

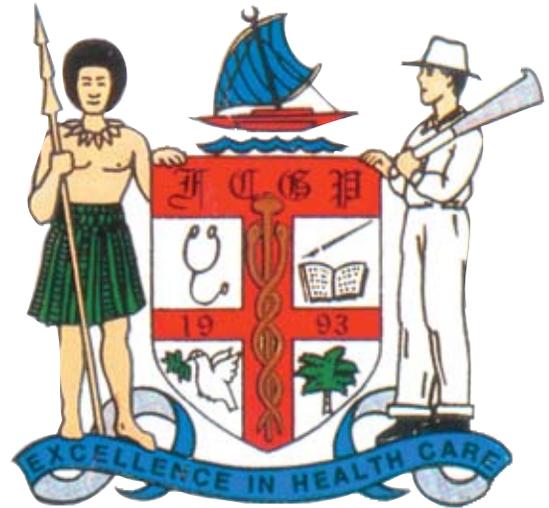
FIJI GENERAL PRACTITIONER

GP

VOLUME 15 NUMBER 4 DECEMBER 2007

Journal of The Fiji College of General Practitioners

ISSN 1992-0334



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INVITED REVIEW

**THE IMPACT OF TOTAL TERTIARY
HEALTHCARE IN FIJI**

CHRONIC ANGER: THE SILENT SLAYER

CHRONIC ILLNESS

A GENERAL PRACTICE IN YEAR 2020 - A VISION

RESEARCH ARTICLE

**OBESITY IS A CHRONIC MULTI-SYSTEM
DISORDER**

SPECIAL REPORT

**APOLLO PACIFIC HOSPITAL'S IMPACT
ON OTHER INVESTMENTS IN FIJI**



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General Practitioner is the professional journal of the Fiji College of General Practitioners and is published quarterly by

Islands Business International Limited

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Designed & Typeset by
Islands Business International Ltd.
Colour Separations by Star Printery Ltd.
Printed by Star Printery Ltd.

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EDITORIAL

Recent studies have indicated that the most obese individuals are closer to us in the Pacific basin

Globesity.

This issue of the Fiji General Practitioner deals with the topic of obesity. Addressing this issue of global magnitude, even World Health Organization has coined the word "Globesity" to emphasize the epidemic we are faced with. "The time to act is now," is the important message we are receiving from experts in the areas of epidemiology, food and science technology.

Recent studies have indicated that the most obese individuals are closer to us in the Pacific basin. Nauru, Tonga and Samoa rank very highly on the Obesity scale (1). Our local public health nurses statistical returns indicate that over 60% of our children in the urban areas are obese and need close nutritional guidance. Then again, there are 20% who are undernourished leaving only 20% in the ideal body weight for age (2). What a contrast.

Dr Lako's invited review article places into brilliant perspective the issues of the modern day Fijian diet. The consequences of which include many of our non communicable diseases which are becoming a huge burden on our overstrained healthcare system. The need for a multi-pronged action strategy cannot be over emphasized.

The lessons From Uncle Sam.

The concept of fast food chains is still new to us in the Pacific. However, the experience from the USA should not be forgotten. Once we start living in cities and move away from eating fresh fruit and vegetables which may seem difficult to access, we take the first step towards consuming processed foods, snacks, super sized, trans-fat laden caloric rich foods. Acquired taste from childhood results in the next generation ending up guzzling up on sweet, syrupy soft drinks, caloric rich snacks and not undertaking any exercise, sitting in front of the mother figure in the household - the Television. If indeed we are in the midst of an epidemic then major mind set changes are long overdue.

Meal Planning and School Lunches.

If we are to provide a nutritious meal to start the day then the data from Dr Lako suggests that we use whole meal bread, cut back on the margarine and butter and offer the family some fruit for breakfast. Use of whole meal bread and flour is in fact financially rewarding comparative to white refined flour and bread. Roti flour is iron and iodine fortified hence we need curries to be done "medium rare" in minimum oil, best using non-stick utensils which are on display in most homes in the show case cabinet.

Adding a fruit item for lunch acts to achieve satiety in most folk. The undernourished school lunch parcel carries too many carbohydrates. ie roti and potato curry. Balancing the meal with some protein will go a long way in such cases.

Many schools have canteens which are poorly supervised and Home Economics teachers can assist in optimizing the meals served. We do not need to serve huge meals but small, nutritionally balanced ones. The catering contractor will not lose. There should be scope for the State to fund an enhancement program for the undernourished children in a school lunch program.

School management should ideally ban all sales of fizzy drinks, snacks and fat / carbohydrate fried in oils. In the USA and of recent in Australia these

items have been removed with good initial results. Vending machines selling Pepsi and Coke should be totally banned.

Growing Your Own Fruit and Vegetables.

The value of a family garden cannot be underscored. Children learning to work as a team exercise and see nature produce fruit and vegetables in the home and school environment is not a far fetched ideal even in an urban environment. Tastes are acquired and fruit may not taste so bad after all. All primary schools should be encouraged to teach children gardening, planting skills. The fruit and vegetables could form part of the school lunch program.

