EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 5
Issue: 7
393-399
Year: 2018

EFFICACY OF YOGA & NATUROPATHIC INTERVENTION VERSUS CONVENTIONAL MEDICAL MANAGEMENT ON QUALITY OF LIFE AMONG ALCOHOL DEPENDENT INDIVIDUALS – A PILOT STUDY

Vama Jain[1], Prashanth Shetty[2], Shashikiran H. C.[3]* and Shivaprasad Shetty[4]

[1]Intern, SDM College of Naturopathy and Yogic Sciences, Ujire.
[2]Principal, SDM College of Naturopathy and Yogic Sciences, Ujire.
[3]Assistant Professor, SDM College of Naturopathy and Yogic Sciences, Ujire.
[4]Professor, SDM College of Naturopathy and Yogic Sciences, Ujire.

***Corresponding Author: Dr. Shashikiran H. C.**
Assistant Professor, SDM College of Naturopathy and Yogic Sciences, Ujire.

Article Received on 01/05/2018 **Article Revised on 22/05/2018** **Article Accepted on 12/06/2018**

ABSTRACT

Background: Yoga is a mind-body therapy that connects the body, breath, and mind to energize and balance an individual as a whole. Yoga today has become a therapy to rehabilitate and treat addiction. Naturopathic treatments detoxify and rejuvenate the body. It also deals with health promotion, disease prevention, and curative as well as restorative aspects of an individual. The conventional mode of treatment which is basically allopathic medicine, also have been given as a treatment for physical and psychological health problems. **Materials and methods**: A total of 60 alcohol dependent subjects divided into 2 groups, viz. group A and group B within the age of 23 to 65 years were taken for the study. Subjects who fulfilled the inclusion and exclusion and screening criteria of the subjects Alcohol Use Disorders Identification Test **(AUDIT)** questionnaire have been used. The group A was given yoga and naturopathic management, whereas the group B was given conventional medical management for a period of 7 days. The assessments were done before and after the intervention. Both groups were assessed for withdrawal symptoms and quality of life on day one and day seven. **Results**: There is a significant change in between the yoga and naturopathy treatment group ($p<0.05$) than that of the conventional management group. **Conclusion**: The present study concludes that yoga and naturopathic management enables to reduce regularly symptoms of alcohol dependent individuals better than a conventional medical approach.

KEYWORDS: Alcohol dependent individuals, Alcoholism, Yoga, Naturopathy, Conventional medicine, Withdrawal symptoms, Quality of life.

INTRODUCTION

Alcohol addiction has become a major health issue worldwide and is a notable cause for poverty and family disputes.[1] One of the most important products of global addiction is alcohol. Its consumption alters brain function by interacting with multiple neurotransmitter[2] concentrations in the brain, especially those of dopamine, noradrenaline, serotonin, endogenous opioid peptides, and γ-aminobutyric acid (GABA).[3] Usage of alcohol and its abuse burdens one's life and society along with its effect on an individual's daily work and also causing problems at physical and mental level.[4] Alcohol dependence are associated with domestic violence[5], neuropsychological impairment[6], economic cost and lost productivity[7], injury from traffic accidents[8], other trauma, violence and suicide[9], liver cirrhosis, liver cancer, breast cancer, haemorrhagic stroke, alcoholic psychosis, alcohol dependence, and chronic pancreatitis.[10] Conventional management is widely used to treat alcoholic dependence, but it has an adverse affect on other systems of the body. Hence this study has taken up to know the effect of yoga and naturopathic treatments over conventional management. Yoga is an ancient science of India, which looks at an overall personality development of an individual. Yoga includes varied practices like physical postures (asanas), regulated breathing (pranayama), meditation and didactics on philosophical aspects of yoga.[11] Many researchers have found yoga as a mainline management for relieving stress and anxiety.[12,13] Relaxations practiced in yoga reduce psychological and physiological reactions to stress and control the urge and cravings by balancing the mind and thereby help reduce nervous irritability.[14,15] Naturopathy is one of the Complementary and Alternative therapies which have a concept of well-being or wellness. It deals with health promotion, disease prevention, and curative as well as restorative aspects of an individual. It includes hydrotherapy, mud therapy,

diet therapy, fasting therapy, magneto-therapy, chromo-therapy, manipulative therapy, acupuncture and physical therapy for detoxification and restoration of health.[16]

Conventional treatments treat symptoms and diseases using drugs, radiation, or surgery, also by biomedicine, mainstream medicine and orthodox medicine.[17] These treatments include medications for generalized weakness, delirium, diarrhoea, fever, myalgia, gastritis, hepatic toxicity etc; Psychological counseling for the individual / family, recreation and exercises also act as a de-addiction protocol.

