

Formulation of a Detox Health Tonic Diet for Toxin Elimination

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Abstract: Short-term dietary adjustments used as a detox health tonics in this study with which helps to eliminate excess toxins from the body while simultaneously increasing vitamin and mineral absorption through the consumption of natural juices, fruits, and vegetables. The aimed of the study was to formulate a detox health tonic diets for toxin elimination and observe its efficacy on health and nutrition. A total 45 people were recruited for this preliminary study and randomly divided into two groups in a randomized, single-blind, placebo-controlled trial (30 individual included in case group and 15 individuals were in control group). All of the subjects in the case group consumed a curcumin-based diet for 12 weeks, while none of the subjects in the control group consumed any curcumin-based food mixes. It was clear that 100% opined that good taste and 93.3% of the subjects reported that it increased their appetite and interested to intake again. Following intervention, no patients in the case group were determined to be in severe pain, and nearly 93% reported either no discomfort or mild pain. After a three-month control trial, however, there was no discernible reduction in pain in the control group. The intervention group showed substantial declines in weight ($p=0.013$), body mass index ($p=0.011$) compared to baseline after consuming the detox diet for three months.

Keywords: Detox diet, Toxin, Curcumin, Single blind placebo-controlled, appetite, Body mass index.

I. INTRODUCTION

Natural foods, diets and spices have been associated with increased safe consumption and better living style. At the same time reduced some common lifestyle diseases mainly chronic pain, arthritis, asthma, diabetes, hypertension, cardiovascular disease and even cancer [1]. These protective effects have been attributed to the presence of phytochemicals and nutraceuticals bioactive functional components in natural diets and spices. Some of them have been used in traditional medicine for healing and as health tonics or food supplements. Curcumin (*Curcuma longa*), a polyphenol, has been found to target a number of signalling molecules and also exhibit cellular activity [2]. It has been demonstrated to help with pain, metabolic syndrome, and inflammatory disorders [3, 4, 5]. Both ginger and turmeric are rhizomes, or root stalks, utilized in traditional herbal treatments as well as food seasonings all across the world. Spices and diets are used largely as herbal medicines to treat various forms of pain [6].

The use of laxatives, diuretics, vitamins, minerals, and/or "cleansing foods" is frequently a part of detox diets, which can range from complete starvation fasting to juice fasting or meal modification strategies [7]. As a results, nowadays a lot of modified foods are utilized. These modified foods now contain additional nutrients or other healthy elements that have been

enriched, fortified, or enhanced. Functional foods that have been altered include, for instance, orange juice fortified with calcium, breads fortified with folic acid, and margarine fortified with plant sterols. This includes energy beverages that contain additional ingredients like ginseng, guarana, and other potentially contentious foods [8]. The body may amass toxins such heavy metals or chemical solvents that cannot be eliminated by normal metabolism; nevertheless, a detox diet won't get rid of these things. Detoxing may not be the answer if the body has collected toxins, for that reason.

As of right now, no research has been done to determine whether commercial detox diets are useful for shedding pounds [9]. Some say it's a fraud to think that purging your body of contaminants will leave your organs sparkling clean and ready to work. It's more of a marketing gimmick than anything else [10]. Therefore, an attempt had been taken to develop a new diet to remove toxins from our body. This functional detox diets is a natural food-based bioactive components like curcumin, essential oil and gingerol-based liquid tonics has been claimed to be toxic free and more efficacious against different types of pains and body weight control.

II. MATERIALS AND METHODS

Study location/Setting place

This protectively-guarded secret recipe was used to formulate functional health tonic and to ensure its goods' quality in the laboratory of the Food Technology and Nutritional Science at Mawlana Bhashani Science and Technology University, Tangail, Bangladesh. A clinical toxicity test was conducted in Chittagong's BCSIR Laboratories.

Subjects and Trial group

A total number of 45 individuals were recruited and randomly selected into two groups by matching sex and age of the participants. In case 30 individuals were included and rest 15 were in control group. All subjects in the case group were taken curcumin based diet for 12 weeks with or without only single drug. All of the participants in the control group consumed a single medication or no medication at all, and they did not consume any combinations of a curcumin-based diet.

