Diet Link

OFFICIAL NEWSLETTER OF THE MALAYSIAN DIETITIANS' ASSOCIATION

ISSUE 3 / 2019

Content

FROM THE EDITORIAL DESK

Lee Zheng Yii
BSc (Dietetic),
MSc (Clinical Nutrition)

Hi all, welcome to the third issue of the Diet Link 2019. This time, one of the most important RCTs for the dietitians is summarized. For the first time, individualized nutrition support is proven beneficial among medical inpatient with nutritional risk in a nicely designed large RCT. On the other hand, two systematic reviews summarizing the research done locally about diet and physical activity among the adolescent is also presented, highlighting the need for more research among the adolescent group. The summary recommendations of the latest nutrition therapy guidelines for adults with diabetes or prediabetes by the American Diabetes Association is presented for a quick update. We have also a special article written by the organizing chairperson of the Malaysian Dietitians' Day 2019 with the theme 'Dietitians Beat High Blood Pressure'. In this issue, we are featuring a sports dietitian, giving us a glimpse of the daily activities of this career that is not commonly pursue by local dietitian. In the research methodology corner, the important features of a good RCTs are summarized in the hope that everyone can learn the skills of understanding and evaluating an RCT.

We are also proud to present the writeup from the winners of the posters and oral presentation in the 25th MDA conference. Lastly, a detailed writeup about the 25th MDA conference is presented.

It is not an easy task to continuously producing content for the newsletter every quarterly. Hence, we are recruiting talented dietitians out there. We need the following talents

1) English content writer
2) English language editor
3) Malay content writer
4) Malay language editor
5) Ideas generator

Perhaps you are unsure whether you are suitable for the above task. You may choose to try out on one issue and later decide whether to support the diet link publication continuously. If you think that you have any of the talent above , please feel free to contact me at **zheng_yii@hotmail.com**

> "**Meanwhile**, sit back and enjoy **the Diet Link!**"

WHAT'S NEW IN THE FIELD?

International Study

Lee Zheng Yii[1]
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Individualised Nutritional Support in Medical Inpatients at Nutritional Risk: A Randomised Clinical Trial

This pragmatic, investigator-initiated, open-label (only the outcome-assessors were blinded), multicentre, randomized, controlled trial assigned (1:1) medical patients at nutrition risk (nutrition risk screening 2002 [NRS 2002] score ≥3 points) and with expected length of hospital stay of >4 days from 8 Swiss Hospitals to receive either protocol-guided individualized nutritional support to reach protein and caloric goals (intervention group) or standard hospital food (control group). (Table).

Patients who were initially admitted to intensive care units or surgical units; unable to ingest oral nutrition; already receiving nutritional support on admission; with a terminal condition; admitted to hospital because of anorexia nervosa, acute pancreatitis, acute liver failure, cystic fibrosis, or stem cell transplantation; after gastric bypass surgery; and with contraindications for nutrition support were excluded.

The composite primary endpoint was any adverse clinical outcome defined as all-cause mortality, admission to intensive care, non-elective hospital readmission, major complications, and decline in functional status at 30 days.

Intervention Group	Control Group
In the medical ward, 1) Caloric requirements: Harris-Benedict equation with adjusted bodyweight or indirect calorimetry 2) Protein requirements 1.2–1.5 g/kg bodyweight per day (0•8 g/kg of bodyweight per day in patients with renal failure with no dialysis) 3) Micronutrient requirements: Multivitamin use; other micronutrients according to specific laboratory results 4) Disease-specific adaptations (eg, medium-chain triglycerides, low potassium in patients with renal failure) Level of Intervention (initiated <48 h after admission) Level 1: Oral nutrition (meals adapted to preferences, food fortification or enrichment, and snacks between meals and oral nutrition supplements) + multivitamin & multimineral supplements according to 100% of RDA. If unable to achieve 75% of caloric and protein target after 5 days→ Level 2: Enteral nutrition (EN) + oral nutrition (no addition vitamins and mineral supplements if EN provides ≥1500 kcal/day) If unable to achieve 75% of caloric and protein target after 5 days→ Level 3: Parenteral nutrition + EN and oral nutrition Before hospital discharge, Dietary counselling and, if indicated, a prescription for oral nutritional supplements in the outpatient setting	Standard Hospital Food according to their ability and desire to eat, with no nutritional consultation and no recommendation for additional nutritional support.

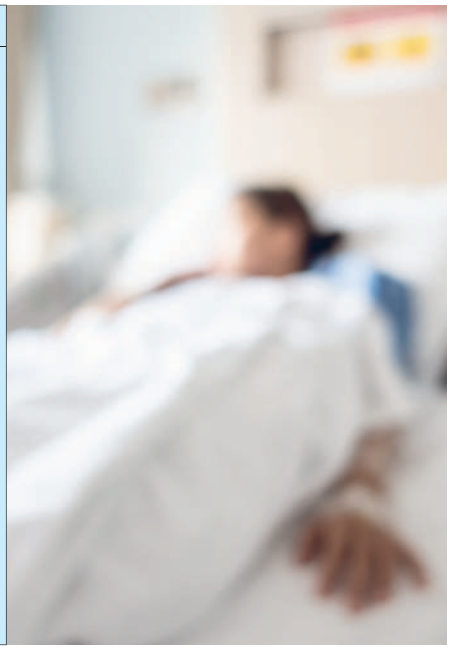

Table: The Intervention

International Study

Between April 2014 to Feb 2018, 2088 patients were recruited (Intervention group, n=1050; Control group, n=1038). During the course of the trial, 60 patients withdrew consent (35 in the intervention group, 25 in the control group).

Baseline characteristics were similar between groups. Patients had a mean age of 72.6 years and a mean BMI of 24.8 kg/m². The most frequent admission diagnoses were infection, cancer, and cardiovascular disease. Patients had a high burden of comorbidities, including malignant disease, chronic kidney disease, coronary artery disease, diabetes, and congestive heart failure.

During the hospital stay, caloric goals were reached in 800 (79%) and protein goals in 770 (76%) of 1015 patients in the intervention group. The mean calorie and protein received by the intervention versus the control group were 22.2 kcal/kg/day vs 18.2 kcal/kg/day and 0.84 g/kg/day vs 0.70 g/kg/day, respectively.

By 30 days, 232 (23%) patients in the intervention group experienced an adverse clinical outcome (primary endpoint), compared with 272 (27%) of 1013 patients in the control group (adjusted odds ratio [OR] 0.79 [95% CI 0.64–0.97], p=0.023). (Number needed to treat to prevent one adverse clinical outcome [NNT] = 25)

At day-30, 73 (7%) patients had died in the intervention group compared with 100 (10%) patients in the control group (adjusted OR 0.65 [0.47–0.91], p=0.011). (NNT to prevent one death = 37)

There was no difference in the proportion of patients who experienced side-effects from nutritional support (gastrointestinal side-effects, complications due to tube feeding or central venous catheter for parenteral nutrition, liver or gallbladder dysfunction, hyperglycaemia, and refeeding syndrome) between the intervention and the control group (162 [16%] vs 145 [14%], adjusted OR 1.16 [0·90–1·51], p=0·26).

The effect of nutrition support on the risk for the primary endpoint was consistent across predefined subgroups based on age, sex, baseline nutritional risk stratification or NRS 2002 score, initial BMI, diagnosis on hospital admission or diabetes. A more pronounced beneficial effect of nutritional support was found in patients with chronic kidney disease.

The findings of this trial strongly support the concept of systematically screening medical inpatients on their admission to hospital regarding nutritional risk, independent of medical condition, followed by a nutritional assessment and introduction of individualised nutritional support in patients at risk.

Reference:
Schuetz P., Fehr R., Baechli V. et al. *Lancet* 2019;393(10188):2312-2321. DOI: 10.1016/S0140-6736(18)32776-4

WHAT'S NEW IN THE FIELD?

Local Study

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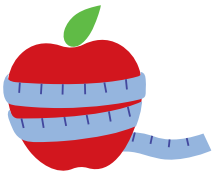

Diet and Physical Activities in Malaysian Adolescents: Summary of 2 systematic reviews

Background

The increased prevalence of unhealthy eating habits and sedentary lifestyles among Malaysian adolescents has become a public health concern. Having sedentary lifestyle and an unhealthy diet are major factors in the increasing prevalence of obesity among Malaysian adolescents. The purpose of the first systematic review was to compile the evidence from observational and intervention studies among Malaysian adolescents to evaluate the associations between diet and physical activity (PA) as determinants of cardio-metabolic risk factors. The second systematic review aimed to summarize the evidence from observational studies related to diet and PA among Malaysian adolescents (13-18 years) and to recognize the associations between determinants of diet and PA and diet and PA behaviours.

Methods

A systematic search of Medline via PubMed, Science Direct, Cochrane Review and Web of Science databases was conducted for studies on the associations between diet and PA factors and cardio-metabolic risk factors among Malaysian adolescents aged 13-18 years that were published until 31 August 2017. The search results were independently screened and extracted by two reviewers.

Results

From over 2,410 references retrieved, for the first systematic review, 20 full texts articles were screened as potentially relevant. Seventeen (16 cross-sectional and one intervention) met the inclusion criteria for data extraction and analysis. All 17 studies were rated as poor quality and the majority had made insufficient adjustment for confounders. As regards the effect of diet and PA on cardio-metabolic health, the intakes of energy (n = 4) and macronutrients (n = 3) and meal frequency (n = 5) were the most commonly studied dietary factors, while the PA score and level were the most commonly studied PA factors. In addition, BMI and body weight were the most common cardio-metabolic health outcomes. The studies showed that obese and overweight adolescents consume significantly more energy and macronutrients. They are also more likely to skip their daily meals compared to their normal weight peers. In most studies, the direction of the PA effect on body weight was unclear as limited studies were conducted investigating this. Some studies found that higher PA is associated with a lower risk of overweight and obesity.