Exercise and Diets.

These two components are being mentioned only to be relegated to the backburner when we talk weight loss. Despite many claims of success we have no clear answers. However it is clear that exercise improves the quality of our lives. Regular exercise helps de-stress us, even if we do not lose weight we outlive the non exerciser. Retraining the "taste bud" may go the longer mile.

More Gene studies.

Genetic modification and trans-genetic transfer are concepts which have resulted in the changing quality of fruit and vegetables. Big and better potatoes and tomatoes were the initial pick which resulted in commercial frozen fries and tomato sauce in the manufacture and food processing of the Commercial food outlets in USA. Trans-national Companies have financially thrived owning the seed production, commercial farming and food processing and even packaging copy rights to agro-chemicals for the farmers.

Unfortunately the price of food has escalated despite all the processing technology. Now we are researching the possibility of genetic predisposition to obesity in humans. An area in the human brain to acquire ready satiety with neurotransmission is being contemplated.

Healing & Food

Dr Chief's original article on obesity crystallizes some of our clinical concepts. Her interests in Holistic medicine are of great interest and respected. Her contribution on obesity is welcome relief. Ayurveda and Traditional Chinese Medicine looked at nutrition as a medicinal aid.

The Vedic concept of vegetarianism was promoted to ease the caloric consumption associated with digestion. The non consumption of hot food like garlic and ginger was advised. These items supposedly heated up the basal drives of our physique. Consequentially more food energy was focused on higher thoughts and activities of the spirit and mind especially in times of illness.

Likewise in traditional Chinese medicine food was described as Yin (cool), Yang (hot) and neutral. Various food combinations results in early return of health and wellness.

Seasons greetings.

May there be peace in your hearts.

Neil Sharma.

Editor in Chief.

THE IMPACT OF TOTAL TERTIARY HEALTHCARE IN FIJI

The concept of the Apollo Pacific Hospital (APH) is to provide low cost, high powered tertiary healthcare, which is the gold standard worldwide, to the people of Fiji. Since it involves expensive technology and expert personnel to deliver this type of care, this is the reason why the present government healthcare system, which is free, cannot afford to deliver this to the people. Since the APH is a private healthcare system, the issue is how many people in Fiji will be able to afford this type of care. In this paper I will try to explore and discuss various options and mechanisms as to how APH could deliver this level of care to the entire nation and possibly to the other Pacific Island Nations.

When Dr. Karam Singh and I embarked on this vision and venture for Fiji some twenty-five years ago, our aim from the beginning was to provide affordable care to the entire nation. Therefore, many of our decisions and proposals which we have submitted to the government were geared to achieve this goal.

This project will only be possible to achieve its full potential and objectives if the Government of Fiji backs it 100%, catches the same vision that Karam and I have for our people and moves with urgency. Our experience so far has been that many people in the government who are playing the key roles over this project have no clue to what we are bringing to the shores of Fiji. Our experience so far has been very frustrating from the inability to move on and also from the questions we have to answer to various bureaucrats in various Ministries that one wonders if we both are insane to take on a project of this magnitude.

First, let me discuss some salient points:

1. Dr. Karam Singh and I embarked on this project out of compassion for our people who have no hope for tertiary healthcare in Fiji.

2. Both of us are very well established professionals in our respected countries of residence and do not have to sacrifice our current positions and lifestyles to take on this project for selfish gains.

3. This project was only revived by us at the earnest request of Mr. Mahendra Chaudhry, who saw the urgent need for this care in Fiji.

4. The Lautoka site was chosen because of its proximity to the present Lautoka Government Hospital (LGH). We envision that LGH could play a critical role in complementing the tertiary care to the poor people who would not afford admission to APH. I will discuss this more in detail later.

5. The cost of care has been our main concern and it is for that reason that we chose to partner

with the Apollo Health System which is the world leader in high powered, low cost tertiary healthcare provided globally.

6. Apollo Health System can design and build the hospital to completion for approximately US\$50 million whereas a very similar hospital of the same size is presently being built in Louisiana, USA by the Louisiana State University for US\$600 million.

7. Our goal has been to provide tertiary healthcare for at least 50% of the cost of similar care in NZ and Australia or less. In order to achieve this, we will need full support of the government to grant the pertinent tax incentives to keep the costs low. These have been spelt out in my previous papers.

8. The APH will have to generate enough revenue to pay all its expenses, including the salaries of the staff, in order to survive like any other business. The lower the costs of building and operations, the lower the costs of care to the people. Hence the government will have to back and facilitate all the incentives to keep the costs down.

9. The cost of tertiary healthcare is directly related to the costs of hiring the top consultants and technical help, the level of utilization or the occupancy rate, the costs of drugs and the debt structure of the project.

Let me now discuss how the APH can make an impact in the healthcare in Fiji and how we can have everyone access this level of care. When we talk of tertiary healthcare, we mean subspecialty healthcare such as cardiovascular, neurological, cancer and others. The general 'bread and butter' care is already being delivered by the government in various hospitals in the country.