Ethical Consideration

The Ethical Review Committee of the Department of Food Technology and Nutritional Science, Mawlana Bhashani Science and Technology University, Tangail, Bangladesh, gave the project its ethical nod. If any individuals who would like to take curcumin based diet and he/she falls discomforts or any other complexities, then it can be supervised by a specialized doctor.

Inclusion and Exclusion criteria

Aged between 40-60 years, Patients diagnosed as chronic pain or obesity and who had given written informed consent were included in this study. Exclusion criteria was included well recognized rheomited arthritis pain, recognized high blood pressure and presence of debilitating illness.

Sensory Evaluation

For organoleptic test of this product, a panel was formed, consisting of 11 members. It was done for 5 days with curcumin based diet on the different groups of both male and female for the clinical observations under the supervision of a physician.

Biochemical Analysis

Different required biochemical analyses were done by an appropriate AOAC method [11].

Statistical Analysis

The SPSS statistical program, version 20.0, was used to analyze the data. Appropriate comparisons were made using the student's t-test, with significance accepted at values of p 0.05.

III. RESULTS AND DISCUSSION

Physico-chemical Properties

Natural foods or food-based therapeutic mixtures were more appropriate for body weight reduction and pain patients as it was traditionally and culturally accepted and could easily reach majority of the population. A composite of different natural food sources and preparations were tried in this study and was being found to be effective not only in changing their blood

biochemical parameters but also the overall picture of pain reliever in face and control of body weight. Different groups of people need a convenient and balanced nutritional support in different diseases condition [12]. The formulated functional detox diets whose raw ingredients were mainly oats, curcumin, ginger, mulberry, multi-floral honey and natural spices etc. It was observed that these products had good taste and the individual respondents were interested to continued intake of this product. Some of them opined about the presence of standard amount of functional ingredients (Fig.1).

The sociodemographic and background details of the 45 subjects who successfully completed the study were displayed in Table 1. The majority of them were in the age ranges of 40 to 49.9 and 50 to 59.9, which together made up 80.0% of the subjects. There were 19 women and 26 men. The age distribution for the intervention and control groups is also shown in Table 7. The intervention and control groups' respective mean ages were 52.2 and 50.9 years. The age distribution between the control and treatment groups did not differ significantly. Similar to their BMI, neither group's weight nor height had any appreciable changes. Table 2 showed the distribution of pain feeling by the respondents in the intervention and control groups at day zero and after 12 weeks treated with functional mixtures health tonics. There was similar pain scale was observed both in case and control group before intervention but after Detox health tonics interventions, it was observed that there was a significant differences in both groups. After intervention, none of the case group was found in severe pain and almost 93% had no pain or feels mild pain. On the other hand, in control group no significant decrease in pain scale after 12-weeks.

