **Method:** patients undergoing BPPV diagnosis confirmation by a positive Dix-Hallpike maneuver were assessed (collection) by the Dizziness Handicap Inventory – Brazilian (DHI-Brazilian) before the first intervention, after the second (seven day interval) and six months after the second one. The interventions consisted of cervical relaxation, Epley and postural restrictions were applied after the first assessment and before the second evaluation, with an interval of seven days. The results were statistically analyzed. **Results:** nine women with an average 63-year old (standard deviation 4.6). Were found in DHI-Brazilian aspects: Physical – the collection 1 a mean of 2.6a(±0.17); collection 2 of 0.82b(±0.24); collection 3 of 1.43b(±0.43) with $p \leq 0.05$; Functional – the collection 1 a mean of 1.73(±0 21); collection 2 of 0.93(±0.27); collection 3 of 1.28(±0.39); Emotional – the collection 1 a mean of 1.03(±0.24); collection 2 of 0.49(±0.23); collection 3 of 0.82(±0.36). **Conclusion:** the BPPV**,** when evaluated by the DHI-Brazilian, harms the patients in some aspects and vestibular rehabilitation, with the application of the proposed protocol, it promoted improved quality of life, with greater reduction in symptoms, seven days after the first intervention. After six months there was some reduction in the status of improvements, but it still remained in better condition comparing with the first collection.

KEYWORDS: Rehabilitation; Vestibule, Labyrinth; Vertigo

INTRODUCTION

The vertigo and paroxysmal nystagmus due to the change of cephalic position were described in 1897, by Adler and in 1921, by BARANY. Dix and Hallpike created a technique to assess vertigo and positional nystagmus, and proposed the definition of Benign Paroxysmal Positional Vertigo (BPPV) for the condition which included features[1], such as brief episodes of vertigo, nausea and/or positional nystagmus to the change of the cephalic position[2].

The vertigo triggered by rapid changes in head position causes the illusion of spinning and feeling of instability, which affects the life quality of the patients. The triggers are routine activities like getting up from a chair, lie on the bed or turn to catch some object[3].

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Considered one of the most common diseases of the inner ear[4] the BPPV is idiopathic, however, in most cases it can be caused by a traumatic brain injury, infectious labyrinthitis, vertebrobasilar insufficiency, post-surgery ear, endolymphatic hydrops, vestibular neuritis[2] or middle ear disease. The signs and symptoms are determined by the undue presence of particles of calcium carbonate resulting from the fractionation of the utricle otoliths[5].

Vestibular rehabilitation (VR) is a therapeutic option that stands out by using physiological mechanisms stimulating the vestibular system, which is applied in a practical, safe, non-invasive and without the common side effects of medicines [3, 6].

Mechanical techniques of vestibular rehabilitation are used as therapeutic options for the treatment of BPPV by providing the repositioning of statocone back to the utricle, through a logical sequence and cephalic movements.

The relaxation induced simultaneously to the manual therapy (cervical massage therapy, mobilization techniques with low-speed and small or large amplitude, and passive stretching of the cervical spine) seeks mainly to disable the central reticular formation and its effect within muscle tension and discomfort of vertigo connected to it [7,8].

Epley described a maneuver of particle repositioning of otoliths[1], which increase the labyrinthine compensation and enhance the activity of systems that participate in the balance, but it does not always have the expected effects, even if it is applied properly[6]. This maneuver consists of a series of cephalic movements that leads to the otoliths to the utricle, where they are absorbed or eliminated by the endolymphatic sac[1].

After the Epley maneuver it is recommended a posture restriction and cephalic movements after treatment in order to prevent the return of the particles repositioned to the semicircular canals[4].

Jacobson and Newman [9] designed and validated a questionnaire called the *Dizziness Handicap Inventory* (DHI), which was translated and culturally adapted and validated by Castro[10], as DHI-Brazilian, material that consists of issues of self-perception that evaluates the dizziness associated with the disability in the three domains of the patients' life: physical, functional and emotional[11]. This questionnaire is suitable for assessing the effects of treatments on BPPV[12] and can be observed that the vertigo positioning corresponds to the group of vestibular disorders that usually has good results with improvement and healing procedures for vestibular rehabilitation[13].