10. Most of the business people and the professionals go to NZ and Australia for this level of healthcare. If the APH can provide the same or better level of care in Fiji at 50% of the costs of the above-mentioned countries, there will be tremendous savings not only in the hospital costs but also from travel and hotel expenses.

11. When we did the feasibility study a few years back, our information was that about 150,000 to 200,000 people have some type of private health insurance in Fiji. These people should be able to afford this level of care in Fiji.

12. The reason why we were very interested in FNPF to partner with us was the fact that they have 320,000 members and there was talk of some type of healthcare fund being initiated by FNPF. If this ever happens, then these people could also

*Dr. Michael S. Chandra
USA*

benefit from the onshore care at APH.

13. What then we do for the rest of the people who are poor and outside FNPF and private sector who do not have insurance or some type of coverage?

14. This is where the Lautoka Government Hospital (LGH) would play a major role. If the LGH is cleaned up and renovated with the help of Government of India etc, then poor people who cannot afford the cost of private hospitalization could go to LGH. All the specialists at APH could be asked to give some time on a weekly basis to LGH and hence the poor people can have access to the specialists. If a major operation such as cardiac, neurosurgery etc is needed, they could be done at the APH under some type of subsidized scheme worked out by the government with APH and the patient could go back to recuperate at LGH and still have access to the surgeon. We will have to safeguard any abuse by people who can afford this and want to get a free ride.

15. This system can be analogous to the many University Hospitals (UH) in USA and the Veterans Hospitals (VAH). Most of the VAH are adjacent to the UH and the staff of the UH give the tertiary care at the VAH. The APH would be analogous to UH and the LGH to the VAH.

16. Perhaps similar to what the FNPF wants to do for its membership in the health fund, the sugarcane farmers and the Native Land Trust Board could initiate similar programs for their members from the revenue they generate from sugar and the land rentals to the 'matangalis'. This could cover many people in the countryside and the villages. Apollo has done a similar program for farmers in India.

17. The Apollo consultants could also be arranged to make visits to the Colonial War Memorial Hospital (CWM) and Labasa Hospital to see patients periodically. This will have to be worked out with the government.

18. Since APH plans to have accreditation by the Joint Commission of Accreditation of Hospitals of America, this will introduce a benchmark of excellence of tertiary care in the region.

19. The government could workout a deal with APH to introduce this benchmark in their hospitals in Lautoka, Labasa and CWM. We could train their registrars and the personnel and also introduce the protocols of care. Over a period of time the overall level of care in Fiji will improve if we take that approach.

20. The government could annually set aside certain sums of money for the very poor and needy who need tertiary care and negotiate out with APH to deliver at a special rate. If the routine cost of care at the APH could be 50% of NZ and Australia and if the government could negotiate out a special rate for the poor and

needy in conjunction with the renovated LGH for recuperation, this then would be workable and a win win for everyone.

21. Similar types of programs could also be worked out for other island nations of the Pacific.

Therefore, in order to bring the best health-care at the cheapest cost, here are my suggestions for the government to consider:

1. Try to understand the magnitude of this project and the benefit it brings to the people of Fiji and the surrounding Pacific Island Countries.

2. In this paper I have not touched upon the impact it will have on the present tourism industry and also the global healthcare market from USA estimated to be between US\$40 to 60 billion by the year 2010.

3. Be proactive and facilitate quick resolution of pending items rather than be obstructive and delay and kill the project.

4. Grant all the tax incentives etc. as requested to reduce our cost of care which will be passed on to the people of Fiji.

5. Help secure funding for the project so that we can move ahead quickly.

6. Encourage FNPF to consider this project. From the correspondence that I have seen, they do not seem to understand what we are talking about from the questions that have been raised.

7. Recently, I have noted in the news from the PM that China has US\$600 million reserved for soft loan to the Pacific Countries for projects at low interest rate of 2% for up to 20 years. We would be very much interested in that loan if the government could vouch for the project. The total project with a 250 bed hospital and the schools of nursing and medical technology would cost between US\$50 to 60 million. This project fits the criterion since it brings tertiary subspecialty care not only to Fiji but to all the other Forum Countries. If we could get this funding from China at 2% interest, it certainly will cut down our costs of borrowing money and hence lower the cost of care to the people. The PM can send a very strong message to the neighbors NZ and Australia with the announcement of this project specially being financed by China.

