ISSUE 06 | VOLUME - 24 | JUNE 2019

IMPA NEWS

THE OFFICIAL NEWS LETTER OF THE INDEPENDENT MEDICAL PRACTITIONERS ASSOCIATION

FROM THE PEN OF THE PRESIDENT. . .

Dear Colleagues,

"In a world that changing really quickly, the only strategy that is guaranteed to fail is not taking risks. " Mark Zuckerberg

I reproduce a list of opportunities available for our membership :

1. Health camps for community services
2. Vocational Training Opportunities
3. Advertising opportunities in the dyata hetak
4. Deveopment of the private practices
5. Drug dependence projects conducted through OPA and NDDCB
6. IMPA representations at the MOH
7. Getting involved in the OPA activities by becoming a member of OPA - an opportunity which is available for IMPA membership
8. Invitations for activities by service organizations and NGOs
9. Invitations for activities by departments under the MOH
10. Many CPD activities by many medical organizations nationally and internationally

With a massive pool of medical expertise and technical know-how it is saddening to see many opportunities where our members can be of some service to the people of this country are slipping by. On the other hand the mutual enrichment and personal development of our members as envisaged in the IMPA constitution is also amply served by these activities.

If a window of opportunity appears, don't pull down the shade.

Dr Ananda Perera

Editor - Dr A L P de S Seneviratne

MEDICA

The heartbeat of helthcare

Total Patient Care System

- Patient management with printed prescriptions
- Patient to view prescriptions on the mobile phone
- Doctor channelling and queue management
- Build patient loyalty by maintaining online patient records
- Manage medical conditions and patient history
- Send investigations directly to popular laboratories
- Built-in Medical Certificates, Bills and Referrals

01 Pay as you Use

PAY AS YOU USE – Rs 30 per Patient

Requirements
Own Laptop with Internet connection and optional Printer

02 Monthly Package

MONTHLY PACKAGE – Rs. 6,000 per month

Requirements
Own Laptop with Internet connection and optional Printer

03 Full Package

FULL PACKAGE – Rs. 12,000 per month

We provide with Laptop and Internet

Contact

0703 304 304

www.medica.lk gayan@bluevok.com

MEDICA won awards from BCS
NBQSA (2016)
ICTA (2018)

BLUEVOK
Bluevok Holdings Private Limited

Give a Missed Call to:
0115 148 248

We support
iOS Google Play

Scan the MEDICA Code from your mobile App

MEDICA ID: 10067460

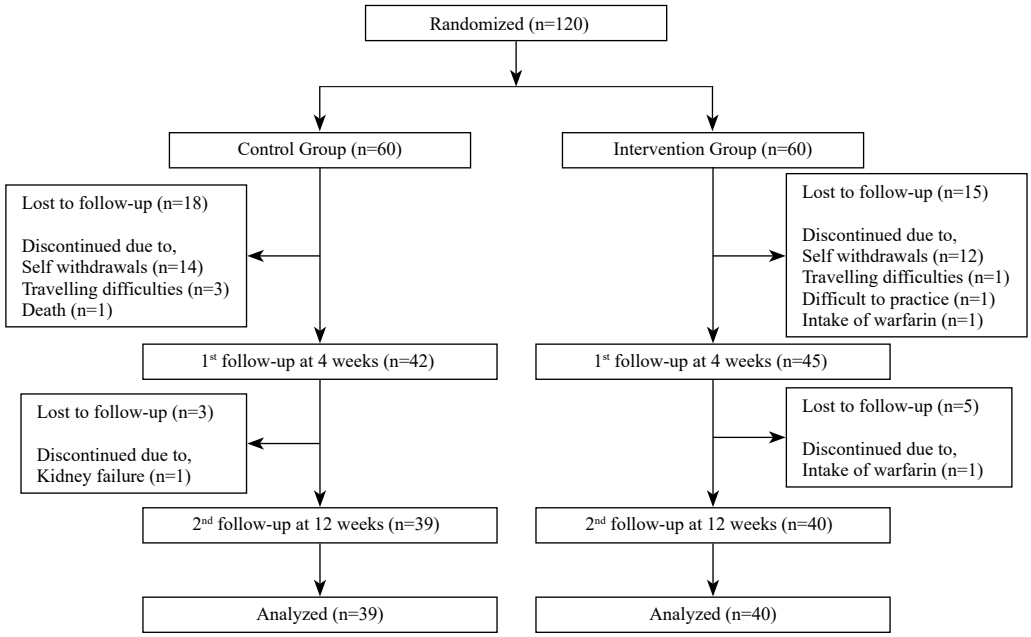

Figure 2. Flow diagram of enrolment, allocation, follow-up and analysis.

nutrition advice customized according to patients' social, economic and personal preferences.