This way, the aim of this research was to verify, through the dizziness handicap questionnaire, the effect of a protocol of VR in patients with BPPV, seven days after the first surgery and six months after the last intervention.

METHOD

The study was a quantitative, descriptive, randomized one. The selection of the sampling was random and not probabilistic. There was the inclusion of patients diagnosed with BPPV, from their background and the confirmation of the diagnosis during the admission. We excluded those who reported a history of neurological disorders, infectious diseases, tumors, central vestibular disorders, hearing loss and reports of psychiatric disorders. Patients were evaluated and treated in 2009, at a rehabilitation center university in São José do Rio Preto.

During admission, the diagnostic confirmation was performed by the Dix-Hallpike maneuver [14] (Figure 1) considered positive when it triggered vertigo and nystagmus in changing the individual's position from sitting to lying with the head propped below the horizontal plane, with a 45 ° rotation of the head to the side to be tested with latency of the rotatory nystagmus for four to five seconds in the duration of about thirty to forty second[8], followed by the patient's evaluation.

The assessment procedure was performed by applying the Brazilian DHI questionnaire[10], validated tool of easy understanding and application and reliable to get health status and functional capacity of patients with vestibular disorders. The application was made in three stages: in the first session during the pre-intervention period (sample 1), second session, after seven days, during the

Figure 1 – Dix-Hallpike Manouver (Baloh [14])

post-intervention period (sample 2), and six months after sample 2 (sample 3) based on Sridhar S, Panda N, Raghunathan[15], being a period without any specific guidance, considered "time without intervention."

Patients were instructed to answer the questionnaire before the 1st sample, dealing with the interference of BPPV in their lives until the beginning of this study, for the 2nd sample, they answered about the differences noted from the first session to the end of treatment and at the 3rd sample the answers related to the six months after the last intervention. These samples were named as 1, 2 and 3 respectively.

Patients were instructed to answer the questionnaire before sample 1, dealing with the interference of BPPV in their lives until the beginning of this study, as in sample 2 they answered regarding the differences noted in the first session to the end of treatment and sample 3 they answered about the six months after the last intervention.

The Brazilian DHI is a questionnaire with 25 questions (Figure 2) and the score is done by adding the points and the closer to 100, the greater the negative interference of dizziness on the life quality of the individual, in other words, the higher is the handicap for dizziness. The answers are scored zero to "no" (absence of symptoms/difficulties), two for "sometimes" (occasional presence of symptoms/

01. Does looking up worsen your dizziness?
02. Do you feel frustrated due to your dizziness?
03. Do you avoid work/leisure trips due to your dizziness?
04. Does walking in the supermarket aisle worsen your dizziness?
05. Do you have difficulties standing up or lying down, due to your dizziness?
06. Does your dizziness significantly restrict you from social activities such as going out to have dinner, going to the movies, dancing or going to parties?
07. Do you have difficulties to read due to your dizziness?
08. Does your dizziness worse when you play more difficult activities such as sports, dancing, and household activities such as sweeping doing the dishes?
09. Are you afraid of going out without someone with you due to your dizziness?
10. Do you feel ashamed due to your dizziness?
11. Do quick head movements worsen your dizziness?
12. Do you avoid high places due to your dizziness?
13. Does rolling on your bed worse your dizziness?
14. Is cleaning your house difficult due to your dizziness?
15. Are you afraid people will think you're drunk or drugged due to your dizziness?
16. Is it difficult for you to go for a walk due to your dizziness?
17. Does walking on the sidewalk worse your dizziness?
18. Is it difficult for you to concentrate due to your dizziness?
19. Is it difficult for you to walk in your house in the dark due to your dizziness?
20. Are you afraid to be home alone due to your dizziness?
21. Do you feel helpless due to your dizziness?
22. Does your dizziness affect your family relationships?
23. Do you feel depressed due to your dizziness?
24. Does your dizziness interfere with your work or house responsibilities?
25. Does bowing worse your dizziness?

POSSIBLE ANSWERS: YES / NO / SOMETIMES

LEGEND: Physical Aspects (questions 01, 04, 08, 11, 13, 17 and 25), Emotional Aspects: (questions: 03, 05, 06, 07, 12, 14, 16, 19 and 24). FOUR points to each YES answer, TWO points for each SOMETIMES answer and ZERO points for each NO answer. The score is made up by adding the points.