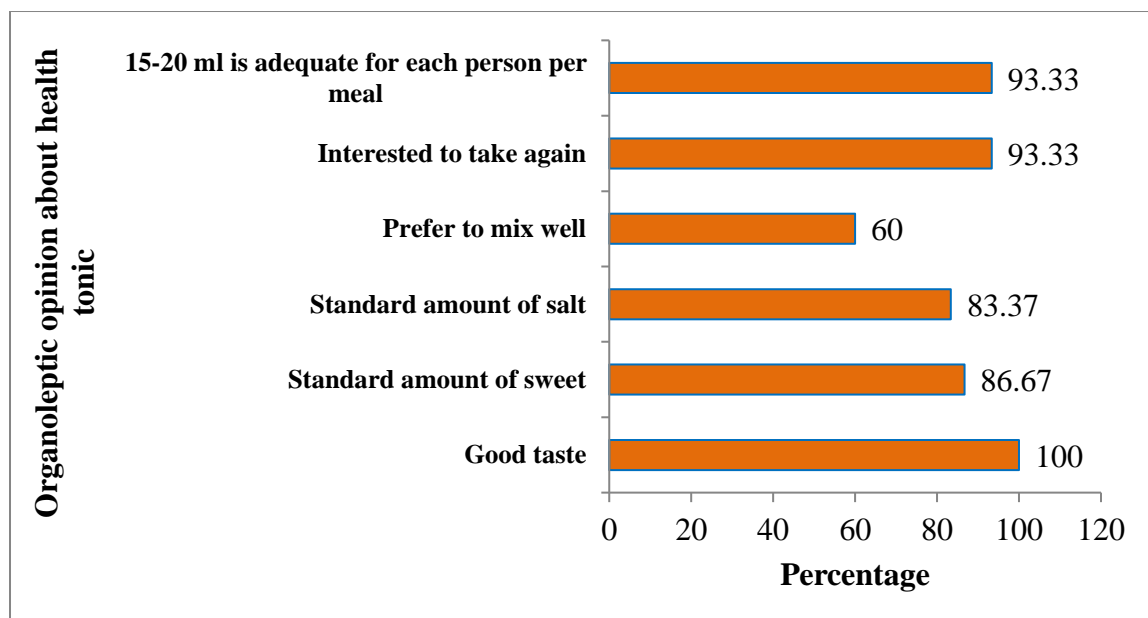


Fig.1: Organoleptic satisfaction level of about detox health tonic diet

Table 1: Socio-demographic & background features of subjects at starting day

Variables	Intervention Group n (%)	Control Group n (%)	Total n (%)
Age			
40-49 Years	12 (40.0)	7 (46.6)	19 (42.2)
50-59 Years	12 (40.0)	6 (40.0)	18 (40.0)
≥ 60 Years	6 (20.0)	2 (13.4)	8 (17.8)
Sex			
Male	18 (60.0)	8 (53.3)	26 (57.8)
Female	12 (40.0)	7 (46.7)	19 (42.2)
Age (Years)	Mean ± SD	Mean ± SD	Mean ± SD
	52.2 ± 7.0	50.9 ± 6.6	51.8 ± 6.9
Weight (Kg)	64.7 ± 4.5	66.5 ± 5.4	65.6 ± 4.9
Height (cm)	163.6 ± 7.5	164.5 ± 8.1	164.1 ± 7.8
BMI	24.1 ± 2.9	24.5 ± 3.3	24.3 ± 3.1
Duration of pain (Years)	8.1 ± 1.8	8.4 ± 2.2	8.3 ± 1.9

Table 2: Distribution of the pain before starting day and after 12 weeks intervention

Pain Scale (0-10)	Before Intervention			After Intervention		
	Case Group Mean±SD	Control Group Mean±SD	Total Mean±SD	Case Group Mean±SD	Control Group Mean±SD	Total Mean±SD
No Pain (0)	0	0	0	36%	0	0
Mild (1-2)	0	0	0	57%	17%	77%
Moderate (3-6)	57%	58%	58%	7%	50%	19%
Severe (7-10)	43%*	42%	42%	0*	33%	4%
Total	100%	100%	100%	100%	12 (100%)	100%

*p<0.05

Table 3 displays the anthropometric indexes' findings. The intervention group showed substantial reductions in weight (p=0.013), BMI (p=0.011) after 12 weeks of consuming the detox diet in comparison to baseline. Weight and body mass index were not significantly changes in the controlled group after 12 weeks intervention period.

Table 3: Anthropometric indices (BMI) before starting (at day zero) and after intervention (12 weeks)

Variables	Before Intervention		After Intervention	
	Intervention ±SD	Control ±SD	Intervention ±SD	Control ±SD
Weight (Kg)	79.5±7.6*	77.8±7.2	71.3±6.2*	76.9±7.4
BMI	31.3±2.2*	30.7±2.5	27±1.6*	30.2±2.4

*p<0.05

IV. CONCLUSION

Whether detox is associated with rejuvenation, getting rid of toxins, losing weight, speeding up metabolism, or promoting health, it is undeniably true that this therapy is succeeding and growing in the field of wellness clinics due to the increased demand from clients, which encourages other wellness facilities to follow the path and incorporate it in their programs. In this study after 12 weeks of detox diet intervention, the intervention group exhibited significant decreases in weight and BMI compared to baseline and controlled group. The majority of respondents say they only go on a detox diet when they are sick or worried about their health, not as a regular part of a healthy lifestyle. However, it was suggested that a double blind placebo controlled study be proposed to further confirm / clarify the outcomes of this preliminary investigation due to the possibility of additional improvement.

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