For the second systematic review, A total of 18 studies met the inclusion criteria. Gender and ethnicity were the most commonly studied correlates of diet and PA; males were more physically active and they tended to have poorer diet quality and higher energy and macronutrient intakes in comparison to females; Malay adolescents had a lower diet quality and Chinese adolescents spent less time in PA compared to other ethnicities.

Limitations

These systematic reviews found that the associations are often small or inconsistent, with few studies controlling for confounding factors.

Conclusions

It was identified a lack of evidence and well-conducted prospective studies on the effect of diet and PA on cardio-metabolic health of Malaysian adolescents. At the moment, the summary of what is published will be the best available evidence for policymakers and public health practitioners to improve the diet and the level of PA in Malaysian adolescents. It is important for us to conduct a larger and more robust intervention studies to combat the malnutrition issues among our adolescents.

Reference:
Mohammadi S., Jalaludin MY., Su TT., Dahlui M., Mohamed M., & Majid HA. Dietary and physical activity patterns related to cardio-metabolic health among Malaysian adolescents: a systematic review. *BMC Public Health* 2019; 19(1): 251. doi: 10.1186/s12889-019-6557-z

Mohammadi S., Jalaludin MY., Su TT., Dahlui M., Azmi Mohamed, MN, & Abdul Majid H.. Determinants of Diet and Physical Activity in Malaysian Adolescents: A Systematic Review. *Int. J. Environ. Res. Public Health* 2019; 16(4): 603. doi: 10.3390/ijerph16040603

HEALTHY RECIPE

Chicken Aubergine Parmigiana, 2 servings

Ingredients:
1) Aubergine, 1-2 small whole, sliced into rings
2) Chicken breast, 1 whole, flattened
3) Salt & Black Pepper
4) All-purpose flour, ¼ cup
5) Egg, 1 whole, beaten
6) Olive oil, 2-3 tablespoons
7) Tomato sauce of choice, ¼ cup
8) Basil leaves, 3-4 leaves + extra for garnish
9) Mozzarella cheese, 2-3 tablespoons
10) Parmesan or pecorino, 1 tablespoon + extra for garnish

Steps:
1) Char the aubergine over a pan set over medium heat or a grill or a broiler, until both sides begins to char, around 3-4 minutes per side.
2) Season the flattened chicken breast, coat with flour, followed by egg and then flour again.
3) Into a shallow skillet, add the olive oil over medium high heat.
4) Once the oil shimmers, still on high heat, fry each side of the chicken to form a brown crust without cooking the chicken through, around 45 seconds to 1 minute on each side on high heat.
5) Place the chicken unto a tray or an oven safe skillet.
6) Over the chicken, layer 1 layer with tomato sauce, followed by approximately 1 tablespoon of mozzarella and 1 layer or aubergine rings.
7) Place another layer of tomato sauce, followed by basil leaves, the remaining mozzarella and parmesan.
8) Grill at 180 degrees' Celsius for 8-12 minutes, garnish with more basil leaves and parmesan and serve hot with remaining tomato sauce and 2 slices of crusty bread per serving.

This recipe is technically (on a relative scale) not as healthy as a standard healthy dish, however, in comparison to its original recipe/counterpart, it has been modified.

This recipe was designed initially for a Caucasian client of mine in the past, who wanted to make chicken parmesan at home, however, felt that the recipe she used was overly greasy and downright guilt-tripping her, her original recipe has about 3 times the current recipe's fat content. It was also modified to have a much higher fibre content from the addition of the vegetables and the usage of the wholemeal toasts, where the original recipe has little (if you include basil as a vegetable) to no added vegetables.

The fat content can be further reduced, by swapping the pan-frying to oven baking, however, from my tests, the outcome produced has a significant deterioration in the texture of the crust. The other component where fat is concerned is from the usage of dairy products (parmesan & mozzarella) in the recipe, so in a sense, the added calories and fat come from the dairy serving included in this recipe.

Aside from that, the portioning aspect of it has also been adjusted to reduce the excessive carb component (approx. 75-80g per serving).

Leonard Yap
Leonard The Dietitian, Consultant Dietitian, Chef, Content Creator
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FB/Instagram: @LeonardTheDietitian

Nutrition Information:
Assuming each serving is accompanied by 2 slices of crusty bread
All nutrition information are estimation based on available food databases
Calories are higher in comparison to standard Asian meal sizes due to additional serving of dairy within the meal from added cheese

Calories: 695, Carbohydrates: 60g, Proteins: 35g, Fats: 35g, Fibre: 4g, Sodium: 450mg

EDUCATION GRANT RECIPIENT

A QUEST FOR KNOWLEDGE IN SOUTH KOREA

Hartini bt Ab.A'Ala, Penang General Hospital

First and foremost I would like to express my heartiest gratitude to MDA for giving me the opportunity to share my unique experience on 6th Global Symposium on Ketogenic Therapies For Neurological Disorder at Convention Center Jeju, Jeju, South Korea. My gratitude also goes to my sponsorship which enable me to taking part in poster presentation. For the record, my posters were on Implementation of Ketogenic Diet for Children with FIRES: A Case Report and Ketogenic Diet: A Successful Story of Child with Myoclonic Astatic Seizure.

The 6th Global Symposium on Ketogenic Therapies were attended by over 635 participants from 54 countries from various profession including scientists, pediatric and adult neurologists, epileptologists, nurses, dietitians, other allied health professionals, and trainees from every related field, to share up-to-date information on this rapidly expanding area of inquiry and high translational significance.

Under the theme "Embracing Diversity, Global Implementation and Individualized Care," KETO 2018 proposed a rich scientific program allowing participants to deepen our knowledge and have in-depth discussions with colleagues.

This academic visit to Korea is a big thing to me as it was the first time I have been to Korea. My "google" experience was so different with the real thing happened between my eyes. Anyhow, the conference itself was a chance for a lifetime for me.

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This symposium was a great opportunity for me to develop new ideas for current and future management of ketogenic diet, meet professionals from various countries, and experience Korean culture. The poster exhibition is one of the main activities throughout the 5 days event. Various medical cases were presented in a way that can be easily comprehend by attendees. I grabbed this rare opportunity by being curious and small discussion had been carried out through the process with dietitians from India, UK, US and Singapore.

One of the most highlighted events was the half day course for dietetic sharing specially conducted by renowned dietitian from John Hopkin Hospital. Besides, talk on the latest consensus ketogenic diet management by Prof Eric Kossoff, John Hopkin Hospital and sharing experiences on implementation of ketogenic diet in India were very informative and enlightening. Their sharing are able to be implemented in Malaysia as well.

Finally, I would like utter a significant and insightful inspiring quotation by a prestige Islamic scholar, Imam Syafie;

"knowledge doesn't come but you have to go for it"

Yes, I have been to Korea for the quest of ilmu (knowledge).

SPECIAL ARTICLE

Malaysian Dietitian's Day 2019

It all started since year 2015. Malaysian Dietitians' Day (MDD) falls on 19th September every year to celebrate the profession of dietitians as healthcare professionals. Over the past few years, MDD has successfully gathered dietitians on different interesting topics such as 'sustainable eating' and 'empowering kids to eat better' to reach out to the community in need.

This year, MDD 2019, with the theme of 'Dietitians beat high blood pressure', we wish to emphasize the important role of dietitians in disease management, particularly non-communicable diseases like hypertension. The target group we would like to reach out to are the bottom 40 (B40) or underprivileged group as current research in Malaysia shows that hypertension rate is relatively higher in those with low household incomes.

Therefore, the subcommittee members of MDD 2019 have planned and designed a series of activities to involve dietitians, not only from central region, but from other parts of Malaysia as well. We have a central event that is planned on the 21st September 2019(tentatively), in which booths will be set up by dietitian participants, conducting activities like screening, counselling, education and many more. Selected B40 communities will be invited to have fun learning from the dietitians on blood pressure control through diet and lifestyle.

Besides that, we welcome dietitians from all over Malaysia, to take charge and make a change in their region, even if they might not be able to make it to the central event. Dietitians who are interested are free to form groups of their own, decide on the activities they would like to conduct on dates that they deemed suitable. As for the target group of B40 or underprivileged community, the team of MDD2019 will be more than happy to assist in identifying one in the regions of the dietitians as well as assisting in grouping individual within the same region if needed.

This is a great platform and opportunity for the dietitians to reach out, to make a difference in the lives of the needy group. Dear dietitians, let's do this together!

Please do not hesitate to contact us at
dietitiansdaymda@gmail.com
should you need further information.

Please like MDD Facebook Page
(@malaysian.dietitians.day) for the latest update!