3.1 INVITED REVIEW

OBESITY: GLYCEMIA, INSULINEMIA AND THRIFTY GENOTYPE AGGRAVATED BY TRANSFORMATION OF DIET IN THE FIJIANS

Abstract

Shifting and transformation of diet or nutrition transition may be inevitable. It has been experienced all over the world including Fiji and the other Pacific regional countries. In Fiji, the pattern and the structure of nutrition transition has run in parallel with the incidence and high prevalence of overweight, obesity and nutritionally-related chronic diseases. Modification of diet, especially deviation from a traditional food pattern has affected the nutritional composition of meals both in quality and quantity. This transition in turn has affected the health status of individuals. Changes in composition of diets affects the nutritional environment that feeds the genetic system. Significant deviation of the nutritional intake away from what is genetically desirable is likely to contribute to fat disposition, obesity and nutritionally-related chronic diseases. This perhaps may be in the form of dedisposition of thrifty genotype and insulinemia in majority of individuals. It may appear that the changing dietary habits of Western civilisation, coupled with reduced physical activity may have compromised the complex homeostatic mechanism and thus disturbed the homeostatic system resulting in fat disposition which ultimately lead to weight gain.

Obesity is now considered one of the major public health problems in the world. Its prevalence rates the world over, both in affluent and poor nations in all segments of population in young and old of both sexes, is increasing. The disease is sometimes regarded as "globesity" due its global epidemic trend. Like other developing countries with an increasing rate of urbanisation, Fiji has entered a phase of nutrition transition especially the change in food sources has contributed to the change in nutritional composition of meals. This leads to a gradual change in health status patterns; from a gradual increase in body weight to overweight, obesity and to prevalence of nutritionally related chronic diseases.

Strategies that may help reduce the development, incidence and prevalence of overweight and obesity in Fiji include the screening and diagnoses of liver dysfunction, syndrome x, glucose intolerance in order to develop some intervention programmes appropriate for such cases.

Glycemia and insulinemia

Glycemia is one of the most important

variables in maintaining homeostasis of the internal milieu of the human body. Blood glucose levels are regulated within a tight margin through the interplay of glucagon and insulin. The rise in the blood glucose after consumption of carbohydrate rich foods triggers the release of insulin. Excess intake of carbohydrates especially refined and high glycemic index foods encourage the rapid rise in blood glucose levels followed by a rapid release in insulin [1]. Any excess glucose in the blood above the body's immediate energy needs is stored in the form of glycogen; in the muscles and in the liver cells. However because of the limited storage capacity in liver and muscles, any further excess glucose is converted to triglyceride fat and is stored as body fat in adipose tissues.

Consequently, it is important to note that efficiency of glycogen storage and glucose release in and out from the liver to the blood stream depends much on the health status of liver cells. Less healthy liver cells results in liver dysfunction which directly affects the amount of glycogen required for storage. This thus contributes to erratic fluctuations of blood glucose. Furthermore, because insulin is regarded as a fat storing hormone, it may mean that excess insulin secretion will enhance fat storage and thus minimise fat release.

In Fiji, it may appear that people who consume high amounts of carbohydrate foods especially refined and high glycemic index foods tend to stimulates excessive amounts of the fat storing insulin. High levels of insulin is also thought to send signals to cells not to release any stored fat, thus makes the body difficult to use its own stored fat for energy [2]. It may therefore be concluded that liver dysfunction coupled with hyperglycemia and hyperinsulinemia exacerbate the mechanism of fat storage leading to gain in weight and obesity. Such conditions may have existed in majority of the Fijian people where people may not be aware of the existence of syndrome x, glucose intolerance and over-secretion of insulin in their body. Perhaps in this case, the Ministry of Health should set up appropriate screening techniques to identify such cases for further diagnosis, consultations and interventions.

Genetic predisposition of thrifty genotype

The postulation of the Thrifty Genotype theory suggests that metabolically thrifty genes

Dr Jimaima V Lako, USP,
Suva

"In Fiji, the pattern and the structure of nutrition transition has run in parallel with the incidence and high prevalence of overweight, obesity and nutritionally-related chronic diseases."

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“The diets of Fijians have changed dramatically compared to diets in the early 1800s prior to the arrival of missionaries. Foods consumed at the time were exclusively traditional.”

exist among certain populations, which predispose them to fat disposition and thus type-2 diabetes [3]. These genes are believed to permit more efficient food utilisation, fat deposition and rapid weight gain at times when food is in abundance, in preparation for an unpredictable famine period. This may be the conditions unknowingly experienced by the current generations of Fijians. The Fijians are thought to have survived the long sea voyage from South Africa before they settled in Fiji. Further exposure to inconsistent food supply during hunter-gatherer period may appear to predispose the Fijians to thrifty genotype [6, 7]. The characteristics of such genes include the release of high insulin levels or leptin (an appetite-regulating hormone released by fat cells) that allows the gene-bearer to better able to condition itself to unpredictable feast and famine periods that characterise the seasonality of foods in the traditional human lifestyle. The conditioning and programming of such genes to unpredictable situations seems to be an advantage in surviving famine periods. However, when an individual with these genes is exposed to modern world of constant, regular and abundant food supply, this genotype is a disadvantage, especially with a sedentary lifestyle and the daily consumption of more than three high-calorie meals [4, 5]. People with a thrifty genotype consuming high calorie foods may constantly experience high levels of insulin in the blood (hyper-insulinemia) which in the long term may lead to predominantly upper body obe-

sity, insulin resistance, and type 2 diabetes through pancreatic β -cells de-compensation. These tend to trigger other manifestations of cardiovascular diseases (CVD) risk factors such as dyslipidemia and hypertension [4]. Like hyperglycemia and hyperinsulinemia, such characteristics appear to be common in majority of the Fijian population where people may also be predisposed to syndrome x, glucose intolerance and insulin resistance. Similarly, the Ministry of Health should set up appropriate screening techniques to identify such cases for further consultations and interventions.