The patient management team was blinded to the nature of intervention the patient was subjected to. The participants were thoroughly advised not to convey the information regarding the nature of intervention they were undergoing to other study participants to avoid breach of single blinded study design.

Measurements and follow-up

All the patients were given an interviewer administered questionnaire at recruitment through which demographic data, coronary risk factors, data on diagnosis and management were gathered. Baseline anthropometric measurements including body weight, height, waist circumference, hip circumference was measured using standard guidelines and blood pressure measurements were taken. Overnight fasting
blood was collected to measure blood glucose, lipids and liver enzymes.

Patients were followed up at 4- and 12-week intervals.
At these follow-up visits, blood pressure, anthropometric measurements were repeated. Fasting blood glucose and liver enzyme levels (ALT) were obtained at both follow-up visits. Lipid profile (total, LDL and HDL cholesterol) was repeated at 12 weeks.

Statistical analysis

The data were entered, coded and analyzed on SPSS version 23.0 (Armonk, NY: IBM Corp). After checking the data for normality, parametric and non-parametric statistical tests were applied for the data analysis. Summary statistics for both groups were calculated and presented as mean, standard deviation. Differences in baseline characteristics between the intervention and control groups were tested using chi-square tests and independent sample 2-sided t-tests. Effects with $P<0.05$ were considered significant. For the study BMI ≥23 kg/m2 was considered overweight or obese (20).

Results

Out of the 120 participants enrolled in both the groups, at the end of 12 weeks 66.6% (n=40) in the intervention group and 65% (n=39) in the control group completed the study (Figure 2). Results herein are reported for the 79 participants who completed the study. The study participants' mean (± SD) age was 50.5±10.6 years and majority (n=71) were men.

Baseline characteristics of the study population comprising of age, clinical, anthropometric, behaviour and biochemical parameters are presented in *Table 1*.

During the 12-week follow-up period a significant mean weight loss (intervention group: −1.27±3.58 kg; control group: −0.26±2.42 kg) was observed among the participants of the intervention group than the control group (P=0.029). Furthermore, the change in BMI measurements were significantly different between the groups (P=0.023) where the mean BMI reduction was significant among those who received the plate model (−0.48±1.31 vs. −0.10±0.89 kg/m2)(Table 2). Other anthropometric measurements such as waist circumference (IG: −1.66±4.35 cm; CG: −2.52±5.05 cm; P=0.421), hip circumference (IG: −0.36±4.54 cm; CG: −1.96±3.88 cm; P=0.095), waist hip ratio (IG: −0.01±0.04; CG: −0.01±0.03; P=0.365) and waist height ratio (IG: −0.01±0.03; CG: −0.02±0.03; P=0.401) remained unchanged or decreased in both the groups. But none of the reductions were statistically significant between the groups.

Cont. on page 04

Table 1. Comparison of physical, anthropometric and biochemical measurements between intervention and control subjects at baseline

Measurement ± standard deviation	Control subjects (n=39)	Intervention subjects (n=40)	Significance of difference between groups (P value)
Age	48.59±10.84	52.33±10.19	0.137
BMI (kg/m^2)	24.18±3.24	24.78±3.23	0.352
WC (cm)	87.25±8.13	89.06±8.02	0.305
WHipR	0.96±0.05	0.97±0.05	0.407
WHeightR	0.53±0.05	0.54±0.06	0.237
Systolic BP (mmHg)	121.33±14.26	117.55±16.58	0.156
Diastolic BP (mmHg)	76.95±11.77	76.38±13.10	0.488
FBS (mg/dL)	107.10±32.48	116.64±43.04	0.224
Total cholesterol	165.38±45.67	168.25±30.10	0.430
LDL	102.56±45.46	103.55±27.54	0.559
HDL	33.23±11.30	36.33±9.47	0.369
ALT	58.10±30.67	59.20±40.63	0.724
Daily energy intake	2,230.61±1,234.28	1,979.35±931.21	0.174
Tobacco usage	1.38±0,544	1.60±0.496	0.070

BMI, body mass index; WC, waist circumference; WHipR, waist to hip ratio; WHeightR, waist to height ratio; SBP, systolic blood pressure; DBP, diastolic blood pressure; FBS, fast blood sugar; LDL, low-density lipoprotein; HDL, high density lipoprotein; ALT, alanine aminotransferase.