MDD 2018 with theme of 'Empowering kids to eat better

Goh Yee Wen
BSc. Nutrition and Dietetics (IMU)
Organizing Chairperson,
Malaysian Dietitian's Day 2019

FEATURED DIETITIAN

Goh Kok Wei
Sports Dietitian
National Sports Institute of Malaysia

1) Can you tell us a little bit about your background?
I'm Kok Wei. I came from a small family of 4 members. Both of my parents are doing business. I have one elder sister who is a dentist in Taiwan. I obtained my degree in Dietetic from University Sains Malaysia (USM), Kubang Kerian, Kelantan in year 2008. I was actively involved in sports (Taekwondo, long distance running) because during that time, that was the only entertainment. :) But soon I realized that I enjoy the topic of sports nutrition. I was interested with how athletes should eat and the topics that related to sports and exercise. I believe this somehow further boosted my interest towards choosing sports dietitian as my career.

2) What is your academic qualification?
I was graduated with a dietetic degree from USM in year 2008 and this contributed greatly to my nutrition and dietetic skills development and became the foundation throughout my career. In order to keep learning and remain competitive in this field, I continued my study in UPM and obtained a master degree in Business Administration. My interest is in strength training and endurance, so I took some courses to specialize in strength and conditioning, anthropometry measurement (level 2), sports coaching and sports specific coaching.

3) Can you share with us about your career journey?
After my dietetic degree, I knew that I would like to apply my dietetic and nutrition knowledge in sports because I believe the food that we eat and drink will influence how well we feel and perform. So, I got my first job as a sports dietitian after graduation. Three years later, I pursued my Master degree in Business Administration and majoring in marketing. This is because I think in order to achieve our service goal and objective, we need to have a business mindset or some framework or model to guide us. Currently, I'm pursuing my PhD degree at UPM in food science and technology. My research area is about recovery. I am looking for method/strategy that can help athletes to recover faster from fatiguing activities.

4) Tell us about your typical day as a sports dietitian.
Currently I'm working with Wushu, Bowling, Weightlifting and Basketball Women Team to help them to develop nutrition plan. About 70% of the athletes that I work with are trying to become bigger and stronger by gaining muscle mass. I also assist athletes to reduce fatigue and recover faster. There are some clinical issue as well such as female athlete triad, injury, high blood cholesterol and high uric acid.

During my typical workday, I am responsible for overseeing athlete's progress of body composition and dietary intake for the purpose of fulfilling training requirement. I keep in touch with athletes, get their feedback and rating of perceived exertion (RPE) of the training session, and then adjust their nutrient requirement in my meal planning. I also follow up to make sure that they follow the dietary plan. We work with exercise physiologist or conditioning specialist to get the information about their training load and training intensity. Based on these information we can estimate their energy expenditure. In certain cases, we will work with exercise physiologist to calculate their exact basal metabolic rate based on respiratory quotient by using respirometer. Based on all the information provided, we produce a meal plan and monitor from there. Besides that, I also work closely with coaches, athletes, sports scientist, psychologist, trainers, sport physician, and physiotherapist.

5) What is your consideration in consulting a national athlete for their diet plan? Any guidelines that you refer to?
It depend on the type of sports. Factors such as sport requirement, individual requirement, coach opinion, nature of the sport and also training phases (general preparation phase, specific preparation phase, competition phase, and transition phase) are some of our considerations. In addition, we also take into account the time when the athlete wake up, training schedule, school schedule, the food that the athlete had before training, and also the timing of consumption and recovery snack. Many factors impact the schedule and make nutrition plan challenging.

The amount of calorie intake, the timing of the competition and the different phases of training are all important to consider. One of the issues that is often overlooked is hydration status. For instance, indoor sports, which is thought to be not prone to heat stroke. However, athletes are at risk of dehydration if they are training indoor without air-conditioning, this is especially true when the surrounding humidity is high. They are not aware of it until we check the urine specific gravity. Overall, the main objectives are to ensure fuel availability, minimize fluid deficits, and enhance recovery to help athletes to achieve supercompensation.

Various guidelines can be used to prepare diet plan for athletes. Personally, I refer to the National Strength and Conditioning Association (NSCA), which is a US non-profit professional organization that dedicated to advancing the strength and conditioning profession around the world. Nutrition is one of the components that is highly emphasized in strength and conditioning program. They disseminate research-based knowledge and its practical application. They are also offering industry-leading certifications, publishing research journal, and organizing continuing education opportunities. Other than that, ACSM (America College of Sports Medicine), ISSN (International Society of Sports Nutrition), journals and books related to sports science and nutrition, and communication with sports dietitians around the world also help me to advance my knowledge in this field.

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6) How do you monitor the compliances of the athletes with your advice?
Several methods are used to monitor athletes' compliance. We will conduct field observation periodically to observe how the athletes implement their pre/during/post-diet plan. In addition, we also observe the athletes during their meal time at the café athlete. Besides that, we also use an app known as "Eat 2 Win" to monitor their food intake and give feedback instantly.

We will also ask questions related to fatigue, symptoms of food sensitivity, gastrointestinal problems, issues related with recovery and muscle soreness and so on to understand their problem. They are more willing to follow our advice if we are able to understand their problems.

7) What are the challenges in taking care of the diet of our national athletes?
Most of the athletes know that food is important and can affect their performance, and they will also claim that they are eating a healthy diet and taking good care of themselves. But they are not able to answer specifically what kind of healthy diet that they are practicing when asked.
So, I found that the knowledge among our athletes are lacking although they might be doing the right thing. The common mistake among athletes are overeating convenience items, living in house without food and fluid, not eating anything up to training. They are hungry, they feel tired, but they are not prepared with food and fluid to fuel themselves and rehydrate.

8) What makes you feel satisfied being a sports dietitian?
As a sports dietitian, I would feel satisfied when I am able to change athlete's dietary habit. Most of the time, small changes can be seen after a consultation, but a total change is very difficult. Sometimes change in dietary habits is observed but the athlete's performance/result is stagnant. It is especially joyful when you see athlete changed in their dietary habit and at the same time you see they are progressing and success in higher level of competition.

9) What is your advice to young dietitians who would like to venture into this field?
There is demand out there. It is because many athletes or teams are on their own. We have football league, basketball league, hockey league, tennis, etc. You might not heard of it, but they are there struggling to improve themselves. There are either self-finance or sponsored by corporate. They hire coach themselves, conduct training on their own and they compete at high level of competition. You just need to equipped yourself with the knowledge and know how to market and position yourself. There is many opportunities out there.

Besides that, nowadays many people are looking for health and fitness. They didn't compete in high level competition, but just want to improve themselves for personal best, and they are willing to pay for your service.

RESEARCH METHODOLOGY CORNER

Randomized controlled trial

Lee Zheng Yii
Department of Anesthesiology, Faculty of Medicine, University of Malaya

A randomized controlled trial (RCT) is an experiment in which individuals are randomly allocated to receive or not receive an experimental diagnostic, preventive, therapeutic, or palliative procedure and then followed to determine the effect of the intervention.[1]

The simplest form of RCT is the parallel design, whereby consecutive eligible subjects are randomly assigned to either receive a treatment of interest (intervention group) or usual care/placebo (control group). This article will focus on RCT in the clinical setting (clinical trial) and of parallel design.

A well-designed randomized controlled trial has at least the following characteristics

1. All potential subjects are screened consecutively with a predefined sets of eligibility criteria
A clinical trial may be conducted in an inpatient or outpatient setting. Ideally, all patients who are admitted to the ward or visited the clinic must be screened consecutively for eligibility. If the patient is not eligible, the reason needs to be documented and reported. You will get such information in the CONSORT diagram (usually the first figure) in a paper. This is to ensure that all patients have an equal chance to be included into the trial (minimizes selection bias) and also to help the readers assess the generalizability of the study findings.

2. A good randomization
The randomization process is adequately described and eligible subjects have an equal chance to be randomly assigned to either group. Randomization can be as simple as flipping a coin, or with the aid of a random number table found in statistical books or computer-generated random number.

Successful randomization will result in two groups of patients with equal known and unknown potential confounders. Confounders may influence the result of the study other than the intervention of interest. When confounders of both groups are balanced, we can be quite certain that the difference in the outcome of interest is due solely to the intervention of interest.

However, when the sample size is small (usually <100), a simple randomization may not be adequate to equally distribute confounders between two groups. Block randomization with stratification of important confounders may help to solve this issue, however, some limitations need to be kept in mind.[2] (further reading) Alternatively, known confounders that were not balanced could be adjusted statistically in multivariable models.

3.Allocation concealment
Besides ensuring a proper randomization process is being conducted, we also need to prevent researchers, clinicians, and subjects from predicting, and thus influencing (unconsciously or otherwise), the effect of the treatments. This important source of bias can be eliminated by concealing the upcoming allocation sequence from researchers and subjects. In large trials with adequate resources, randomization with a proper allocation concealment may be carried out by expensive methods such as pharmacy-controlled randomization or a 24-hour central randomization offices (phone-in or web-based). When resources are limited, the use of sequentially numbered, opaque sealed envelopes (SNOSE) is recommended as it is simple to execute, cheap and effective.[3] (further reading)

4.A detailed study protocol including a specific hypothesis, detailed description of the study intervention, a priori defined primary outcome with sample size calculation and analysis plan. The protocol ought to be registered in a public database before the beginning of the trial.
A good RCT should have a detailed protocol that is registered in a public database (e.g clinicaltrial.gov). In addition, the entire protocol should be strictly adhered by the researcher to ensure transparency and consistency of the intervention throughout the study. This can prevent the researcher from changing the study procedure (intentionally or unintentionally) to make the direction of the result in favor the expected outcome. If there is a change in the study protocol after trial commencement, the authors need to report the reason for the change.