Traditional Food Patterns

Diet is one of the major factors that affect health; it is possible that an optimal diet can change health patterns. This may be translated as nutrition transition affecting nutritional status.

The diets of Fijians have changed dramatically compared to diets in the early 1800s prior to the arrival of missionaries. Foods consumed at the time were exclusively traditional. There was no mention of cassava as a staple root crop. Although foods were seasonal, enough sources of foods were available all year round to form a continuous supply of nutrients. Despite abundance of fresh foods all year round, there were only two meals in a day: breakfast and dinner. Fresh fruits and nuts were eaten as snacks [6, 8]. When foods were available in plentiful supply, surpluses would be preserved for later use and as a guarantee against scarcity. Such food patterns may show that people

Table 1: Comparison of nutritional values in various traditional diets

| Nutrient or food composition | Hunter-gather | Traditional low-fat (Onish diet) | Traditional Mediterranean | Traditional Fijian diet | Contemporary Fijian diet |
|------------------------------|------------------|----------------------------------|---------------------------|-------------------------|--------------------------|
| Protein (%) | High (19-35) | Low (<15) | Moderate (16-23) | Low (12) | Moderate (16) |
| Carbohydrate (%) | Moderate (22-40) | High (80) | Moderate (50) | High (68) | Moderate (52) |
| Total fat (%) | Moderate (28-47) | Low (<10) | Moderate (30) | Moderate (20) | Moderate (33) |
| Saturated fat | Moderate | Low | Low | Low | High |
| Monounsaturated fat | High | Low | High | High | Moderate |
| Polyunsaturated fat | Moderate | Low | Moderate | Moderate | Low |
| Omega-3-fat | High | Low | High | High | Low |
| Total fiber | High | High | High | High | Low |
| Fruits and vegetables | High | High | High | High | Low |
| Nuts and seeds | Moderate | Low | Moderate | Moderate | Low |
| Salt | Low | Low | Moderate | Low | High |
| Refined sugars | Low | Low | Low | Moderate | High |
| Glycemic load | Low | High | Low | Moderate | High |

Sources: Lako, 1998; Lako & Nguyen, 2001; O'Keefe & Cordain, 2004.

moderated what, where, when and how they ate. With such a practise, it may appear that predisposition of the thrifty genotype was masked by unintentional control of the what, where, when and what they ate. This may be mainly contributed by the types of foods available, environmental and lifestyle demands at the time which highlights the importance of traditional and native diets.

Studies have shown that the traditional Hawaiian diet, which is very similar to the Fijian diet, has therapeutic properties. Shintani [9] studied the traditional Hawaiian diet of fresh fish, taro, sweet potatoes, yams, breadfruit, seaweed, bananas, taro leaves, sweet potato leaves and occasionally chicken, and several other native green vegetables, many of which are shared and consumed by the Fijian people. Shintani demonstrated that there were many beneficial effects when the Hawaiian diet was eaten exclusively for 21 days. There was a great reduction in serum glucose, decreased cholesterol, normalised blood pressure and increased weight loss in obese people [9, 10]. A further comparison of the compositions and nature of Fijian diets to other typical native or traditional diets are shown in Table 1. The comparison shows that traditional Fijian diet resembles the hunter-gatherer diet. They both show high intakes of fruits and vegetables, high fibre, low protein and moderate fat. On the other hand, the contemporary Fijian diet shows a dramatic transition with a low intake of fruits and vegetables [11], low fibre, high sugar and high glycemic load intake.

A true traditional Fijian diet (shown in Table 1) existed before colonisation to Britain. Personal communication with Lucas, Gatty and Parkinson revealed that the traditional Fijian diet for highland people was mostly vegetable-based with fewer spices. This diet has now been modified to suit the preference of today.

Similarly, the well known traditional Mediterranean diet (Table 1), characterised by a moderate ethanol consumption, a high intake of cereals, fruits, vegetables, legumes and monounsaturated fats, coupled with a low intake of meat, milk and dairy products may also be therapeutic. The diet score associated with the traditional Mediterranean diet showed a significant reduction in overall mortality, a positive association in plasma carotene, and a negative relation between cholesterol concentration and overall mortality [12, 13]. Other traditional diets have also shown inverse relationships to cardiovascular risk factors, obesity, and diabetes [14, 15].

The above studies and others have shown that the shift away from traditional foods is characterised by an increase in absolute energy intake and an increase in the relative contributions of carbohydrates (particularly sucrose), fat and saturated fat. These have

significant negative health impacts on individuals, particularly fat deposition leading to overweight and obesity [15].