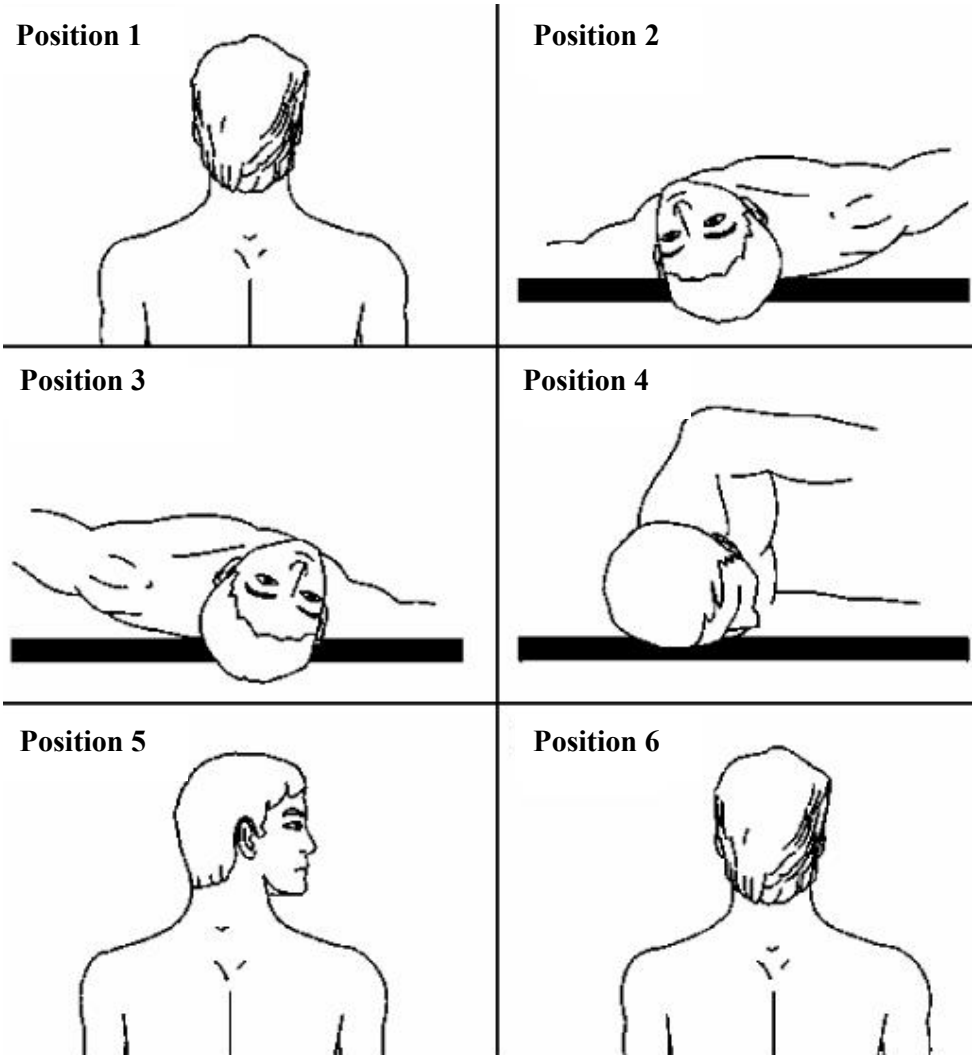
Figure 2 – *Dizziness Handicap Inventory* Questionnaire – Brazilian (Ganança et al[12])

problems) and four for "yes" (presence of severe symptoms/difficulties). Thus, the minimum score would be zero point and the maximum would be 100 points, 28 points (seven items) for the physical aspect, 36 points (nine items) for each of the other aspects, functional and emotional[11].

The intervention procedures were performed with an interval of seven days after the first assessment (sample 1) and before the second assessment (sample 2). These were fulfilled in three stages at two moments: cervical relaxation, Epley maneuver, and positioning restrictions at lying down.

The relaxation and manual therapy applied in the cervical region consisted of manual traction of the cervical region, bilateral stretching of the upper trapezius muscles, scalene, scapulae levator and sternocleidomastoid, besides the massage in the region of the upper trapezius and neck[8].