Systolic (IG: −7.85±18.76 mmHg; CG: −3.94±20.34 mmHg) and diastolic (IG: −2.61±15.32 mmHg; CG: −3.05±14.35 mmHg) blood pressure reduced slightly from baseline values in both the groups during the 12-week follow-up. Similarly, although the changes were not significant, bio chemical parameters such as FBS, TG, LDL cholesterol and total cholesterol levels also have dropped down from the baseline values at the end of the follow-up period in both the control and intervention groups.

In the subgroup analysis, the reduction in weight and BMI values were significantly different among overweight and obese subjects (BMI ≥23 kg/m2) in the intervention and the control groups. But there were no significant changes exhibited across parameters of non-overweight subjects (BMI <23 kg/m2) (Table 3). The proportion of overweight and obese patients who underwent a weight loss of ≥5% during a short time period was greater in the test group (35.7%) than in the control group (13.04%). The test value was nearly significant between the two groups (P=0.065).

Discussion

Obesity adversely affects cardiac function, increases the risk factors for coronary heart disease, and is an independent risk factor for cardiovascular diseases (21). A "plate model" is one practical intervention to reduce the calorie intake by reducing the portion size of staple food in main meals. To our knowledge, this is the first randomized controlled single-blinded study to assess the effect of a 'plate model' as a dietary interventional study in patients after MI in Sri Lanka or South Asia. According to previous literature, similar plate models named "My Plate" and "healthy eating plate" have been introduced by the U.S. Department of Agriculture with Department of Health and Human Service and also by the Harvard Health Publishing, in conjunction with nutrition experts at Harvard School of Public Health (HSPH) (22). In "My Plate" the U.S. Department of Agriculture has introduced five food groups namely, fruits, vegetables, grains, proteins and dairy as the building blocks for a healthy diet (23). The "Healthy eating plate" has addressed important deficiencies in "My Plate" by replacing the dairy with healthy oils and water and also reminded that staying active is half of the secret to weight control (24). Therefore, it is apparent that several countries have recommended "plate" concept for their respective population.

The key findings of the study revealed that the intervention group who followed the plate model has a significant effect on weight and BMI reduction after 12 weeks than the control group. A significant result was witnessed among overweight and obese patients. As expected from the study, those who were not overweight had no reduction in weight but their weights were stable throughout the study period.

The consumption of vegetables, protein and cutting down excess carbohydrates is a healthy move for the secondary prevention of cardiovascular event (20). The intervention group served smaller portions on the plate model than the participants in the control group who used the regular plate. Portion control is an important aspect of reducing energy intake. During ad libitum feeding, a direct relationship is found between portion size served and intake; therefore, increasing the size of the portion served increases the amount of food consumed (25). In the present study the amount of food consumed by the intervention group who received the plate model was quite similar, regardless of the types of foods and the energy intake. The participants in the control group did not eat a consistent amount of food as they didn't follow the plate model. This group may have eaten more when

Cont. on page 05

Table 2. Anthropometric, clinical and biochemical characteristics of participants who completed the study, randomly assigned to either intervention group (n=40) or a control group (n=39)