METHODOLOGY

Subjects: Sixty subjects, 30 from SDM Yoga & Nature cure Hospital (SDMYNCH), Dharmasthala, Karnataka and 30 from SDM De-addiction Centre, Laila, Ujire, Karnataka were recruited for the study.

Criteria for diagnosis: The subjects should be an alcoholic, at least consume alcohol more than 4 pegs (240ml) per day.

Inclusion criteria: Males, aged between 23-65 years**,** having a history of intake of alcohol for the past one year, subjects diagnosed as moderate or severe category from AUDIT questionnaire and alcoholics voluntarily willing to participate in the study. After they were briefed about the study, they were asked to sign an informed consent form. The study protocol was approved by the Institutional Ethics Committee of Sri Dharmasthala Manjunatheshwara College of Naturopathy and Yogic Sciences (SDMCNYS), Ujire.

Exclusion criteria: Psychiatric & neurologic illnesses**,** physically handicapped based on the production of a valid certificate, alcoholics with Cardiac and Respiratory disorders based on their clinical history.

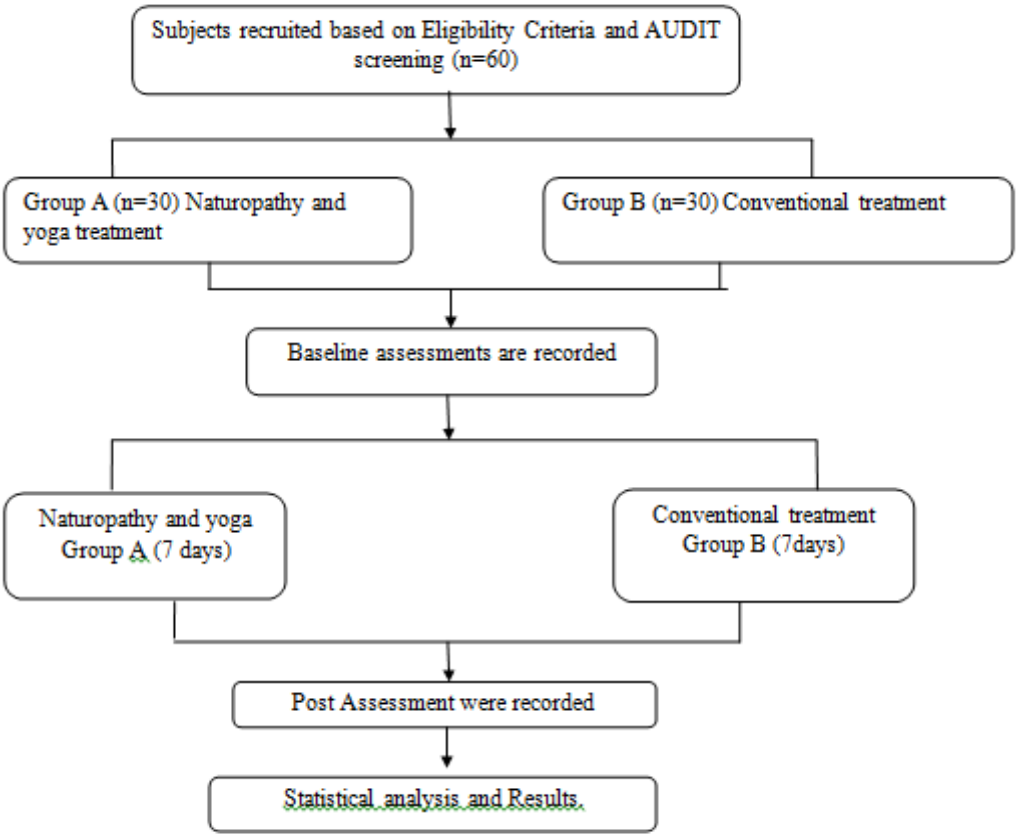
Intervention and assessment

Group A (*n*=30) were given naturopathy and yoga based treatments for 7 days in SDMYNCH, Dharmasthala and Group B (*n*=30) were given conventional medicine at SDM De-addiction Centre, Laila, Ujire for 7 days. The pre and post assessment was taken before and after the respective interventions.