It was applied only the Epley manouver[16] Epley 16 (Figure 3) per session, as patients felt insecure when they learned that the technique would trigger vertigo. The maneuver was applied according to the semicircular canal and consisted of a series of cephalic movements to direct the particles to the utricle[2].



Patient seen by the examiner positioned behind him.
Position 1 – Patient sitting on the examination table, positioned so that when he is laying back, his head hangs off the table. The head is always being conducted and sustained by the hands of the examiner.
Position 2 – Patient is lying behind, with the assistance of the examiner, and his head is turned sideways 45 degrees to the side of the affected labyrinth (left) and when lying, it is hyperextended to the back, getting off the examination table.
Position 3 – head turned to the other side (right) at 46 degrees.
Position 4 – Head and body are turned to this side (right), so that the patient keep the eyes on the ground.
Position 5 – Keeping the head turned laterally (right), bring the patient back to a sitting position.
Position 6 – Back to head to the starting position, looking forward.

Figure 3 – Epley Manouver (Maia, Diniz and Carlese[16])

Then it was given recommendations as sleeping, sitting or lifting the upper torso 45 degrees with reclined armchair, wedges or using two pillows for 48 hours after the maneuvers, and to avoid for seven days jerky movements and those which caused dizziness, not sleeping over the affected ear and not look up or down [4]. The patients with variability in cephalic position were advised to keep the neck collar during the daily activities to prevent cephalic movements [4].

Every subject participated voluntarily after signing the informed consent of the research project approved by the Ethics Committee of the Medicine College of Rio Preto, protocol number 3141/2009.

Data were submitted to statistical analysis. The quantitative variables were obtained by analysis of variance (ANOVA) and Tukey's test to compare the results obtained in the three samples. The values were expressed in average, standard error (±) and percentage, considering $p \leq 0.05$ statistically significant.

Qualitative variables were submitted to statistical analyses using the Pearson contingency coefficient (C*) and the results between zero and one ($0 \leq C^* \leq 0.99$) were classified as high (C *> 0.66), moderate (C * = 0.33 to 0.66), null (C * = 0 to 0.33), being that the closer to one, the greater the degree of improvement.

RESULTS

The sample consisted of nine subjects, 100% being female volunteers, aged from 56 to 73 years old, average age being 63 years (standard deviation 4.6). All patients had BPPV canalolithiasis type.

Among the questioned aspects in Sample 1, the sum of analysis, it was observed that the physical was the most affected, followed by the functional and emotional, respectively. In the score of sample 2, there was improvement in all aspects, compared to sample 1, and the functional aspect had the highest score, followed by physical and emotional, respectively. In sample 3, all scores were positive in regards to sample 1, but not as effective as in sample 2. Table 1 shows the total scores of the three aspects.

The average values found in the answers in the Brazilian DHI were: Physical Appearance – Sample 1 of 2.6a (± 0.17); sample 2 of 0.82b (± 0.24), sample 3 of 1.43b (± 0.43) with $p \leq 0.05$, where "a" and "b" indicate values with significant differences; Functional aspect – sample 1 had an average of 1.73 (± 0.21); sample 2 0,93 (± 0.27); sample 3 1.28 (± 0.39); Emotional aspect – sample 1 had an average of 1.03 (± 0.24); sample 2 of 0.49 (± 0, 23); sample 3 of 0.82 (± 0.36) (Figure 4).

Regarding sample 1, there was an improvement in both revaluations, presenting in the sample 2: reduction of 68.5% of the physical aspect, 52.43% of emotional and 46.24% of the functional; and in sample 3: reduction of 45 % of the physical, 26% of the functional aspect, and 20.39% of the emotional.

Tables 2, 3 and 4 show the frequency distribution of answers from every patient according to their physical, emotional and functional, respectively.