Parameters	Control group (n=39)				Test group (n=40)				P
	Baseline	Follow-up 1	Follow-up 2	Change (F2–B0)	Baseline	Follow-up 1	Follow-up 2	Change (F2–B0)	
Weight (kg)	65.72±9.70	65.46±9.22	65.98±10.09	−0.26±2.42	66.97±10.60	66.18±9.93	65.70±10.01	−1.27±3.58	0.029*
BMI (kg/m^2)	24.18±3.23	24.10±3.08	24.28±3.43	−0.10±0.89	24.78±3.23	24.49±2.96	24.29±2.91	−0.48±1.31	0.023*
WC (cm)	87.25±8.13	86.12±8.08	85.59±8.03	−1.66±4.35	89.06±8.02	88.32±7.85	86.54±8.01	−2.52±5.05	0.421
HC (cm)	91.17±6.89	91.34±7.25	90.81±7.39	−0.36±4.54	92.12±6.72	91.47±6.38	90.15±6.86	−1.96±3.88	0.095
Waist hip ratio	0.96 ±0.05	0.94±0.05	0.94±0.05	−0.01±0.04	0.96±0.05	0.97±0.05	0.96±0.05	−0.01±0.03	0.365
Waist height ratio	0.53±0.05	0.52±0.05	0.51±0.05	−0.01±0.03	0.54±0.06	0.54±0.05	0.53±0.06	−0.02±0.03	0.401
SBP (mmHg)	121.33±14.26	112.13±14.02	112.79±13.91	−8.54±18.77	117.55±16.58	111.83±13.93	113.70±12.32	−3.85±18.93	0.273
DBP (mmHg)	76.95 ±11.77	71.66±10.73	74.95±11.21	−2.00±14.91	76.38±13.10	71.28±11.06	74.38±10.13	−2.00±14.25	1.00
FBS mg/dL	107.10 ±32.48	95.53 ±12.95	99.67±21.21	−7.44±33.60	116.64±43.04	106.63±26.59	107.85±37.41	−8.79±24.90	0.272
Total cholesterol mmol/L	165.38 ±46.67	166.92 ±46.25	126.13±23.81	−39.26±40.21	168.25±30.10	166.25±32.22	135.33±30.65	−32.93±34.64	0.641
TG	134.03±43.25	–	109.74±41.62	−20.46±48.55	131.30±45.18	–	108.03±54.27	−24.28±42.82	0.923
HDL	34.11±10.03	–	36.46±7.88	2.47±8.39	36.33±9.47	–	38.13±12.72	1.80±10.99	0.763
LDL	105.26±42.79	–	66.34±19.59	−38.92±37.8	103.55±27.54	–	68.60±29.72	−34.95±28.60	0.601
Total cholesterol/HDL	5.22±1.77	–	3.60±0.95	−1.62±1.58	4.88±1.60	–	3.35±1.36	−1.54±1.51	0.813
ALT mmol/L	55.95 ±27.93	38.92±36.67	32.00±14.51	−26.00±32.13	59.20±40.63	32.08±19.22	37.50±45.16	−21.70±36.83	0.582

*, P value statistically significant. BMI, body mass index; WC, waist circumference; HC, hip circumference; SBP, systolic blood pressure; DBP, diastolic blood pressure; FBS, fast blood sugar; TG, triglycerides; HDL, high density lipoprotein; LDL, low-density lipoprotein; ALT, alanine aminotransferase.

Table 3. Sub analysis between groups overweight (BMI ≥23 kg/m2) and non-overweight (BMI <23 kg/m2)

Condition	Control group (n=23)		Test group (n=28)		P
	Mean	Standard deviation	Mean	Standard deviation	
Sub analysis; BMI ≥23 kg/m^2					
Change in weight (kg)	0.12	2.62	−2.13	3.46	0.013*
Change in BMI (kg/m^2)	0.04	0.96	−0.80	1.26	0.01*
Sub analysis; BMI <23 kg/m^2					
Change in weight (kg)	0.47	2.16	0.74	3.13	0.785
Change in BMI (kg/m^2)	0.19	0.80	0.27	1.13	0.829

*, P value statistically significant. BMI, body mass index.

Cont. on page 06

compared to intervention group when adults themselves or someone else determined the portion served on the plate.

Previous studies have shown that increasing portion sizes led to significantly increased energy intake (25,26) and body weight (27). To systematically assess the effect of portion size on food, Rolls et al. conducted a study where men and women were served different portions of macaroni and cheese on different occasions, they consumed 30% more energy (676 kJ; 162 kcal) when offered the largest portion (1,000 g) than when offered the smallest portion (500 g) (25).

The energy content of a diet is the primary determinant of weight loss. Although low-carbohydrate diets have become increasingly popular for weight loss and to reduce cardiovascular risks, Jayawardena et al. reported that Sri Lankan men consumed higher amount of starch compared to their female counterpart and also more than 12% of men consumed ≥25 starch servings/d while 1% of females consumed that amount. A study carried out by Foster and colleagues on the effect of low-carbohydrate diet revealed that subjects on the low-carbohydrate diet had lost more weight than subjects on the conventional diet at 3 months [mean (±SD), −6.8±5.0 vs. −2.7±3.7 percent of body weight; P=0.001], but the difference at 12 months was not significant (−4.4±6.7 vs. −2.5±6.3 percent of body weight, P=0.26) (28).

In contrast to these findings Stern et al. found that participants on the low-carbohydrate diet maintained most of their 6-month weight loss, whereas those on a conventional diet continued to lose weight throughout the year (29).

A systematic review and meta-analysis showed that life style modification strategies (defined as any strategy focused on improving physical activity and/or diet to prevent diabetes through weight loss) implemented under real-world conditions are promising approaches for preventing diabetes (30). In this study the participants receiving an intervention had a 29% lower risk of developing diabetes, lost 1.5 kg more body weight, and reduced fasting blood glucose by 0.09 mmol/L more than participants not receiving one (30).