Study design

After the clinical assessment, sixty subjects who came under the inclusion and AUDIT questionnaire criteria were selected for the study. Sixty subjects were allocated then divided into two groups {group A (*n*=30) and group B (*n*=30)}. Group A subjects were given yoga and naturopathy treatment along with a strict vegetarian diet at SDMYNCH, Dharmasthala for one week. Group B subjects were given conventional medicine treatment along with a strict vegetarian diet at the SDM De-addiction Centre, Laila, Ujire for one week.

The Illustration of Study Plan:



Intervention

Group A - Naturopathic treatment protocol.[18]

S.NO	MORNING	AFTERNOON
1	Enema , Steam bath	Neutral hip bath
2	Neutral half immersion bath with Epsom salt	Neutral spinal spray
3	Sauna bath	Gastro hepatic pack
4	Full body massage	Neutral immersion bath with Epsom salt
5	Rice fortified with turmeric bath	Kidney pack
6	Neutral under water massage	Neutral spinal bath
7	Salt glow oil massage	Cold immersion bath
8	Full mud bath	Alternate hip bath
9	Reclining steam bath	Alternate douche to whole body
10	Partial massage to back and legs	Deluxe hydro massage

Daily Yoga protocol

Name of the practice	Details	Duration
Sheethalikarana vyayama	All the joints movements	10 minutes
Suryanamaskara	5 rounds	10 minutes
Breathing practices	Shashankasana Breathing Rabbit Breathing Tiger Breathing	2 minutes 2 minutes 2 minutes
Asana practices	Tadasana Tiryaktadasana Ardhakatichakrasana Uthkatsana Ardhachakrasana Padahasthasana Trikonasana Utthitapadasana Pawanamuktasana Setubandhasana Nawasana Shalabhasana Naukasana Baddhakonasana Janusirshasana Ushtrasana	30 minutes
Pranayama	Bhastrika or kapalabhati Surya vedana Chandra vedana Nadisodhana Bhramari	5 minutes 2 minutes 2 minutes 5 minutes 5 rounds
Deep relaxation technique		5Minutes
Kriyas	Vamana dhouti Jalaneti Kapalabhati Trataka	First 3 days Daily once from each nostril 40 -120 strokes Daily at 8:00pm (20 min)
Meditation	Yoga nidra (also on follow up) Om-meditation(on follow up)	Daily before sleeping 30 min 15 minutes

The treatments given in GROUP B – Medications[17]

S.no	Medicine name	Dosage	Chemical content	Usage	Dose to be taken
1	T. LIBRIUM	25 mg & 10 mg	*chlordiazepoxide*	To control delirium	1st day= 2-0-1 2nd day= 1-0-1 from 3rd day onwards =1-0-1
2	T. BENALGIS	100 mg	*benfotiamine*	To control tremors	1-0-0
3	T. LOPAR	2 mg	*loperamide hydrochloride*	For diarrhoea	when required= 1 tab.
4	T. DOLO	650 mg	*paracetamol*	for fever, headache, body pain	when required= 1 tab.
5	T. BEPLEXFORTE	260 mg	*vitamin b-*	for generalized weakness	0-1-0

			complex, vitamin c & biotin		
6	T. RANTAC	150 mg	*ranitidine*	for gastritis	when required= 1 tab.
7	T. NEUROBION FORTE	----	*vitamin B-complex with* B_{12}	For generalized weakness and strengthening.	1-0-0
8	T. NITRAVET	10 mg	*nitrazepam*	To control delirium	1^{st}& 2^{nd} day= 0-0-1/2
9	T. LIV-52	-----		Protects liver and promotes appetite and growth.	1-0-0

Assessment: The SF-36 and CIWA-Ar were introduced before and after the intervention Quality of life assessment by THE SHORT-FORM-36 HEALTH SURVEY *(Rand Corporation and John E. Ware Jr., 1990, revised 1996)*

Measurements

Group A (n=30) on the 1^{st} day to 7^{th} day were personally,

- Psychologically counseled by a qualified clinical psychologist
- Treatment and diet was observed.

Group B (n=30) on the 1st day to 7th day were personally,

- Psychologically counseled by a qualified clinical psychologist
- Medication time table and dosage was finalized.
- Diet was observed.

Data extraction and analysis: The pre and post data were collected on the basis of questionnaires provided to the patient on first and last day of the study. The data later were analyzed by SPSS version 16.0.

RESULT

Hypothesis designed for the study

A. H_0 :- There is significant difference between yoga and naturopathy treatment and conventional method of treatment.

B. H_1 :- There is no significant difference between yoga and naturopathy treatment and conventional method of treatment.