Regarding the qualitative variables in the physical aspect it was obtained high levels of improvement in the questions 1,11,13, and moderate in 4,8,17,25;

Table 1 – Sum of physical, functional and emotional scores obtained by the Brazilian DHI in sample 1 (before the 1st intervention); sample 2 (after the 2nd intervention); sample 3 (six months after the 2nd intervention)

Pacient	1st Sample			2nd Sample			3rd Sample		
	FI	EM	FU	FI	EM	FU	FI	EM	FU
1	24	12	14	6	6	16	24	22	28
2	18	16	22	14	6	16	12	2	10
3	12	0	4	2	0	0	6	0	10
4	22	12	20	0	0	0	0	0	0
5	18	20	22	12	20	16	18	22	26
6	16	4	18	0	0	4	0	0	2
7	20	6	14	8	2	10	8	2	10
8	18	4	12	2	2	0	2	2	0
9	16	10	14	8	4	14	20	18	18
Total	164	84	140	52	40	76	90	68	104

Legend: FI = physical aspect; EM = emocional aspect; FU = funcional aspect

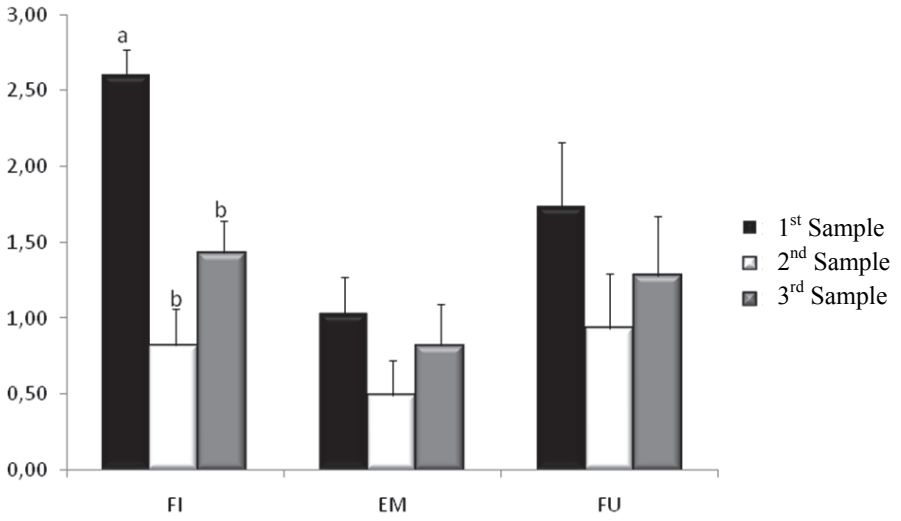


Figure 4 – Results of the average of answers on the life quality of patients with BPPV, in physical (FI), emotional (EM) and functional (FU), evaluated by DHI in three stages: sample 1 (before the 1st intervention); sample 2 (after the 2nd intervention); sample 3 (six months after the 2nd intervention) in patients with BPPV. Values are expressed as average (columns) and standard error (bars) of the patients' answers. a, b indicate values statistically significant with $p \leq 0.05$, obtained by analysis of variance (ANOVA) and Tukey test.

Table 2 – Distribution of frequencies (Freq.) of the questionnaire answers DHI, according to the physical aspect

Questions	Sample 1						Sample 2						Sample 3					
	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%
1	0	0%	2	22%	7	78%	8	89%	1	11%	0	0%	6	67%	0	0%	3	33%
4	5	56%	4	44%	0	0%	7	78%	2	22%	0	0%	5	56%	3	33%	1	11%
8	0	0%	4	44%	5	56%	4	44%	4	44%	1	11%	4	44%	2	22%	3	33%
11	0	0%	1	11%	8	89%	4	44%	4	44%	1	11%	4	44%	4	44%	1	11%
13	0	0%	5	56%	4	44%	5	56%	4	44%	0	0%	4	44%	5	56%	0	0%
17	6	67%	2	22%	1	11%	8	89%	1	11%	0	0%	6	67%	1	11%	2	22%
25	1	11%	2	22%	6	67%	3	33%	4	44%	2	22%	4	44%	3	33%	2	22%

Table 3 – Distribution of frequencies of the questionnaire answers DHI, according to the emotional aspect

Questions	Sample 1						Sample 2						Sample 3					
	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%
2	5	56%	0	0%	4	44%	6	67%	3	33%	0	0%	6	67%	3	33%	0	0%
9	4	44%	3	33%	2	22%	7	78%	1	11%	1	11%	7	78%	2	22%	0	0%
10	6	67%	3	33%	0	0%	8	89%	1	11%	0	0%	6	67%	0	0%	3	33%
15	6	67%	3	33%	0	0%	8	89%	1	11%	0	0%	5	56%	3	33%	1	11%
18	4	44%	1	11%	4	44%	6	67%	2	22%	1	11%	6	67%	0	0%	3	33%
20	7	78%	1	11%	1	11%	7	78%	2	22%	0	0%	7	78%	0	0%	2	22%
21	7	78%	2	22%	0	0%	8	89%	0	0%	1	11%	7	78%	2	22%	0	0%
22	7	78%	2	22%	0	0%	8	89%	1	11%	0	0%	6	67%	2	22%	1	11%
23	6	67%	1	11%	2	22%	7	78%	1	11%	1	11%	7	78%	2	22%	0	0%