An a priori defined primary outcome with sample size calculation is important. This will ensure that the study is adequately powered to test the hypothesized treatment effect. Of note small effect size (e.g. change in 0.5% of HbA1c with treatment) will require a large number of patients to have adequate power. Usually the primary outcome is the outcome where a causal inference can be made, and the secondary outcomes are hypothesis generating.

A predefined analysis plan is also essential to prevent researchers from modifying the analysis method when the result is not as expected. For example, they may 'fish' for a significant p-value by using different analytical methods, especially when the outcomes are not statistically significant. A predefined analysis plan can also prevent researchers from selectively reporting outcomes that are favorable to the hypothesis while omitting outcomes that are deemed unfavorable.

5. Blinding (Researcher, subjects, outcome-assessor)
Ideally, the researchers, subjects and the outcome-assessors should not know the subjects' treatment group until the completion of the statistical analysis. This is to ensure that both groups are treated equally throughout the study, and the difference in the outcome of interest (if any) is due to the treatment alone. This is commonly practiced in drug trials whereby a third party will administer the treatment group with the drug with active ingredient, and the control group with the placebo, both with similar outer appearance, taste and smell.

Blinding may be difficult or impossible in certain types of study. For example, blinding is rather impossible in the RCT presented in 'page 2' that test the effect of individualized nutrition support in medical inpatient as the researcher and patients will definitely know when an individualized nutrition support is given. The researchers try to minimize this bias by blinding the outcome assessors and also use a primary outcome that is objective.

6. Intention-to-treat (ITT) analysis
ITT analysis includes all randomized patients in the groups to which they were randomly assigned at the start of the study, regardless of their adherence with the entry criteria, regardless of the treatment they actually received, and regardless of subsequent withdrawal from treatment or deviation from the protocol. ITT analysis is very important to preserve the balance between the 2 groups in both known and unknown potential confounders generated from the original random allocation (see point 1). It gives an unbiased estimate of treatment effect. In addition, ITT analysis preserves sample size (and hence the power of the study) and allows for the greatest generalizability of the study result (as noncompliant and dropout are common in a real-life setting).[4] (further reading)

All of the above criteria are to minimize bias (factors that may influence the causal relationship of the result) and hence maximize internal validity of the result. Only a well-designed RCT can inform causation. Therefore, we can use the word 'effect' rather than 'association' because a causal relationship is established by hypothesis testing. In contrast, observational studies can only be used to generate hypotheses because we can only learn about association and not causality.

When interpreting an RCT, it is also important to look at the generalizability (or external validity) of the result, i.e. which population/what situation can the intervention of the study be applied. This is to ensure that the intervention is applied to the appropriate population. To do this, we can examine the inclusion and exclusion criteria, and the baseline characteristics of the recruited patients (age, gender, diagnoses etc) as such information will inform us about the population to which the intervention may be more applicable.

Although RCT is the best research method to inform causation, there are many circumstances in which it is unethical to conduct an RCT when the expected result of an intervention is obvious or may endanger the subject. For example, observational studies have demonstrated that smoking is harmful to health, and such association is consistent, specific, coherence, temporal, the magnitude of the association is large.[5,6(further reading)] The harmful consequences of smoking on health are obvious, and therefore, it is unethical to randomize non-smokers to receive smoking as an intervention and examine the effect of smoking on health. An extreme example is that we do not need to randomize people to jump from a flying aeroplane with or without a parachute to know that parachutes are effective in preventing death from jumping from an airplane.[7]

Some relationship are intuitively causal, however, not all are as straightforward as the parachute example. This is especially relevant for any intervention proposed for the treatment of a disease condition as human beings are complex. This is when a well-designed RCT is essential for the establishment of the causal relationship (by minimizing confounding factors and biases).

Lastly, the CONSORT 2010 checklist is a handy tool for both readers and authors of RCT to check the essential information that should be included in an RCT paper (**http://www.consort-statement.org/**)

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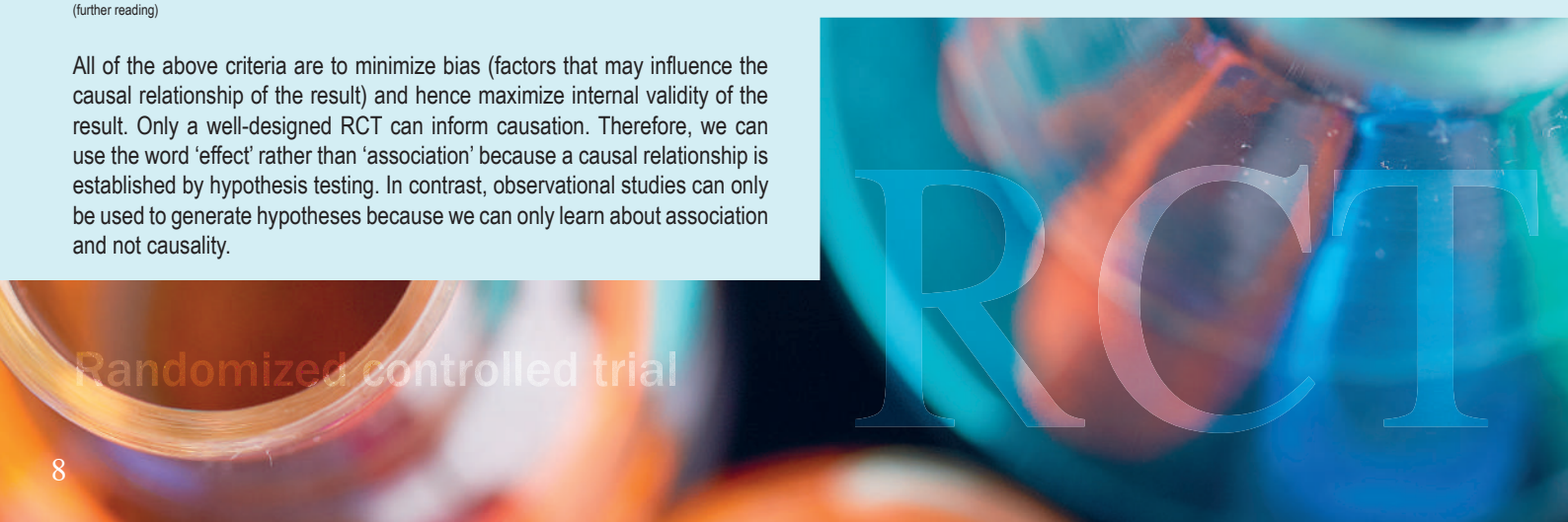

★ DIETITIAN CATEGORY ★

BEST DIETITIAN RESEARCH (POSTER)

The Influence of Socioeconomic, Clinical, Nutritional and Functional Determinants on Post-stroke Malnutrition among Stroke Survivors under Rehabilitation Care

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Introduction

Stroke is a significant public health burden. It is the world's second largest killer (11.02% of total deaths in 2017) for the last 15 years.[1] The incidence rate of stroke is increasing in Malaysia, and it is the third leading cause of death (6.9% of total deaths in 2016).[2] One of the main challenges faced by stroke survivors is malnutrition, leading to poorer responses and recovery to rehabilitation.[3] When stroke patients are malnourished, they are at increased risk of mortality, morbidity, and poorer functional recovery.[4,5] This study aims to determine the prevalence of post-stroke malnutrition and its associated factors.

Methodology

In this cross-sectional study, a total of 172 community-dwelling stroke survivors in Terengganu were recruited during the rehabilitation phase from the rehabilitation clinic or centre, using purposive sampling. Socio-demographic data, clinical, anthropometric measurements, dietary intake, and functional status were recorded using questionnaires. Typically, post-stroke malnutrition can be defined as having a low body mass index (BMI) (BMI <18.5 kg/m^2 for <65 years; BMI <22.0 kg/m^2 for ≥65 years).

Results

Stroke survivors consisted of 54.7% men and 45.3% women, with a median age of 60.00 (15.00) years (age range 26 to 82 years). Most of them had ischemic stroke (75.0%), first-ever stroke (84.9%), hypertension stage 2 (51.2%), and mild cognitive impairment (29.1%). The median of post-stroke duration was 12.00 (23.00) months. Overall, stroke survivors consumed 1631 kcal/day with 219.2 g/day of carbohydrates, 73.9 g/day of protein, and 57.8 g/day of fat. About 13.4% of stroke survivors were found to be malnourished. In a multivariate analysis, age (adjusted OR=1.16; p<0.001), high risk of malnutrition (adjusted OR=5.40; p=0.002), and carbohydrate intake (adjusted OR=0.99; p=0.037) were found to be the significant predictors of post-stroke malnutrition after adjusting for gender, socioeconomic status, types of stroke, Malay version Mini-Mental Status Examination score, hypertension, and handgrip strength.

Discussion

The prevalence of post-stroke malnutrition in this study falls within the prevalence range of 8.2% to 33.0% in the chronic phase of stroke.[6-9] This study suggested that age and high risk of malnutrition have a detrimental effect on post-stroke malnutrition, however, higher intake of carbohydrate may reduce malnutrition. Age is an independent predictor of post-stroke malnutrition among stroke survivors. This finding supports the work of other studies that older age contributes to poor nutritional status.[10] Similarly, older stroke survivors are more likely to be malnourished compared to younger stroke survivors.[11] Dietary intake, specifically of carbohydrate is a good predictor to alleviate post-stroke malnutrition. Results from the present study are consistent with previous findings suggesting that reduced food intake was the promoting factor of post-stroke malnutrition.[12] As such, compromising dietary intake hinders the optimal recovery in stroke rehabilitation.[13]

Conclusion

These findings are essential for a reference in the nutritional management of post-stroke malnutrition to improve the nutritional status of stroke survivors. Early detection of malnutrition in stroke survivors, especially in those who are at high risk of malnutrition, namely from the elderly and poor dietary intake, should serve as a foundation in developing strategies for preventing post-stroke malnutrition across all populations and demographics.