Further environmental and behavioural changes that relate to dietary shift are affected by changes in the food system. Traditional food systems [14] have been deteriorated due to globalisation of the human diet. This in turn leads to the disappearance and loss of traditional food knowledge, including related food activities, preparation, taste and preference. There is a strong possibility that traditional food systems, once they have fallen into disuse, will never revive, and that traditional food knowledge, once lost, will be lost forever.

Furthermore, traditional communities need to revive some or all of their traditional diets which are glycemically low, phytochemically and antioxidant rich and nutrient dense. Changes in composition of diets affects the nutritional environment that feeds the genetic system. Significant deviation of the nutritional intake away from what is genetically desirable especially thrifty genotype is likely to contribute to fat disposition, overweight, obesity and the development of other nutritionally-related chronic diseases [16]. As both Zimmet [5] and Neel [17] have pointed out, the changing dietary habits of Western civilisation, coupled with reduced physical activity, has compromised the complex homeostatic mechanism and thus disturbed the homeostatic system.

Transformation and Shifting the Structure of Diet and Food Culture

Transformation in diets and other lifestyles associated with industrialisation, urbanisation, economic growth and market globalisation have significant impact on the health and nutritional status of people [18]. As dietary patterns change, nutrition and bioactive compositions of diets also change.

It appears that the nutrition transition in Fiji follows a similar pattern to three major industrialised countries: America, Britain and Japan. It has been shown that these three nations have similar characteristics. There has been an overall increase in fat intake, not only from meat and dairy products, but also from an increased use of vegetable fats and oils, margarine and shortening. A simultaneous increase in consumption of simple carbohydrates and a decrease in consumption of dietary fibre has also been observed [19]. The Western pattern of diet and nutrition has become entrenched around the world, including the Pacific and Fiji.

Studies have reported similar trends in other traditional, native or indigenous societies all over the world, including Indonesia [20], China [21, 22], Malaysia [23], Papua New Guinea, Western and Northern Canada, Northern Ghana and British Columbia [14, 15]. Although there are different magnitudes

“The comparison shows that traditional Fijian diet resembles the hunter-gatherer diet. They both show high intakes of fruits and vegetables, high fibre, low protein and moderate fat. On the other hand, the contemporary Fijian diet shows a dramatic transition with a low intake of fruits and vegetables [11], low fibre, high sugar and high glycemic load intake.”

“There has been an overall increase in fat intake, not only from meat and dairy products, but also from an increased use of vegetable fats and oils, margarine and shortening. A simultaneous increase in consumption of simple carbohydrates and a decrease in consumption of dietary fibre has also been observed.”

“Breakfast meals have now contained more cereal-based foods, white flour, white bread, sugar and butter. It appears that the common breakfast among Fijians is white bread taken with sweetened tea.”

in the patterns of dietary shift and nutrition transition between both developed and developing nations, they both ultimately result in a negative health impact.

In Fiji, it appears that the major events including British colonisation, the Indian indentured labourers and hurricane relief foods initiate the gradual introduction of foreign foods which contributed to dietary changes. Immigrants who visited Fiji during such events successfully brought their own foods, especially white flour and other related food products such as biscuits, cooking oil, butter, canned fish, beef, mutton and rice. These foods later became popular in the 1900s when the indigenous population got accustomed to the taste [8, 24, 25]. Although such foods may add variety to diet, over-consumption provided a negative impact on health. It seems that significant deviation of the nutritional intake away from what is genetically desirable is likely to contribute to fat disposition [16].

Major changes in the Fijian diet include the transformation of the breakfast meal, high consumption of cassava and noodles. These transitions were observed in the 1953 [26], 1954 [25], 1963 [27], 1980 [25], 1981 [28], 1982 [29], 1993 [30], 1994 [31], 1996 [32, 33], 2001 [34]. Breakfast meals have now contained more cereal-based foods, white flour, white bread, sugar and butter. It appears that the common breakfast among Fijians is white bread taken with sweetened tea [35]. Bread especially the white long-loaf may be a good source of energy per se, however because it virtually has no fibre and has a high glycemic index, the Fijian people regard it as light food. It is thus either consumed in great quantity, or eaten together with root or tree staples. Generally, people do not normally achieve adequate satiety with bread and noodles, and thus a much greater amount is eaten in a meal. Cassava, often referred to as “poor mans’ crop” is more preferred and has displaced other nutritious roots crops due to the ease in cultivation and affordability [8]. A survey by Rush and colleagues in 1999 [36] confirmed the top five frequently consumed foods were cassava, flour, breadfruit, fish and coconut cream. Cassava, especially the common white variety similar to white bread has high glycemic index and nutritionally poor compared to other root staples such as kumala, taro and plantain.