DETAILS

Table 4: Normality of pretest and post test scores of all variables in two study groups by Kolmogrov Smirnov test.

Variables		Yoga naturopathy group		Conventional group	
		Z-value	p-value	Z-value	p-value
1. CIWA-R	Pretest	0.5410	0.9310	1.0740	0.1990
	Posttest	0.6510	0.7900	1.5320	0.0180*
	Difference	0.9970	0.2730	0.6760	0.7500
2. Quality of life. A. Physical functioning	Pre-test	1.0550	0.2160	1.1040	0.1750
	Posttest	1.3970	0.0400*	1.6780	0.0070*
	Difference	1.4090	0.0380*	0.9920	0.2780
B. Role limitations due to physical health	Pretest	0.7950	0.5520	1.8920	0.0020*
	Posttest	1.3520	0.0500*	1.4680	0.0270*
	Difference	1.1960	0.1140	1.6420	0.0090*
C. Role limitations due to emotional health	Pretest	0.6220	0.8330	1.6260	0.0100*
	Posttest	0.7410	0.6430	1.5690	0.0150*
	Difference	1.1890	0.1180	0.8990	0.3940
D. Energy/ fatigue	Pretest	0.9000	0.3930	1.2190	0.1020
	Posttest	0.9140	0.3740	2.2910	0.0001*
	Difference	0.7760	0.5830	1.1640	0.1330
E. Emotional wellbeing	Pretest	0.9910	0.2800	0.6590	0.7790
	Posttest	0.7890	0.5620	1.4430	0.0500*
	Difference	0.6530	0.7870	0.7040	0.7050
F. Social functioning	Pretest	0.8090	0.5300	0.7960	0.5500
	Posttest	1.3700	0.0470*	1.4520	0.0300*
	Difference	0.8780	0.4240	0.8360	0.4860
G. Pain	Pretest	0.9430	0.3360	1.2080	0.1080
	Posttest	0.6060	0.8560	1.6950	0.0060*
	Difference	1.2050	0.1100	1.0790	0.1950
H. General health	Pretest	1.2930	0.0710	2.0080	0.0010*
	Posttest	0.8250	0.5030	1.0940	0.1830
	Difference	1.0620	0.2090	1.5270	0.0190*
I. Health change	Pretest	0.9790	0.2930	1.8670	0.0020*
	Posttest	1.0820	0.1920	2.1640	0.0001*
	Difference	0.4900	0.9700	1.6880	0.0070*

*$p<0.05$

Note: All pretest and posttest scores of all variables in both the groups does not follow a normal distribution, therefore, non-parametric tests were applied.

Though the conventional management group showed significant results, we found a highly significant result in yoga and naturopathy group pre-dominantly in the Physical functioning, Role limitations due to physical health and Social functioning of SF-36 in comparison to the conventional group p<0.05.

Table 5: CIWA-R: Comparison of yoga naturopathy and conventional groups with respect to pretest and posttest CIWA-R scores by Mann-Whitney U test.

Groups	Pretest		Posttest		Difference	
	Mean	SD	Mean	SD	Mean	SD
Yoga naturopathy group	14.63	2.74	9.83	2.42	4.80	2.31
Conventional group	15.03	5.91	6.97	3.50	8.07	5.12
% of change in Yoga naturopathy					32.80%#, p=0.0001*	
% of change in Conventional group					53.66%#, p=0.0001*	
Z-value	-0.8427		-3.2969		-2.7129	
P-value	0.3994		0.0010*		0.0067*	

*p<0.05, # applied Wilcoxon matched pair test

There are no significant values seen in yoga and naturopathy group compared to conventional group.