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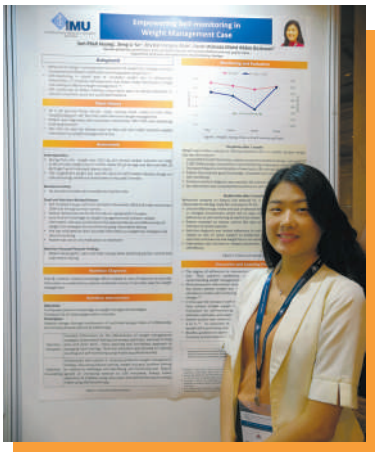
BEST DIETITIAN CASE STUDY (POSTER)

Empowering Self-monitoring in Weight Management Case



Soh Pheh Huang
International Medical University

Background

Behavioural change is an important component of weight loss strategy and with comprehensive lifestyle modification resulting greater weight loss.[1] Self-monitoring is crucial in successful weight loss. It increases self-awareness that foster target behavioural change and leading to effective weight management.[2] Dietary tracking using Mobile apps has gained popularity in view of convenient, quick and instant automated feedback.

Nutrition Assessment

A 24 years old single Malay female was diagnosed with secondary amenorrhea to rule out polycystic ovary syndrome with underlying mild hypertension and referred for weight management. Her weight was 143.2 kg, BMI indicated obesity class 3 and showed weight reduction of 2% from initial weight over 3 months. The insignificant weight loss was the result of self-initiated lifestyle change on reduced energy intake and started few exercise. Her self-restricted energy intake was 1900 kcal and started exercise for 40 minutes 2 weeks ago. However, she faced gastric pain and food craving while practising intermittent fasting. She had not seen by dietitian prior to visit and lack of prior knowledge on appropriate weight management by surfing internet previously. Hence, she is concerned on the appropriateness and effectiveness of weight loss strategies found online but has good motivation to learn accurate information on weight loss strategies and calories counting.

Nutrition Diagnosis

Food & nutrition related knowledge deficit related to lack of exposure to accurate information as evidenced by patient verbalised unsure of accurate ways for weight management.

Nutrition Intervention

The objectives were to empower patient's knowledge on weight management strategies and reduce weight by 5% of initial weight within 3 months. Lifestyle changes through combination of calories deficit at 1200 kcal/day and increase physical activity to 150 min/week were prescribed. Intervention was focused on education on content relevant to weight management including physical activity guidance, counselling on collaboration with patient in choosing her preferred weight management strategy, discussing exercise, weight loss goal, problem solving on challenges and identifying self-monitoring tool. Technical nutrition education was conducted to increase ability to use mobile apps (MyFitnessPal) for self-monitoring.

Nutrition Monitoring And Evaluation

Phone follow-up was conducted after 1 month. With good adherence and consistent use on MyFitnessPal, energy intake was controlled to 1200-1500 kcal/day and exercise was increased to 195minutes/week. A greater weight loss was shown, at 2.2% in 1 month. She retained good knowledge, motivated and satisfied with outcome of self-monitoring. Previous nutrition diagnosis was resolved. No intervention was conducted but continue self-monitoring using app.

During follow-up at the clinic after 2 months, she showed behaviour relapsed in diet and exercise due to lack of social support in changed environment which led to poor motivation. Poor adherence to mobile apps self-monitoring after 1 month and weight was regained. Nutrition diagnosis was limited adherence to nutrition-related recommendation related to lack of social support as evidenced by not adherence to energy restriction and exercise and weight loss is not achieved. Nutrition counselling was focused on relapse prevention, social support and appraised self-efficacy.

Discussion and Learning Points:

The degree of adherence to intervention is a principle determinant for weight loss. Thus, patient's preference is an important consideration when recommending weight management strategy. In this case, the increase in self-monitoring consistency, frequency, and adherence help achieve notable weight loss. Nevertheless, factors that determine the motivation for self-monitoring includes weight loss results, personal feeling, attitudes, aptitudes, and support from others. Several studies have shown adherence to self-monitoring declined, starting week 3 to 5.[3] To overcome the declination period, prompt reminders and appropriate follow-up might be beneficial for promoting and sustaining tracking. Besides, guidance on appropriate entering of data and familiarisation of the app's functions ensures ease of use which can encourage self-monitoring adherence. Multicomponent intervention includes dietary, exercise, and behavioural change has shown greater weight loss. This is effective in weight management than standalone mobile self-monitoring in order to achieve long term health behaviour change.[4]

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BEST DIETITIAN CASE STUDY (ORAL)

Another Piece of the Puzzle
A Case Study on The Application of the Nutrition Focused Physical Examination (NFPE) in the Outpatient Diet Clinic

Background
NFPE is a systematic examination of a patient's appearance to determine any signs of malnutrition and nutrient deficiencies. It is a part of the Nutrition Care Process specifically the Nutrition Assessment. The information obtained from the NFPE can be used to distinguish signs that are normal versus abnormal in the context of nutritional problems.1

Client History
The patient is a 44-year-old, female with Systemic Lupus Erymathous (SLE), Esophageal Stricture and Hypothyroidism since 2009. She has been seen by the dietitian in the outpatient clinic several times for severe GI losses as a complication of the disease and its treatment. She is able to feed herself orally, although minimal and has refused the insertion of a PEG. She was scheduled for an admission in two weeks for an OGDS as her signs and symptoms are worsening. She is on prednisolone and is compliant to the medication.

Nutrition Assessment
Her weight fluctuates between 40 to 45kg. At the current visit, she has lost approximately 4 kg of body weight over the course of one year. She weighed 43.5 kg and is at normal BMI (19.0kg/m2). Her current dietary intake mainly consisted of liquids (fruit juices, oral nutritional supplement @ 200ml daily) and minimal solid food. Over the past one month, she has been vomiting and passes melanic stools almost daily. She also complained of difficulty swallowing larger volumes at once. The Rutgers NFPE stepwise guide was used to conduct the NFPE for 3 main sites, i.e. muscle and fat stores, nails and intra-oral assessments.[2] Her fingernails were pale, brittle and chipped, she had moderate muscle stores and poor fat stores. The intraoral examination showed xerostomia, glossitis, edentulism and bleeding gums. She verbalized that she does not wear dentures and does not have any intraoral pain. Overall, she has poor nutritional status, is at risk of malnutrition with possible signs of micronutrient deficiency.

Nutrition Diagnosis
- Inadequate energy intake related to difficulty in swallowing due to esophageal stricture and persistent nausea & vomiting as evidenced by her current intake of approximately 800kcal/ day.

- Chronic disease related malnutrition related to physiological causes resulting in reduced intake (edentulism, nausea) as evidenced by moderate muscle loss, vomiting, GI blood losses and prolonged inadequate energy intake at approximately 800kcal (1 month).

Nutrition Intervention
Objective Of Management & Nutrient Prescription

To improve nutritional status by providing adequate energy and protein intake with oral nutrition supplement and a modified texture diet. She was prescribed with energy at 1400kcal/ day and protein at 45g/day. She was given a polymeric formula in 100cc volumes every 3 hours (37% total energy) and to continue with the texture modified diets for her main meals. The meal plan given to her was targeting approximately 80% of her requirement. She was advised for vitamin supplementation and would have to speak to her specialist for a prescription.

Nutrition Monitoring And Evaluation
When she comes back 2 months later, her current medical treatment has to be reviewed, weight changes and the NFPE on the same sites would have to be conducted again as well. It would also be important to review her dietary pattern, energy and protein intake. Obtaining biochemical data would be useful to confirm any micronutrient deficiencies.

Discussion & Learning Points
- In this case, although the patients weight had not changed significantly, the NFPE revealed a lot about her nutritional status.[1]
- The examination also revealed possible micronutrient deficiencies.[1]
- Certain outpatient settings do not have access to patient medical records including biochemical data. Therefore, conducting the NFPE showed some objectives signs of the patients' current condition.[3]
- The examination allowed the dietitian to plan an intervention specific to the patients' needs in terms of texture modification to provide adequate calories.
- The Rutgers stepwise guide in conducting the NFPE was practical and easy to use in this setting.[2]

The information obtained from the NFPE provides the dietitian with another piece of the puzzle in nutrition assessment. Conducting this examination gives dietitians a chance to humanize our patients and thoroughly understand the symptoms they have to deal with daily. It is an aspect that we need to practice and hone our skills in. Why not practice these skills in the outpatient setting?

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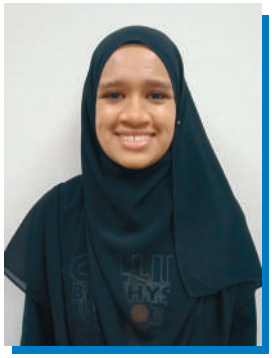
BEST STUDENT RESEARCH (POSTER)

Recognition, Attitude, and Knowledge (RAK) related to Fruits and Vegetables Intake among Malay children.



