



EFFECT OF LAUGHTER THERAPY ON PULSE RATE AND BLOOD PRESSURE

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ABSTRACT

Background: Health is a very complex concept and depends on many factors; laughter yoga can be used as additional therapy for many chronic diseases, Laughter has positive effects on certain aspects of health and has a significant role in the management of cardiovascular health. **Aims and Objectives:** To study the role of laughter therapy on the regulation of blood pressure and pulse rate. **Materials and Methods:** A total of 100 healthy volunteers of both gender with an age group of 30–70 years were utilized to study the effect of laughter therapy in the regulation of blood pressure and pulse rate. The present study was conducted in 12 sessions with the all above volunteers for at least 1 year. **Results:** Reduction in vital parameters such as pulse rate, systolic blood pressure, and diastolic blood pressure was noted after laughter therapy. **Conclusion:** Positive effects of laughter considered as one of the additional methods for enhancement of health and to prevent cardiovascular disease.

KEYWORDS : Blood Pressure; Laughter, Pulse Rate, cardiovascular disease.

INTRODUCTION

A type of therapy that uses humor to help relieve pain and stress and improve a person's sense of well-being. It may be used to help people cope with a serious disease, such as cancer. Laughter therapy may include laughter exercises, clowns, and comedy movies, books, games, and puzzles. It is a type of complementary therapy. Also called humor therapy. Laughter can be used as part of a complementary program for promoting good health[1].

Our modern life style may cause psychosocial stresses. The psychosocial stresses activate limbic system and hypothalamus which controls the autonomic nervous system[2]. Psychosocial stresses precipitate various cardiovascular disorders by distorting basic neuroendocrine mechanism. When sympathetic nerve fibers as well as from adrenal medulla stimulated by autonomic nervous system causes increase in output of both adrenaline and nor-adrenaline lead to increase in heart rate, systolic and diastolic blood pressures[2,3]. Laughter is the best medicine. It can be effectively used as part of a complementary program for promoting good health and in the prevention and treatment of various micro vascular diseases[1]. Laughter therapy has positive effects on diabetes, the immune system, depression, loneliness, dementia, and micro vascular diseases. Current research indicates that using laughter is well accepted by the public and is frequently used as coping mechanism. Due to the significant role of laughter therapy, many laughter clubs established and suggested to practice laughter in various countries[4,5]. Today there are 6000 laughter clubs in 60 countries where people practice laughter[5].

AIMS AND OBJECTIVES: The study was undertaken to study the role of laughter therapy in the regulation of pulse rate and blood pressure.

MATERIALS AND METHODS

A total of 100 healthy volunteers of both gender with an age group of 30–70 years were taken for the study. The present study was conducted in 12 sessions with the all above volunteers for 1 year. Subject enrolled from garden – laughter club from various area of Ahmedabad and Junagadh. All the subjects were with good socioeconomic background and the consent was obtained from individual subject respectively, with prior information about the procedure of the study. The

parameters like systolic pressure, diastolic pressure, and pulse rate (PR) were measured using automatic blood pressure monitor. Data was tabulated and statistical analysis was done.

RESULTS: Total 100 healthy volunteer enrolled in study of both gender.

Parameters	Mean ± SD		
	Before laughter practice	After 6 Months laughter practice	After 12 months laughter practice
Mean PR	80.97 ± 10.16	79.15 ± 9.54	77.57 ± 9.29
Mean SBP	128.46 ± 7.34	124.88 ± 6.45	119.81 ± 5.38
Mean DBP	80.36 ± 7.59	78.54 ± 7.50	73.12 ± 8.48

PR- Pulse Rate, SBP-Systolic Blood Pressure, DBP-Diastolic Blood Pressure

Table: Distribution of mean vital parameters before, 6 months and 12 months after laughter practice

In 100 total study volunteers, mean pulse rate before and after laughter were 80.97 and 77.57 respectively. The Mean difference was 3.40. Mean SBP before and after laughter were 128.46 and 119.81 respectively. The Mean difference was 8.65. Mean DBP before and after laughter were 80.36 and 73.12 respectively. The Mean difference was 7.24. All vital parameters PR, SBP, DBP reduced after laughter practice.

DISCUSSION

Parameters like pulse pressure, systolic Blood pressure and diastolic blood pressure were decreased after laughter therapy which was correlate with Nagoor K et al [6] and Salomi S et al [7].

Laughter release of beta endorphin starts and it acts as an opiate it also affects the vascular proliferation and acts anti inflammatory, which reduces the risk and prevents cardiovascular diseases. The effective impact on well-being and consequently on the pulse was also scientifically proven in the studies on the effects of laughter on the endothelium[8,9]. Laughter significantly decreased pulse wave velocity and cortisol levels while stress significantly increased pulse wave velocity[10].

β-endorphins released by the pituitary activate μ₃ opiate

receptors which, upregulate nitric oxide synthesis to enhance production of nitric oxide. Nitric Oxide exerts a variety of cardioprotective cellular processes via cellular signaling pathways which include a cGMP-dependent pathway. CGMP-dependent pathway responsible for vasodilation and reduced platelet aggregation as well as inhibition of leukocyte trafficking for reduction of vascular inflammation leads to regulation of blood pressure and vascular tone [11,12].

The plasma levels of renin, angiotensinogen and prorenin (substances that help regulate blood pressure) was investigated in patients with type 2 diabetes to see the effects of Laughter therapy. Laughter therapy significantly reduced the plasma components of renin-angiotensin system in patients with diabetes[13]. So It can be used as non-pharmacological treatment for the prevention of diabetic microvascular complications[13,14]. Mirthful laughter may serve as a useful and important vehicle for the promotion of vascular health.

Movie clips creating mental stress shown 14 of the 20 volunteers experienced reduced blood flow in the brachial artery due to constricted blood vessels. In contrast, arterial widening was increased in 19 of 20 volunteers after watching the movie segments that generated laughter. Overall, mean upper arm flow mediated vasodilation (a measurement of blood flow through the arteries) was increased 22 percent during laughter and reduced 35 percent during mental stress[15]. Mean upper arm flow-mediated vasodilation was increased by 22% during laughter and reduced 35% during mental stress[13].

In our study we have observed all the vital parameters values like Pulse Rate, Systolic Blood Pressure and Diastolic Blood Pressure were reduced after laughter therapy compared to before therapy. Modulation of autonomic nervous system through limbic system and hypothalamus increased vagal tone on the heart lead to reduction in PR, SBP, DBP[2, 13].

CONCLUSION

Laughter is a powerful form of exercise that gives you more of a cardiovascular workout than many regular aerobic activities and considered as one of the additional Non pharmacological methods for the enhancement of good health, encouraged to control the modifiable risk factors and in treatment of illnesses.

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