DISCUSSION

The results were found to be highly significant (P< 0.05) in yoga and naturopathy treatment compared to the conventional treatment group in only a few subscales of AUDIT, CIWA-R questionnaires and quality of life SF 36. In this study the significant results found could be due to reduction in sympathetic activity and dominance of parasympathetic activity. On comparing both the groups, mud application to the abdomen showed a significant parasympathetic dominance after 20 minutes of treatment.[19] The probable mechanism of action indicating a parasympathetic dominance might be due to peripheral vasodilatation following an exposure to cold temperature.[20] The resulting increase in central pressure in turn activates the baroreflex mechanism, responsible for reducing sympathetic nerve activity while shifting autonomic heart rate control towards a more parasympathetic dominance.[21] Cold temperature plays a larger role in the increased peripheral vasoconstriction with enhanced central blood volume.[22] A significant reduction in local blood volume was found for cold gel packs applied in healthy ankles. This reduction was attributed to the pack's temperature.[23] Cold application initially causes skin vasoconstriction, and if a cold compress covers a large area of the body, a significant amount of blood will be driven into the internal organs. Prolonged cold causes a secondary reaction, inducing vasodilatation of the surface skin blood vessels.[24] Application of a mud pack to the abdomen enhances peripheral circulation, increases metabolic rate, and hence helps reduce blood glucose levels.[25] Of course, exercise and physical activity also help to improve insulin sensitivity, thereby lowering blood glucose.[26] One of the physiological defenses for preventing a decrease in core temperature during cold exposure is a greater rate of metabolic heat production induced by shivering and non-shivering thermogenesis.[27] Although this may be perceived as beneficial in the context of minimizing heat dissipation during cold exposure, this was best evidenced by Stansberry and colleagues[28] who showed reductions in the contribution of local, reflex, and centrally-mediated mechanisms which can determine skin blood flow. Furthermore, this blunted responsiveness is at least in part attributed to the reduction in the control of blood vessel diameter by the sympathetic nervous system.[29, 30] Collectively, there is some evidence to indicate that individuals with type 2 diabetes may be less able to prevent decreases in core temperature associated with cold exposure. Even found the significant result in control group too, could be due to the treatment and pattern of diet given. The naturopathic treatment approach frequently includes important dietary and life style recommendations included in current medical treatment guidelines for diabetes, although improvements can be made on the precision of recommendations.[31] Yoga has been used effectively for voluntarily controlling involuntary functions. Studies have shown the possibilities of attaining exceptional feats physiologically following long term practice of Yoga. Yoga is a state (meaning union) which is defined as a high level of consciousness achieved through a fully rested relaxed body and a fully awake and relaxed mind. The effect of yoga on body function may be related to decreased arousal or a decrease in sympathetic nervous system activity. While attempting to understand the underlying mechanisms for the influence of meditation on autonomic functions, a recent report demonstrated that long term meditation practitioners had higher gray matter density in lower brain stem regions compared to age-matched non meditators.[32] Yoga is likely to impact on mindfulness and acceptance, both of which will be tested as mediators in the present study. Yoga is associated with a mastery of life challenges, which may extend to dealing with chronic illness and pain.[33]

Limitations of the study

- Larger sample size would have given more authenticated results.
- Limited duration of the study.

- This study did not involve a strictly-controlled diet (Food record),but involved only vegetarian diet.