Table 4 – Distribution of frequencies of the questionnaire answers DHI, according to the functional aspect

Questions	Sample 1						Sample 2						Sample 3					
	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%	No Freq.	%	Sometimes Freq.	%	Yes Freq.	%
3	6	67%	3	33%	0	0%	8	89%	1	11%	0	0%	9	100%	0	0%	0	0%
5	0	0%	2	22%	7	78%	6	67%	2	22%	1	11%	3	33%	3	33%	3	33%
6	7	78%	2	22%	0	0%	8	89%	1	11%	0	0%	6	67%	2	22%	1	11%
7	4	44%	4	44%	1	11%	4	44%	3	33%	2	22%	5	56%	2	22%	2	22%
12	1	11%	1	11%	7	78%	3	33%	0	0%	6	67%	3	33%	0	0%	6	67%
14	1	11%	4	44%	4	44%	6	67%	3	33%	0	0%	6	67%	3	33%	0	0%
16	5	56%	4	44%	0	0%	6	67%	3	33%	0	0%	5	56%	3	33%	1	11%
19	6	67%	1	11%	2	22%	6	67%	2	22%	1	11%	5	56%	3	33%	1	11%
24	5	56%	1	11%	3	33%	7	78%	2	22%	0	0%	6	67%	2	22%	1	11%

in the emotional levels it reached moderate levels on questions 2,9,15, 18,20,21,22,23 and null in question 10; and in the functional aspect there was a high improvement on questions 5,12; and moderate on questions 6,14,16,24 and null on questions 3,7,19 (Figure 5).

DISCUSSION

BPPV is the most common vestibular affection in the world population[1] and the distribution of the sample by gender and average age are consistent with the literature, which show the prevalence of vertigo in females[11, 18, 19]. Within the age group studied, this pathology is often a detrimental factor to the patient's life because it is associated with falls [20].

In this study it was observed that all volunteers had BPPV canalolithiasis type which is the increased density of the endolymph caused by the presence of free particles in suspension in the semicircular canals[4], as in the study done by Costa et al[17] with 13 individuals with BPPV randomly selected for convenience, and who also used the Epley maneuver as treatment, for this technique is suitable for this type of vestibulopathy[15].