Mashitah Sha An Ali, Nur Azreen Mohd Nazir and Zahara Abdul Manaf
Universiti Kebangsaan Malaysia

Low consumption of fruit and vegetables among children is a problem faced locally and globally. The average daily intake of fruit and vegetables among Malaysian children aged below 13 years old is only approximately 2 servings[1]which is lower than the recommendation of five servings per day.[2] There is wealth evidence that children are more likely to eat foods that they are familiar with. In addition, good nutrition knowledge and a positive attitude are also known to influence children's dietary practices. A cross-sectional study was conducted to assess the recognition, attitude and knowledge (RAK) regarding fruits and vegetables intake among 134 Malay primary school children aged 9 to 12 years from five selected primary schools located at Klang Valley.

Corresponding results were found between the least recognised fruits and vegetables and the least preferred fruit and vegetables among the children. Based on the findings of this study, the least recognised fruits were kiwi (73.9%), guava (68.7%) and pear (53.0%), hence the percentage of liking these fruits were also low. Similar findings were obtained in the vegetables group. Capsicum (40.3%), kale (36.6%) and string bean (32.1%) were considered the least recognised vegetables among subjects as well as among the least preferred vegetables. A possible reason may be due to the children's familiarity and exposure of fruit and vegetables they consumed.[3] Therefore, familiarising children with fruit and vegetables through repeated exposure were likely to improve their fruits and vegetables preferences and consumption.

Children's willingness to try and eat new fruits (75.4%) were higher compared to vegetables (68.7%). This may be due to the bright colours and sweet taste of fruits which causes fruits to appear more appealing compared to vegetables. A minimum of 3 exposures to vegetables improved children's vegetables consumption.[4] In addition, we also found that more than half of the children expressed a reluctance towards eating a variety of fruit and vegetables. Therefore, it is important to educate children on eating a wide variety of fruit and vegetables.

This study also found that a majority of the children are not aware of the daily recommended serving sizes of fruit and vegetables. These may be one of the reasons for the low consumptions of fruits and vegetables among Malaysian children. Therefore, nutrition education programmes should focus on educating children of the recommended serving sizes of fruits and vegetables.

As a conclusion, the recognition and acceptability of fruits were higher as compared to vegetables among the children. Furthermore, the children were not aware of the recommended serving size of fruit and vegetables and consumption of a variety of fruit and vegetables. Findings of this study suggest parents to repeatedly expose their children to fruits and vegetables to improve their willingness to try a wider variety of fruit and vegetables. Furthermore, intervention programmes are needed to be carried out to improve children's nutrition knowledge on serving size and consumption of a variety of fruit and vegetables. This combined approach may facilitate behavioural changes leading to an increase in the consumption of fruit and vegetables among children.

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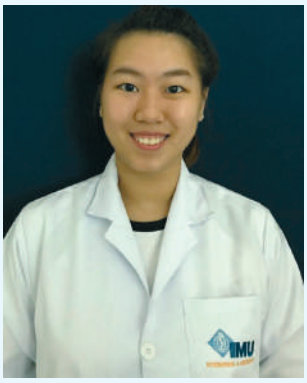
BEST STUDENT CASE STUDY (POSTER)

A Case Study – Importance of Coordination of Care with Family in Promoting Optimal Nutrition Delivery in a Patient with Compromised Functional Status and Self-Feeding Difficulties



Ng Hui Ru
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Trauma often causes hypermetabolism, altered nutrient absorption and reduced intake that put patients at increased risk of protein-energy malnutrition.[1] Now, instead of getting only the healthcare professionals involved, healthcare delivery has a paradigm shift towards patient-centered care by partnering with patients and their families to achieve better health outcome and lower healthcare costs.[2] This case study highlights the importance of family in providing support in assuring optimal nutrition delivery to patient with compromised functional ability to self-feed.

continue...

BEST STUDENT CASE STUDY (POSTER)

Nutrition Assessment

A 26-year old Indian Male suffered from multiple fractures over upper and lower limbs complicated with multiple organ injuries (including kidneys and liver) and bed sores was transferred to Hospital Sungai Buloh orthopaedic wards on 13th April, then undergone fixation surgery on 19th April. He was transferred to orthopaedic wards from ICU 3 days post-surgery and was referred to dietitian for enteral feeding regime. Nutrition assessment revealed that patient was underweight (BMI 17.1kgm2) with mild fat and muscle wasting (SGA-B). He was receiving inadequate enteral feed with the use of standard polymeric enteral formula for 5 days, providing only 436kcal and 17.5g protein as compared to estimated daily requirement of 2000kcal (30kcal/kg IBW) and 99g protein (1.5g/kg IBW). All feeding was done by patient's family members as patient had restricted physical movement and ability to self-care due to four-limbs fractures and orthopaedic casts. At the time of visit, patient was awaiting for swallowing test confirmation from speech therapist.

Nutrition Diagnosis

(1) Short-term: Inadequate protein-energy intake related to feeding regime not established as evidenced by 24 hour nutrient intake meeting merely 20% of energy and protein requirement.

(2) Long-term: Impaired ability to prepare foods/meals related to physical disabilities as evidenced by patient's medical conditions involving multiple fractures over upper and lower limbs as well as restricted physical movement by orthopaedic casts.

Nutrition Intervention

(1) Short-term Goal: To ensure adequate energy and protein intake for enhanced recovery and prevention of further malnutrition

(2) Long-term Goal: To establish safe and adequate access to food/nutrition via feeding assistance from family during mealtimes

Prescription: 2000kcal (30kcal/kg IBW); 99g protein (1.5g/kg IBW)

- Coordination of Care: Involved patient's family members in planning of feeding regime (amount, frequency, timing) i.e: took into consideration of their availability in ward
- Nutrition Education: Emphasized on family support in ensuring optimal and safe delivery of both enteral and oral feeding. Reinforced on proper feeding techniques and problem-shooting strategies.
- Food & Nutrient Delivery: To prevent further malnutrition and to promote recovery, a revised enteral feeding regime with the use of isocaloric high protein formula was used. Provided 8 scoops Optimaxe Lite + 300cc H2O, 3 hourly, 6 times/day (103% energy requirement, 97% protein requirement. If patient is allowed to consume food via oral route, feeding plan incorporating hospital high protein soft diet and supplementation with oral nutrition supplement (3 times/day) to compensate predicted early satiety was also prescribed. To optimize delivery of oral/enteral nutrition support, family members were encouraged and trained to deliver the feed.

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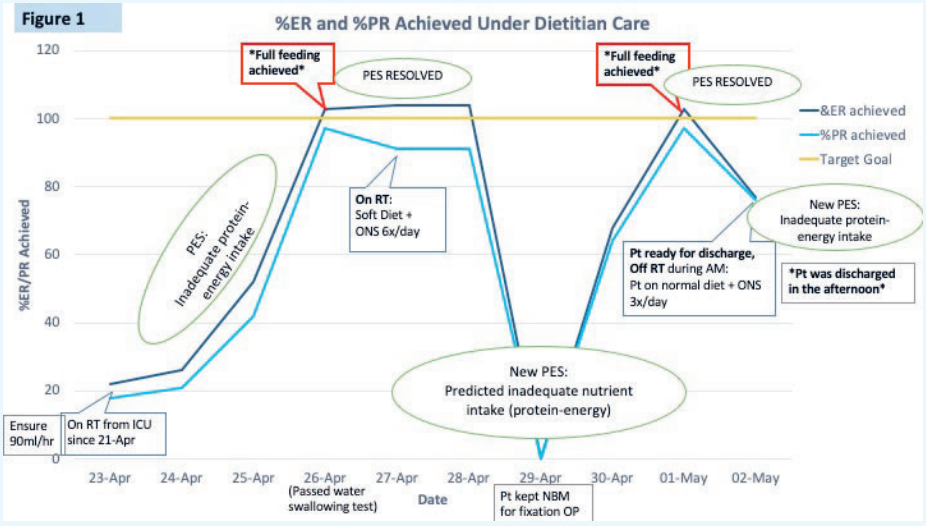
Nutrition Monitoring & Evaluation



Full feeding was established with good tolerance within 3 days (Figure 1) and continued with good family support. Patient passed swallowing test on 26th April 2019 and allowed to start oral intake under family's assistance and supervision. On 2nd May 2019, nasogastric tube was removed and he was allowed to discharge home. Prior discharge, a collaborative home nutrition plan highlighting high protein was derived between dietitian and family members to ensure adequate and safe access to nutrition at home:

- Provide 5 meals per day (3 main meals + 2 high protein snacks)
- Ensure 1.5 servings high quality protein food dueing 3 main meals
- Offer high protein snacks: steamed chickpeas, peanut butter sandwich, cracker topped with tuna spred, red bean soup etc.
- Replace ONS with 3 servings of full cream milk per day if needed.
- Reinforce assisted, supervised feeding by family menbers

BEST STUDENT CASE STUDY (ORAL)

Babies' First Bites: Weaning Diet For An Underweight Paediatric Patient

Nutrition Assessment
MHS, a 7-month old, male infant was referred to the outpatient diet clinic for poor weight gain. He was born with a cleft lip (surgery to be scheduled in 3 months' time) full term with low-birth weight at 2.4kg, he had poor growth velocity starting from 4 months old. Current weight and height were 6.1kg (below the 5th percentile) and 67 cm (at the 25th percentile). The main caretaker of the patient is the mother who takes care of the patient full time. Patient was alert and active during the consultation. The patient had a cleft lip, however ability to latch, suck, swallow and chew were not affected, hence, he did not require a specialised spoon or bottle nipple. No signs of intolerance towards current diet and normal bowel output. No picky eating behaviour and food refusal. Patient consumed 3 main meals, had 5-6 bottle feeds/day (2 scoops in 90ml water), breastfed for comfort feeding. Intake from all food groups were inadequate. Total energy intake was ≈340 kcal/day, meeting 40% of energy requirement (860kcal/d). MHS's mother showed lack of knowledge on the correct standard dilution of formula (Lactogen 2) and appropriate portion size of food groups for patient. Mother was motivated and ready to make changes to patient's diet.

