

STUDY OF THE ACUTE AND CHRONIC EFFECTS OF MANUAL THERAPY ON THE SALIVARY MELATONIN CONCENTRATION IN STUDENTS PREPARING TO APPLY FOR THE UNIVERSITIES

Isabela V. Vieira (IC), Heloísa Ap. Ferreira (PQ), Aglécio Luiz de Souza (PQ), Fernando Canova (PQ), Dora M. Grassi-Kassisse (PQ).

Abstract

The entrance exam is a stressful experience for students. The manual therapy (MT) act as an strategy to confront the stressor agent (coping). To evaluate the effects of MT we analyzed the salivary concentration of melatonin, a counter regulatory hormone of stress, produced by the pineal gland.

Key words: melatonin, manual therapy, vestibular .

Introduction

“Vestibular”, and studies that precede it, are considered the cause of stress in students. As a way to pass through this stress a massage therapy program was proposed, since this therapeutic intervention was capable to: reduce the observed stress levels (evaluated by a questionnaire), minimize cortisol levels and increase parasympathetic tone, like shown at Ferreira, 2014 (base study for this work).

To evaluate the effects of MT, this study analyzed the melatonin salivary concentration, a counter regulatory hormone of stress, produced by the pineal gland. This hormone has multiple functions at the organism, among which the regulation of the circadian cycle stands out.

The results obtained in this study may contribute as indicators to measure the efficiency of massage therapy as a strategy of coping.

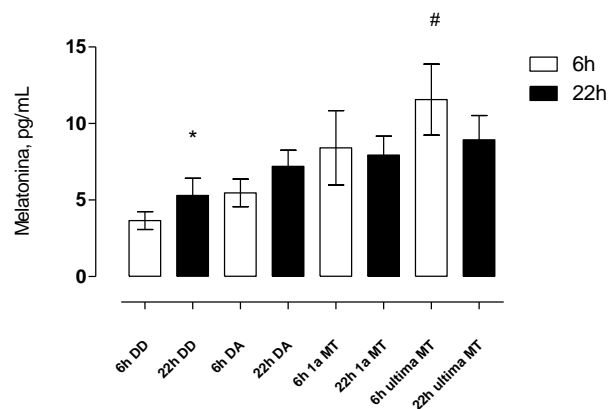
Results and Discussion

The values obtained in the analysis of the saliva (ELISA) shows that, before receiving MT treatment, the volunteers exhibited significantly higher night salivary melatonin concentration than that one collected upon waking. This difference was observed only on rest days.

On the day that the volunteers received the first session of MT, there were no significant differences between the morning melatonin concentration and **nighttime values**. However, the concentration of morning melatonin on samples collected at the end of the program was significantly higher than those collected on the same time in rest days in August.

There are no articles in the literature measuring melatonin salivary levels before and after coping strategies.

Image 1. Salivary melatonin concentration in students preparing to apply for the universities



Volunteer's Melatonin values in pg/mL on wake up time (6 a.m) and before sleep (10 p.m.), relative to rest days (DD) and active day (DA), and beginning and end of the MT program (9 weeks, from September to November). Normality identified by Kolmogorov Smirnov. Analysis by ANOVA followed by Dunnet, and: * $p < 0.05$ 22h vs 6 a.m rest day (DD) and # $P < 0.05$ 6 a.m MT last session vs 6 a.m. rest day (DD).

Conclusions

These results don't allow us to affirm that the increase of melatonin concentration on waking is directly related to the massage therapy program proposed, but we can suggest that it is related to. Additional studies are planned for the next period.

Acknowledgement

Profa. Carmen Veríssima that enabled the acquisition of the melatonin dosage kit.

¹ FERREIRA, H., Efeito de um programa de terapia manual sobre a variabilidade da frequência cardíaca e indicadores de estresse em vestibulandos, 149 f., Tese (Doutorado em Biologia Funcional e Molecular, área de Fisiologia), Universidade Estadual de Campinas, Campinas, 2014.