Apart from dietary interventions, evidence was available for motivational and behavioral intervention studies carried out to treat obesity in cardiac patients. A systemic review on motivational interviewing revealed that there is a significant reduction in body weight (kg) for those in the intervention group compared with those in the control group [weighted mean difference (WMD) =−1.47 kg (95% CI: −2.05, −0.88)]. For the BMI outcome, the WMD was −0.25 kg/m2 (95% CI: −0.50, 0.01) (31). Another study which investigated the effect of supervised cardiac rehabilitation programs over non-supervised programs revealed that there is a significant decrease in body weight, waist circumference, waist to hip ratio and body mass index in patients engaged in supervised program than the patients attended to the non-supervised program (32). In the systematic review by Klein et al. has stated that persons who are overweight or obese and physically active (participate in 30 minutes of moderate-intensity physical activity most days of the week) or who have moderate to high levels of cardio respiratory fitness (in the upper four fifths of the age and sex fitness distributions) have much lower death rates from cardiovascular disease and all-cause mortality than people who are sedentary and unfit (33).

When practicing the plate model concept several limitations were identified which may have hindered the accuracy of the outcome of final results. In the current study the patient compliance was not measured. Therefore, if a participant did not follow the instructions in the way that is required, the results collected from that participant would not be a valid assessment. Further the results may differ due to other limitations such as, economic barriers, myths and beliefs. The participants may also have difficulties in following the advices due to relative high cost of vegetables and proteins rich food items compared starchy foods in Sri Lanka. As the participants consumed different types of foods, the energy intake may differ affecting the results of the study. Since most vegetables are consumed as curries in Sri Lanka, the fat and total calorie content of the dish may differ with the mode of preparation. Moreover, the participants might have other dietary (cut down on saturated fats) and exercises habits given in the standard rehabilitation program, which may also interfere the results. Here the participants were not necessarily attempting to lose weight, so results may have differed for participants motivated to choose smaller portions for weight loss. The notable strengths of this study were the intervention being very simple and inexpensive.

Conclusions

Plate model is an effective dietary intervention in view of weight reduction in post-MI patients especially for overweight and obese patients. Compared to other complicated weight loss strategies, plate model is ideal for many people because of its simplicity and easiness to follow. Also, it is an effective way of introducing meal planning which is an alternative to the traditional way of exchange-based teaching and meal planning.

Acknowledgements

Authors would like to thank all research assistants including Dr. Pasindu Fernando and Mrs. Nishanthi Wijayathunge. This work was funded by the Cardiology Trust Fund, Institute of Cardiology, National Hospital of Sri Lank.

Footnote

Conflicts of Interest: R Jayawardena has written a book based on plate model concept namely My Rice Plate. It has been published by Colombo Medical Faculty Publisher, University of Colombo, Sri Lanka. R Jayawardena has already applied for patent for the melamine rice plate and his application is under review. The other authors have no conflicts of interest to declare.

Ethical Statement: The study was approved by the Ethics Review Committee (ERC), National Hospital of Sri Lanka and Faculty of Medicine, University of Colombo. This is registered under Sri Lanka Clinical Trials Registry (SLCTR/2016/22). Written informed consent was obtained from all the eligible subjects.

The Life Saving Treatment for Patents with CVD

MAXX OMEGA 3

Omega 3 Fatty Acid 600mg, EPA300mg, DHA 200mg

HIGH STRENGTH FISH OIL FROM DANISH FISH.

Omega 3 Fatty acids helps in the prevention & reduction of severity of diseases, like heart disease, diabetes and neurodegenerative diseases such as Alzheimer's and other inflammatory diseases including osteoarthritis

- ***Purified from environmental toxins such as mercury***
- ***30 years of success behind the product***
- ***No fishy smell***

℞ ***In maintaining healthy Cardiovascular Disease***
In Osteoarthritis and Rheumatoid Arthritis
For Cognitive development

Recommended by AHA in CHD

MEGA We care
Human Wellness

Take 1 capsule before bed time

PUBLISHED BY
INDEPENDENT MEDICAL PRACTITIONERS ASSOCIATION
275/75, PROF. STANLEY WIJESUNDARA MW, COLOMBO 7. Tel: 0112 501 113 Fax: 0112 500 818
E-mail: champa.impa@gmail.com | info@impa-lk.org Web: www.impa-lk.org