Further changes in the Fijian diet include the change in the sources of fat. In the past, the only source of fat was coconut cream [33]. However today, other sources include margarine, butter, vegetable oils, whole cream milk, fatty meat are getting more popular, commonly and regularly used and consumed [35]. Consuming various sources of fat increases calorie intake and satiety and thus decreases the consumption of more nu-

tritious foods. The popularity of white bread for breakfast accompanies the frequent use of margarine, butter and/or jam, taken with sweetened hot tea. This food habit is spreading rapidly even in remote rural areas where biscuits and other flour-based products such as deep-fried homemade pancakes, babakau are prepared and consumed excessively [32, 35]. It appears that the sale and advertising of low cost cooking fats and oils and availability of fast foods aggravate the use and consumption of fats and oils in Fiji.

Further observations of Fijian diet showed that dinner is the main meal of the day in which most families seem to have a well balanced diet, however quantitatively consumed excessively. Perhaps people need to reduce the wrong quantity of foods consumed for dinner especially carbohydrates and fats as positive energy balance may arise due to inactivity in the night.

Additional changes include the low intake of phytochemicals and antioxidants among Fijians [32, 35, 38]. This is due to the low consumption of fruit and vegetables. Fruit and vegetables are rich sources of phytochemicals and antioxidants. Antioxidants such as (-carotene and vitamin E had been observed to be deficient among adult women in Fiji accompanied by a low intake of fibre and fruits [32, 35]. Low intake of fruits may be in line in keeping with fruits as an insignificant role in the diet of the Fijian people [8, 11]. The intake of vegetables was highlighted by Rush and colleagues [36] that showed that taro leaves and edible hibiscus ranked eight and eleven and the daily intake was only 50 g and 26 g respectively. Low intake of fruits and vegetables has been in parallel with the high prevalence of overweight and obesity with positive glycosuria [32, 35].

It seems that very often people of the developing countries spend more money on foods rich in fats and sugars. This inadvertently displaces traditional diets that are rich in fibre and grains [18, 20, 23, 37]. It seems that the global dominance of the Western diet rich in fat, sugar and refined carbohydrates is at the root of the epidemic of obesity leading to nutrition-related diseases, which have spread even to remote and poor areas of the Pacific region.

Since dietary patterns with low intakes of phytochemicals and antioxidants as well as low glycemic index lead to major health problems, it would be advisable for many Fijians to change their dietary behaviour. Collaboration between health professionals, academic researchers, scientists, agriculturalists and the community should be strengthened to address such problems.

Conclusion

Shifting and transformation of diets in both the quantity and quality of meals has been

widely recognised as a contributing causal factor behind the development of overweight and obesity in both rich and poor countries. The pace and magnitude of such changes is accelerating, especially in the low-income and middle-income countries and Fiji is no exception.

Transitional diets have a favourable or unfavourable outcome on the life of an individual. A number of studies show that modernisation of diet has taken place in the South Pacific where a progressive change has taken place away from traditional foods towards a greater reliance on added preservatives of high sugar and salt, fatty foods, refined and high glycemic index carbohydrates.

Strategies that may help reduce the development, incidence and prevalence of overweight and obesity in Fiji may include the setting up of screening and diagnoses techniques of liver dysfunction, syndrome x, glucose intolerance and the likes. Data gathered from the screening may help put in place intervention programmes appropriate for such cases. For such programmes to be successful, perhaps strong coordination and collaboration between major stakeholders need to take place especially between nutrition, agricultural, sports, government ministries (such as Health, Agriculture and Education) and other health related institutions such as the medical, academic, food industry, fitness and other agricultural and health related institutions.

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3.2 INVITED REVIEW

CHRONIC ANGER: THE SILENT SLAYER

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The spectrum of immanent human feelings—from mild irritation to outright rage-anger, like all emotions, is a double edged sword. At appropriate magnitude, anger is protective as well as motivational. The potentiality of wrath prevents others from forcibly removing personal belongings. Anger also motivates: the resentment of a long sufferer of domestic violence can reach a boiling point that enables the affected to break free from love-hate bondage, for instance. The ire, moreover, gives strength to persevere as in the case of building life after devastating events.

At the same time, the consequences of an outrage can be very destructive. Assaults, rapes, riots, suicides, and homicides are some of the much well publicized havoc that results from acute anger. Indeed the possibilities of self-harm as well as other's harm are endless. Property is not spared either.

Although the disastrous aftermath of acute anger is well promulgated, the adversarial impact of chronic hostility on health is not well advertised, especially by the medical community. Nevertheless, it is now explicitly evident from extensive research that long-standing antagonism increases proneness to physical, emotional, mental, spiritual, and social ill-health. Longstanding aggressiveness is indeed a sterling silent slayer.

An interesting study, that spanned 25 years and involved male doctors first interviewed as medical students, revealed that those "chronically angry and resentful were five times more likely than non-hostile men to get heart disease" (Ewart & Kolodner, 1994:596). The increased risk was independent of the conventional risk factors such as smoking and improper eating habits. J. Williams and colleagues (2000) replicated this finding in a large scale study that included female, African-Americans, as well as whites.