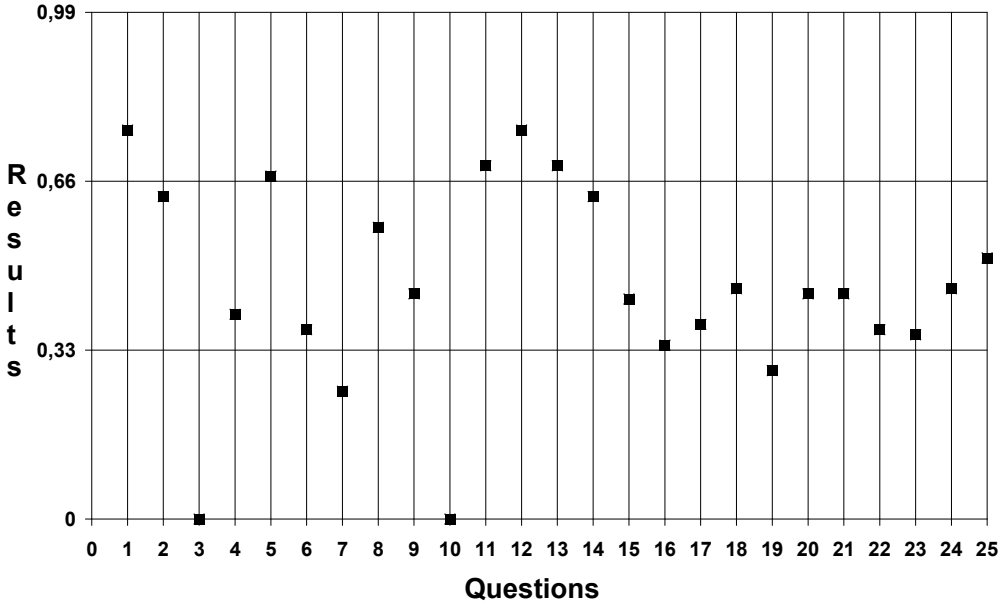


Figure 5 – Results of the qualitative variables and questions from the DHI questionnaire that evaluate the life quality, correlating the answers of the three samples through the *Pearson* coefficient (C*): sample 1 (before the 1st intervention); sample 2 (after 2nd intervention); sample 3 (six months after the 2nd intervention), being high improvement (C*> 0.66), moderate (C* = 0.33 to 0.66) and null (C* = 0 to 0.33)

In practice, it is clear that besides the involvement of the vestibular function, eye movements, complaints of dizziness, nausea and vomiting, it is common to find increased tonus of the cervical region or the entire posterior chain muscle predisposing a change in habits of the daily life, for this reason, it was deemed important to apply relaxation and manual therapy in the cervical region with the purpose of making changes in muscle tension[8].

In order to ascertain the efficacy of Epley's maneuver, Teixeira and Machado[321] verified through a systematic review, that the RV, by the Epley maneuver is effective for the treatment of BPPV when compared to placebo and/or drug treatment alone and/or non-intervention, but it suggests new studies.

The original proposal of the Epley maneuver calls for a repetition of the procedure in the same session, until nystagmus is no longer observed and the weekly repetition until the vertigo and positional nystagmus cease[2].On the other hand, Korn et al[2] performed a clinical study with 123 patients divided into two groups to compare the efficacy of Epley's maneuver. In this, it was concluded that the group I, which was subjected to a single Epley maneuver on weekly sessions, required a higher average time to abolish the nystagmus (1.5 sessions) than group II which was subjected to four Epley maneuvers in the first session (1.2 sessions) and, indicating, in regards to the sessions, being more effective to abolish the positional nystagmus. However, López-Escámez et al[22] and Kasse et al[23] found good results in nystagmus cessation, with a single maneuver per session, 65% of the sample and 50% of cases, respectively.

Thus, we chose to perform only one maneuver per session, repeated in two sessions, as when the procedure was explained to the voluntaries, they felt insecure to the maneuver, because it would trigger more discomfort in relation to vertigo at the moment of the application of the technique.

Even with the protocol with lower number of applications, compared to Epley's original proposal, there was improvement in the aspects of the DHI-Brazilian, with the application of two maneuvers with a seven-day interval between them and also an improvement evaluated six months after sample 2.

Castro et al[24] reported that scores of physical aspects evaluate the relationship between the onset and/or worsening of dizziness and eye movements, head and body in patients. The emotional aspect allows investigating frustration, fear of leaving unattended or staying home alone, frustration, worry about self-image, shame of their clinical manifestations, depression, feelings of inadequacy, concentration disturbance, change in social relations[25]. The functional aspect enables the presence of impairments in the performance of household activities, professional, social, recreational, and dependence to perform tasks such as getting around without help[26].

Regarding the score, in the sample 1 of the Brazilian DHI, the physical aspect was the most altered in this study, and reportedly, an item that had greater relevance and influence in the lives of patients, followed by the functional and emotional aspects, respectively. The fact that the scores have higher scores on the physical aspect, the initial evaluation corroborate the ones from Castro et al[24]; Handa et al[25]; Pereira, Santos and Volpe[27], showing that this aspect is what has the most impact on daily activities. Then it was found in this study, the functional aspect that matches the literature of Nishino, Granato and Campos[20] and Handa et al[25], who points this aspect with more disadvantage on the BPPV than the emotional.

Regarding the results of sample 1, Ganança et al[12] showed in their study that the vestibular system often result in anxiety associated with panic attacks, fear of going out alone and feelings of depersonalization, emphasizing the relationship between vestibular changes and emotional aspects. When related to the functional aspect, Nishino, Granato and Campos[20] pointed that patients with dizziness, deliberately restrict their trips, physical activities and social gatherings trying to reduce the risk of onset of this unpleasant symptoms, fact that is consistent with the initial assessment of the study done by Santana et al[28] in which all patients showed insecurity in performing activities of daily living involving head movement, restricting certain movements for fear of falling and/or triggering other signs and symptoms.