REFERENCE

1. Morse RM, Flavin DK. The definition of alcoholism. JAMA, 1992; 268: 1012-1014.
2. Mukherjee, Sukhes; Das, Subir K.; Vaidyanathan, Kannan; Vasudevan, D. M. consequence of alcohol consumption on neurotransmitters-an overview.
3. Tabakoff, 1977; Littleton, 1978; Imperato and Di Chiara, 1986; Gewiss et al., 1991.the role of neurotransmitter in alcohol dependence.
4. Chou SP, Dawson DA, Stinson FS, Huang B et al. The prevalence of drinking and driving in the US, 2001-2002: results from the National Epidemiology Survey on Alcohol and Related Conditions. Drug Alcohol Dependent, 2006; 83(3): 137-46.
5. Lemoine P, Harousseau H, Borteyru JP, Menuet JC. Children of alcoholic parents- observed anomalies:discussion of 127 cases. Ther Drug Monit, 2003; 25(2): 132-36.
6. Bazargan-Hejazi S, Bing EG et al. Alcohol use and adherence to prescribed therapy among underserved Latino and African-American patients using emergency department services. Ethn Dis., 2005; 15(2): 267-75.
7. Grant BF, Stinson FS et al. Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: results from the National Epidemiology Survey on Alcohol and Related Conditions. Arch Gen Psychiatry, 2004; 61(8): 807-16.
8. Birdsall WC, Reed BG, et al. Alcohol-impaired driving: average quantity consumed and frequencies of drinking do matter. Traffic Inj. Prev, 2012; 13(1): 24-30.
9. Morin J, wiktorsson S, Marlow T, Olsen Pj, et al. Alcohol use disorder in early suicide attempters: A comparative study. Am J Geriatr psychiatry, 2013; 2: 196-203.
10. Cargiulo T. Understanding the health impact of alcohol dependence. American Journal. Journal Health System Pharm., 2007; 64(8): 803.
11. Vivekananda Kendra. Yoga the science of holistic living. Chennai:Vivekananda Kendra Prakashan Trust, 2005.
12. Long L, Huntley A, Ernst E. Which complementary and alternative therapies benefit which conditions? Complement Ther Med., 2001; 9(3): 178–85.
13. Cahn and Polich. Updating P300 Integrative Theory of P3a and P3b. Clinical Neurophysiology, Oct, 2007; 118(10): 2128-2148.
14. Hoffman JW, Benson H, Arns PA, Stainbrook GL, Landsberg GL, Young JB et al. Reduced sympathetic nervous system responsivity associated with the relaxation response. Science., 1982; 215(4529): 190–2.
15. Sandlund ES, Norlander T. The effects of Thai Chi Chuan relaxation and exercise on stress responses and well-being:An overview of research. J Stress Manage, 2000; 7(2): 139-49.
16. http://ayush.gov.in/about-the-system/naturopathy/techniques-and-benefits-different-modalities-naturopathy.
17. Addiction - National Council on Alcoholism and Drug. *https://www.ncadd.org/about addiction.*
18. Dr. Dushyant Kumar. Comparative study on the effect of hot mud application and mustard application in patients with OA of knee. Randomized control trial. Journal of Dental and Medical sciences. Volume 15; issue 9.september 2016; 13-19.
19. Buchheit M Peiffer JJ, Abbiss CR, Laursen PB Effect of cold water immersion on post exercise parasympathetic reactivation. American journal of physiology Heart and circulatory physiology, 2009; 296: H421–427.
20. Fernando Veniale, Antonio Bettero, Pier Giorgio Jobstraibizer, Massimo Setti. Thermal muds: Perspectives of innovations. Applied Cla Sci., 2007; 36: 1417.
21. Julien Louis, KarnieSchaal, Francois et al. Head exposure to cold during whole body cryostimulation: influence on thermal response andautonomic modulation. Journal pone, 2015; 10(4): e0124776.
22. Bruce E Becker, Biophysiologic aspects of hydrotherapy; In: Andrew JCole, Bruce E Becker, Comprehensive aquatic therapy (2004, Elsevier, Pennsylvania).
23. Craig Taber, Kim Contryman K, Fahrenbruch J Et al. Measurement of reactive vasodilation during cold gel pack application to non traumatised ankles. Phys. Ther., 1992; 72: 294-299.
24. Eric Blake ND. Naturopathic Hydrotherapy. Elsevier Limited, 2008.
25. Shetty P, Varma GBR. Effect of Gastro Hepatic Pack on Patients with Type 2 Diabetes Mellitus. *J Res Educ Indian Med*. Template, 2012; 13: 18.
26. Kelley DE, Goodpaster BH. Effects of exercise on glucose homeostasis in Type 2 diabetes mellitus. *Med Sci Sports Exerc*, 2001; 33(6): S495-S501.
27. Blondin DP, Tingelstad HC, Mantha OL, Gosselin C, Haman F. Maintaining thermogenesis in cold exposed humans: relying on multiple metabolic pathways. Compr Physiol, 2014; 4: 1383–402.
28. Stansberry KB, Hill MA, Shapiro SA, McNitt PM, Bhatt BA, Vinik AI. Impairment of peripheral blood flow responses in diabetes resembles an enhanced aging effect. Diabetes Care, 1997; 20: 1711–6.
29. Low PA, Walsh JC, Huang CY, McLeod JG. The sympathetic nervous system in diabetic neuropathy. A clinical and pathological study. Brain, 1975; 98: 341–56.
30. Bradley, R., & Oberg, E. B. Naturopathic medicine and type 2 diabetes: a retrospective analysis from an academic clinic. Alternative Medicine Review: A Journal of Clinical Therapeutic, 2006; 11(1): 30–9.
31. Bradley, R., Kozura, E., Buckle, H., Kaltunas, J., Tais, S., & Standish, L. J. Description of clinical risk

factor changes during naturopathic care for type 2 diabetes. Journal of Alternative and Complementary Medicine (New York, N.Y.), 2009; 15(6): 633–8.
32. Raub JA. Psychophysiologic effects of Hatha Yoga on musculoskeletal and cardiopulmonary function: a literature review. J Altern Complement Med., 2002; 8: 797–812.
33. Vestergaard-Poulsen P, van Beek M, Skewes J, Bjarkam CR, Stubberup M, Bertelsen J, Roepstorff A. Long- term meditation is associated with increased gray matter density in the brain stem. Neuroreport, Jan 28, 2009; 20(2): 170-4.