Nutrition Diagnosis
Inadequate energy intake related to food and nutrition related knowledge deficit concerning appropriate diet for age as evidenced by patient's current intake meeting 40% of recommendation and current weight below the 5th percentile.

Nutrition Intervention
Short term goal: To achieve adequate energy intake to support weight gain by 0.4kg in 1 month.
Long term goal: To achieve adequate energy intake for optimum growth: weight moves from below 5th percentile to the 5th percentile

Nutrition Prescription
Energy: 860 kcal/day (Target: to meet at least 80%),
Protein: 17 g/day (Target: to meet at least 80%)
Fluid: 610 ml/day

Nutrition Education
Content:
Patient's mother was educated on: Relationship between appropriate weaning diet and weight gain, food groups and appropriate portion sizes for age and percentage of intake from solids and milk
Application:
- Suggested to increase formula intake from 2 scoops to 4 scoops with correct dilution.
- Educated on tips to increase energy density in meals
- Suggested to increase rice portion from 2 dsp to 4 dsp
- Provided pamphlet containing sample recipes
- Advised to continue with current meal and milk frequency

Counselling:
- Goal setting

Long Term Goal:
To achieve weight gain that falls at the 5th percentile

Nutrition Monitoring & Evaluation
MHS gained 0.4kg in 1-month (6.5kg), length: 69 cm- achieving growth velocity for his age. Energy intake met 100% of requirement. Mother has increased usage of oil from 1/4tsp to 2 tsp and increased rice portion from 2 dsp to 4 dsp for lunch and dinner, increased from 2 scoops to 4 scoops of formula milk. The patient will be monitored on growth, development and dietary intake.

Reflection
Handling this case has enlightened me on the other important assessments for feeding history such as challenges faced during feeding transition, sanitation and hygiene during preparation of formula milk. Besides, seeing how dietitians can act as facilitators of change for patients and the timeliness of referrals and intervention for poor weight gain cases like this were also some important learning points for me.

Gursharon Gill &
Charmaine Lavinia
International Medical University

25TH MDA National Conference 2019

Highlighting Digital Dietetics & Technology in Combating Diseases

Ng Kar Foo
International Medical University

The Malaysian Dietitians' Association 25th National Conference was held on 23 and 24 June 2019 at Hotel Istana Kuala Lumpur. The theme of the year was 'IR4.0 Dietetics: Digital Dietetics & Technology for Combating Diseases'. Many experts were invited to share their experience, findings and knowledge with about 250 delegates, consisting of local and international dietitians. The conference was filled with plenaries, symposia, workshops, case studies, paper and poster presentation, as well as corporate exhibition.

The 2-day event was officiated by YBhg Dato' Dr Chong Chee Kheong, Deputy Director General of Health (Public Health), Minister of Health Malaysia accompanied by Prof. Winnie Chee (MDA President), Assoc. Prof. Nik Shanita Safii (MDA Vice President), Dr. Nurul Huda Razalli (MDA Honorary Secretary) and YBhg Dato' Tan Yoke Hua (MDA Honorary Fellow). At the opening ceremony, a video was played to share the messages given by past MDA Presidents and Honorary Fellows in celebrating 25th MDA Anniversary. After that, several awards (as shown in Table 1) were presented to honour the hard work and contribution of the award recipients. The opening ceremony concluded with our Deputy Director General visiting the exhibition booths.

The topics of the conference were very exciting - Professor Dr Teh Lay Kek (Universiti Teknologi Mara) started the first plenary discussing the gene-nutrient interaction and demonstrating the possibility of using that information to derive nutrition solution to improve health; YBhg Dato' Dr Chong Chee Kheong (Ministry of Health) held the second plenary sharing the initiatives taken by government in the use of technology to transform local healthcare system; Mr. Azran Osman-Rani (Naluri Life Sdn. Bhd.) spoke in third plenary explaining integrated health coaching via a mobile application in delivering clinically-significant health outcomes; Assoc Prof Dr Shahrul Mizan Ismail (Universiti Kebangsaan Malaysia) led the fourth plenary stressing the need of transitioning from traditional to transformative teaching among Malaysian higher learning educators to better prepare learners in this changing world.

Among the symposia on the first day, Dr Aryati Ahmad (Universiti Sultan Zainal Abidin) shared how the Cancer Dietary (CanDi™) app benefitting patients living with cancer, cancer survivors and their caregivers in their routine dietary habits related to cancer conditions for a healthy living; Dr Zulfitri Azuan Mat Daud (Universiti Putra Malaysia) provided a brief review about the usefulness of the available renal diet apps for people on renal replacement therapy; Mr. Georgen Thye (Holmusk) demonstrated how GlycoLeap as a mobile lifestyle management program helping people with Type 2 Diabetes to improve glycemic control; Ms. Teong Lee Fang (Ministry of Health) explained a new innovative for advanced sodium learning – sodium counting in supporting dietitians during nutrition assessment and nutrition education; Dr Wong Jyh Eiin (Universiti Kebangsaan Malaysia) provided an overview about the evidence-based development of an image-assisted electronic food diary, namely Individual Meal-based Assessment Snapshot (IMBASTM) as a valid dietary assessment tool for Malaysians; Ms Norshariza Jamhuri (Ministry of Health) shared her experience in integrating Nutrition Care Process into Electronic Health Information System (eHIS) used in her hospital; Assoc Prof Dr Sawal Hamid Mohd Ali (Universiti Kebangsaan Malaysia) described the recent development of wearable systems for diet monitoring and discuss the gaps and challenges associated with the development as well as the future direction of the technology.

While on the second day, Prof Vishna Devi Nadarajah (International Medical University) shred light on the benefits of incorporating technology in assessing students competency and her experience of it in the university; Dr Manraj Singh Cheema (Universiti Putra Malaysia) provided ideas about gamification and game-based learning that promotes student learning and team building; Mr Bernard Reincastle (Timbre Innovation Solutions Sdn. Bhd.) covered a few innovative systems developed by his company aiming to provide tasty healthy food that has a traceable origin platform "From Farm to Fork" and to connect qualified dietitians to the community in need; Ms. Gladys Wong (Khoo Teck Puat Hospital, Singapore) presented the global challenges that dietitians may face when managing patients with dysphagia, an overview of the status of 3D Food printing overseas and in Asia, and how 3D Food printing may be the foodservice of the future for the aging population and beyond.

As in the workshops, Dr Lam Meng Chun (Universiti Kebangsaan Malaysia) elaborated steps that non-IT researchers or dietitians should consider and take in developing a mobile application. While in another room, Mr Georgen Thye (Holmusk) and Mr Ng Kar Foo (International Medical University) shared their experience in using web-based applications and mobile applications respectively in daily dietetic practice and also some useful resources pertaining to this topic.

Besides new insight given by the experts, students and dietitians were given opportunities to present their research and case studies. Be it in poster and in oral presentation. Their dedication and passion proved the quality of their work which was worth praising. This session was also a competition among all presenters and prizes were presented before the end of the conference to acknowledge their hard work and passion.

Overall, the national conference was a successful platform for all delegates to gain new knowledge and to build network. If you would like to get the flashback of the conference, click at this link to view the post conference video-
https://youtu.be/vxS67TF0Sl4

Table 1 : 25th MDA National Conference 2019 - Award Recipients

Honorary Fellows Prof. Noor Aini Mohd Yusoff (Universiti Sultan Zainal Abidin) Prof. Dr. Tilakavati Karupaiah (Taylor's University Lakeside Campus) A/P Dr. Nik Mazlan Nik Mamat (International Islamic University Malaysia) Datin Farah Diba Khan (Prince Court Medical Center)
Best Postgraduate Award - PhD Dr. Lee Ching Li (International Medical University) Best Postgraduate Award - MSc Nurul Alia Aqilah Binti Samiun (Universiti Putra Malaysia)
Outstanding Clinical Instructor Award Muhammad Hazim Bin Azenan (International Islamic University Malaysia) Nur Adilah Binti Muhammadun Basar (Universiti Putra Malaysia)
Outstanding Dietetics Undergraduate Award 1st Prize : Nur Shakirah Binti Mohd Noh (Universiti Teknologi MARA) 2nd Prize : Mohd. Siddeq Azha Bin Azahari (Universiti Kebangsaan Malaysia) 3rd Prize : Loh Hui Xin (International Medical University)

Ng Kar Foo
International Medical University

LATEST INTERNATIONAL GUIDELINES SUMMARY

NUTRITION THERAPY FOR ADULTS WITH DIABETES OR PREDIABETES: A CONSENSUS REPORT

Evert AB., Dennison M., Gardner CD et al. *Diab Care* 2019;42:731–754

GOALS OF NUTRITION THERAPY

1. To promote and support healthful eating patterns, emphasizing a **variety of nutrient-dense foods** in appropriate portion sizes, in order to improve overall health and specifically to:
   a. Improve **A1C, blood pressure**, **and cholesterol levels** (goals differ for individuals based on age, duration of diabetes, health history, and other present health conditions. Further recommendations for individualization of goals can be found in the ADA Standards of Medical Care in Diabetes)
   b. Achieve and maintain **body weight** goals
   c. Delay or prevent **complications** of diabetes
2. To address individual nutrition needs based on **personal and cultural preferences, health literacy and numeracy, access to healthful food choices, willingness and ability to make behavioral changes**, as well as **barriers to change**
3. To maintain the pleasure of eating by providing positive messages about food choices, while limiting food choices only when indicated by scientific evidence
4. To provide the individual with diabetes with **practical tools** for day-to-day meal planning

Academy of Nutrition and Dietetics evidence-based nutrition practice guidelines–recommended structure for the implementation of MNT for adults with diabetes

1. **Initial** series of MNT encounters: The RDN should implement **three to six** MNT encounters during the first 6 months following diagnosis and determine if additional MNT encounters are needed based on an individualized assessment.
2. MNT **follow-up** encounters: The RDN should implement a minimum of **one annual** MNT follow-up encounter.