After applying the RV protocol, there were positive effects of the maneuvers on the life quality of patients in all aspects, corroborating studies of Castro et al[24]; Handa et al[25]; Pereira, Santos and Volpe[27] and Santana et al[28], and following the Whitney criteria[29] which were also adopted by Santana et al[30], patients went from moderate impairment on the quality of life to light.

There are doubts as to the applicability of postural restrictions after the Epley maneuver. Trying to answer this question, Simocelli, Bittar and Greters[4] demonstrated in a clinical study with 50 patients no difference between the results found between the group with and without postural restrictions as well as the studies by Ganança et al[1,] Ganança et al[31], Teixeira and Machado[21]. However, Çakir et al[32] report that every patients who underwent postural restrictions had a faster healing, for it's a factor to prevent the return of the crystals to their incorrect positioning is able to rehabilitate in less time. For

this reason this study adopted the posture restriction in all patients. The subjects in this study reported having followed the positioning guidelines for 48 hours and showed partial or complete improvement of symptoms after both interventions, evaluated seven days after the first intervention and six months after the second.

There are few studies in the clinical literature with assessments made after the application of the therapeutic protocol ceased, however, it was deemed important to report the maintenance of treatment effect after six months of a period without intervention, since this protocol demonstrated significant improvement in aspects of the Brazilian DHI.

Sridhar, Panda and Raghunathan[15] accompanied a sample of patients for a year and found that positive results were kept, and a considerably lower rate of recurrence compared with the use of a protocol placebo (10% in the group treated with the Epley maneuver against 90 % for placebo). Thus, it was deemed important to report the maintenance of treatment effects, both correlating qualitative variables in the analysis of physical, emotional and functional after six months, in addition to the important outcome after interventions.

CONCLUSION

When assessed by the Brazilian DHI, the BPPV brings harm to patients in some respects and the vestibular rehabilitation with the application of the proposed protocol improves the life quality, with greater reduction in symptoms seven days after the first intervention. After six months there was a slight reduction in the improvement, but it still remained in better condition when compared to the first sample.

RESUMO

Objetivo: verificar, por meio do questionário handicap de tontura, o efeito de um protocolo de Reabilitação Vestibular (RV) em portadores de Vertigem Posicional Paroxística Benigna (VPPB) sete dias após primeira intervenção e seis meses após a segunda intervenção. **Método**: pacientes submetidos à confirmação diagnóstica de VPPB pela positividade da manobra Dix-Hallpike foram avaliados (coleta) pelo questionário *Dizziness Handicap Inventory – brasileiro* (DHI-brasileiro), antes da primeira intervenção, após a segunda (intervalo de sete dias) e seis meses após a segunda intervenção. As intervenções constavam de relaxamento cervical, manobra de Epley e restrições posturais e foram aplicadas logo após a primeira avaliação e antes da segunda avaliação, com intervalo de sete dias. Os resultados obtidos foram submetidos à análise estatística. **Resultados**: nove mulheres com média de 63 anos (desvio padrão 4,6) fizeram parte da amostra. Foram encontradas as seguintes pontuações no DHI-brasileiro: Aspecto Físico – apresentou média na coleta 1 de 2,6a(±0,17); coleta 2 de 0,82b (±0,24); coleta 3 de 1,43b(±0,43) com $p \leq 0,05$; Funcional – apresentou média na coleta 1 de 1,73(±0,21); coleta 2 de 0,93(±0,27); coleta 3 de 1,28 (±0,39); Emocional – apresentou média na coleta 1 de 1,03(±0,24); coleta 2 de 0,49 (±0,23); coleta 3 de 0,82 (±0,36). **Conclusão:** a VPPB quando avaliada pelo DHI-brasileiro, traz prejuízos aos portadores em alguns aspectos e a reabilitação vestibular, com a aplicação do protocolo proposto, promoveu melhora na qualidade de vida, com maior redução dos sintomas sete dias após a primeira intervenção. Após seis meses houve certa redução do quadro de melhora, porém este ainda se manteve em melhores condições quando comparado à primeira coleta.

DESCRITORES: Reabilitação; Vestíbulo; Labirinto; Vertigem

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