MACRONUTRIENTS

1. Evidence suggests that **there is not an ideal percentage of calories from carbohydrate,** protein, and fat for all people with or at risk for diabetes; therefore, macronutrient distribution should be based on **individualized assessment of current eating patterns, preferences, and metabolic goals.**
2. When counseling people with diabetes, a key strategy to achieve glycemic targets should include an assessment of current dietary intake followed by **individualized guidance on self-monitoring carbohydrate intake to optimize meal timing and food choices** and to guide medication and physical activity recommendations.
3. People with diabetes and those at risk for diabetes are encouraged to consume at least the amount of **dietary fiber** recommended for the general public; increasing fiber intake, preferably through food (vegetables, pulses [beans, peas, and lentils], fruits, and whole intact grains) or through dietary supplement, may help in modestly lowering A1C.

EATING PATTERNS

1. A variety of eating patterns (combinations of different foods or food groups) are acceptable for the management of diabetes.
2. Until the evidence surrounding comparative benefits of different eating patterns in specific individuals strengthens, health care providers should focus on the key factors that are common among the patterns:
   a. **Emphasize nonstarchy vegetables.**
   b. **Minimize added sugars and refined grains.**
   c. **Choose whole foods** over highly processed foods to the extent possible.
3. Reducing overall carbohydrate intake for individuals with diabetes has demonstrated the most evidence for improving glycemia and may be applied in a variety of eating patterns that meet individual needs and preferences.
4. For select adults with type 2 diabetes not meeting glycemic targets or where reducing antiglycemic medications is a priority, reducing overall carbohydrate intake with low- or very low-carbohydrate eating plans is a viable approach.

ENERGY BALANCE AND WEIGHT MANAGEMENT

1. To support weight loss and improve A1C, CVD risk factors, and quality of life in adults with overweight/obesity and prediabetes or diabetes, MNT and DSMES services should include an individualized eating plan in a format that results in an energy deficit in combination with enhanced physical activity.
2. For adults with type 2 diabetes who are not taking insulin and who have limited health literacy or numeracy, or who are older and prone to hypoglycemia, a simple and effective approach to glycemia and weight management emphasizing appropriate portion sizes and healthy eating may be considered.
3. In type 2 diabetes, **5% weight loss is recommended to achieve clinical benefit, and the benefits are progressive.** The goal for optimal outcomes is 15% or more when needed and can be feasibly and safely accomplished. In prediabetes, the goal is **7–10% for preventing progression to type 2 diabetes.**
4. In select individuals with type 2 diabetes, an overall healthy eating plan that results in energy deficit in conjunction with weight loss medications and/or metabolic surgery should be considered to help achieve weight loss and maintenance goals, lower A1C, and reduce CVD risk.
5. In conjunction with lifestyle therapy, medication-assisted weight loss can be considered for people at risk for type 2 diabetes when needed to achieve and sustain 7–10% weight loss.
6. People with prediabetes at a healthy weight should be considered for lifestyle intervention involving both aerobic and resistance exercise and a healthy eating plan such as a Mediterranean-style eating plan.
7. People with diabetes and prediabetes should be screened and evaluated during MNT encounters for disordered eating, and nutrition therapy should accommodate these disorders.

SWEETENERS

1. Replace sugar-sweetened beverages (SSBs) with **water** as often as possible.
2. When sugar substitutes are used to reduce overall calorie and carbohydrate intake, people should be counseled to avoid compensating with intake of additional calories from other food sources.

ALCOHOL CONSUMPTION

1. It is recommended that adults with diabetes or prediabetes who drink alcohol do so in **moderation** (one drink or less per day for adult women and two drinks or less per day for adult men).
2. Educating people with diabetes about the signs, symptoms, and self-management of **delayed hypoglycemia** after drinking alcohol, especially when using insulin or insulin secretagogues, is recommended. The importance of glucose monitoring after drinking alcohol beverages to reduce hypoglycemia risk should be emphasized.

MICRONUTRIENTS, HERBAL SUPPLEMENTS, AND RISK OF MEDICATION-ASSOCIATED DEFICIENCY

1. Without underlying deficiency, the benefits of multivitamins or mineral supplements on glycemia for people with diabetes or prediabetes have not been supported by evidence, and therefore routine use is not recommended.
2. It is recommended that MNT for people taking metformin include an **annual assessment of vitamin B12 status** with guidance on supplementation options if deficiency is present.
3. The routine use of chromium or vitamin D micronutrient supplements or any herbal supplements, including cinnamon, curcumin, or aloe vera, for improving glycemia in people with diabetes is not supported by evidence and is therefore not recommended.

MNT AND ANTIHYPERGLYCEMIC MEDICATIONS (INCLUDING INSULIN)

1. All RDNs providing MNT in diabetes care should assess and monitor medication changes in relation to the nutrition care plan.
2. For individuals with type 1 diabetes, intensive insulin therapy using the carbohydrate counting approach can result in improved glycemia and is recommended.
3. For adults using fixed daily insulin doses, consistent carbohy drate intake with respect to time and amount, while considering the insulin action time, can result in improved glycemia and reduce the risk for hypoglycemia.
4. When consuming a mixed meal that contains carbohydrate and is high in fat and/or protein, insulin dosing should not be based solely on carbohydrate counting. A cautious approach to increasing mealtime insulin doses is suggested; **continuous glucose monitoring (CGM) or self-monitoring of blood glucose (SMBG) should guide decision-making** for administration of additional insulin.

PERSONALIZED NUTRITION

1. Studies using personalized nutrition approaches to examine genetic, metabolomic, and microbiome variations have not yet identified specific factors that consistently improve outcomes in type 1 diabetes, type 2 diabetes, or prediabetes.

ROLE OF NUTRITION THERAPY IN THE PREVENTION AND MANAGEMENT OF DIABETES COMPLICATIONS (CVD, DIABETIC KIDNEY DISEASE, AND GASTROPARESIS)

CVD

1. In general, replacing saturated fat with unsaturated fats reduces both total cholesterol and LDL-C and also benefits CVD risk.
2. In type 2 diabetes, counseling people on eating patterns that replace foods high in carbohydrate with foods lower in carbohy drate and higher in fat may improve glycemia, triglycerides, and HDL-C; emphasizing foods higher in unsaturated fat instead of saturated fat may additionally improve LDL-C.
3. People with diabetes and prediabetes are encouraged to consume less than 2,300 mg/day of sodium, the same amount that is recommended for the general population.
4. The recommendation for the general public to eat a serving of fish (particularly fatty fish) at least two times per week is also appropriate for people with diabetes.

Diabetic Kidney Disease

1. In individuals with diabetes and non–dialysis-dependent diabetic kidney disease (DKD), reducing the amount of dietary protein below the recommended daily allowance (0.8 g/kg body weight/day) does not meaningfully alter glycemic measures, cardiovascular risk measures, or the course of glomerular filtration rate decline and may increase risk for malnutrition.

Gastroparesis

1. Selection of small-particle-size foods may improve symptoms of diabetes-related gastroparesis.
2. Correcting hyperglycemia is one strategy for the management of gastroparesis, as acute hyperglycemia delays gastric emptying.
3. Use of CGM and/or insulin pump therapy may aid the dosing and timing of insulin administration in people with type 1 or type 2 diabetes with gastroparesis.

BOOK YOUR CALENDAR - MDA UPCOMING EVENTS

Medical Nutrition Therapy Updates in Oncology Workshop 2019

Date: 19-20th August 2019 (Southern Region); 17-18 Sept 2019 (Central Region)

Time: 8am – 5pm

Venue: Aras 6, Dewan Sri Rampai, Hospital Sultan Ismail, Johor (Southern Region)

Bilik Seminar 1&2, Institut Kanser Negara (Central Region)

4th National Dietetic Education Workshop (NDEW)

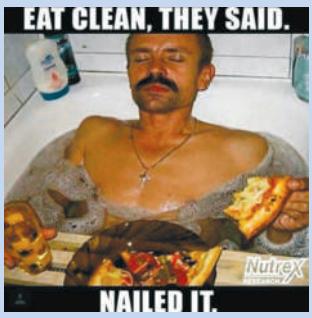
Date: 19-20th August 2019

Venue: Hospital Pengajar Universiti Putra Malaysia (HPUPM)

Malaysian Dietitian Day 2019

Theme	: Dietitians Beat High Blood Pressure
Date	: 21st September 2019 (tentatively)
Time	: 7am-11am
Venue	: Cyberjaya (exact venue will be announced later)

HAVE A LAUGH - DIET JOKES



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