Studies to link emotions and behaviour to illness go back to 1950s when two cardiologists, Meyer Friedman and Ray Rosenman, noted that their patients exhibited extreme nervousness while waiting to be seen. These cardiac patients also tended to over-emphasise time, work, and achievement. The specialists constructed a cardiac proneness action-emotion-behaviour model that they called Type A personality (Friedman & Rosenman, 1974).

The eminent heart-specialists went on to do a series of research-known as Western Collaborative Studies-that demonstrated that "Type A behaviour preceded development of coronary artery disease in 72 to 85 percent of the 3411 men tested" (Girdano et al., 2001:92). Further studies based on Type A behaviour pattern followed. Cooper (1995),

for example, found that those "always-on-the-go" individuals had hyperreactive sympathetic nervous systems. It was postulated that chronic sympathetic activation leading to increased serum cholesterol, blood pressure, and cardiac output, together with decreased vascular flexibility resulted in accelerated atherosclerosis (Williams & Williams, 1994).

However, Krantz and Manuck (1984) uncovered that hyper-sensitive response to stress, by itself, is not the sole determinant of cardiovascular hazard: many Type A go-getters seem to cope better than their more relaxed counterparts. Simply put, enthusiasm does no harm. This led to search for the factor responsible for the increased risk. The clarification of the concerned component of Type A behaviour associated with the increased risk emerged from three large meta-analytic reviews by Marshall et al. (1994), Burg (1995), and Miller et al. (1996). These reviews concluded that it is the long-standing cynical or antagonistic hostility that is characterised by mistrustfulness and argumentativeness that increases the risk of ill-health. The involvement is sustained activation-elevated baseline with frequent flurry of arousals-of neuro-humoral systems that are distinctive of anger response.

Thus there is a direct connection between prolonged aggression and early heart disease: the more hostile the person, the higher the risk. On average, rancour raises the risk factor five times above normal rate. Furthermore, another study reported on CenterSite (2005) shows that hostility ratings amongst male subjects predicted cardiac disease more accurately than conventional risk factors such as cigarette smoking, cholesterol, and obesity.

At the same time, investigations have exposed the influence of hostility beyond the heart. Suinn (2001), for example, revealed that chronic anger increases proneness to impairments of the immune system and hypertension in addition to the raised coronary risk. Other researchers have linked rancour to cerebrovascular accidents, peptic ulcer diseases, chronic headaches, and sexual difficulties (Girdano et al, 2001). In an earlier longitudinal study of mid-life females, Adams (1994) found that longstanding hostility affected their health in general.

"My life is rapidly being destroyed. I have been diagnosed to have depression-Yes, I do get very sad at times but my main problem seems to be anger. I am bitter all the time and worse I go berserk several times a week.

Going home is like going into a war zone. I feel like destroying everything. I always get so upset with my wife and children that I end up beating them for the slightest thing. I hate

doing this but I cannot help it-I am not able to control my temper. All avoid me. Anger makes my life hell (Pre-therapy comments of client TN, 2006).

Besides increasing the risk of physical ailments, anger impinges upon all other aspects of the individual. It grieves mental, emotional, and spiritual well-being as well as perturbs relationships. Hostile persons, for instance, are more disposed to suffer from psychological problems such as stress, anxiety, depression, and mental breakdowns (CenterSite, 2005). They are also more tempted to engage in negative behaviors of drinking, eating, and smoking in excess. Genuine spirituality is almost impossible for these people.

In addition, splenetic persons are less likely to have supportive relationships as they tend to have fewer friends and have less involvement in intimate personal relationship. In general, others do their best to avoid the irates: those who have to interact with them are more guarded and less relaxed. The cynism and mistrustfulness of the hot-fused individuals do not allow them to utilize the few social support that present to them. These deficiencies of supportive relationships have further detrimental effect on the enraged's health as research consistently show that supportive relationships are necessary for good health (Girdano et al., 2001).

The belligerents are also more inclined to social problems that worsen their ill-health. For instance, they can easily get involved in verbal as well as physical violence. Assaults, rapes, riots, resistance to arrests, and even homicide may eventuate. These, of course, lead to arrests and increase the likelihood of court cases-and even imprisonment-that lead to added difficulties such as financial woes, job losses, further stress, more anger, and mounting misery.

The suffering is not confined to the affected. All the affiliated persons-the spouse, children, relatives, co-workers, and significant others-also get stricken as well. Above all, anger not only traumatizes everyone concerned but also robs them of their birth-right entitlement to happiness, peacefulness, and wellness.

Indeed, deep-rooted resentment extirpates not just one but all; not just once but repeatedly. Chronic anger slays silently because the health providers are not heeding its full impact. However, evidence has been availed such that the effect is beyond reasonable doubt, and it is time chronic anger and its destructive consequences can no longer be disregarded.

Thus aggressiveness causes a lot of stress. In turn the added tensions lead to many problems that lower the anger threshold (CenterSite, 2005) and as a result make the affected even bitter. The resultant vicious cycle becomes extremely harmful to health.

It was therefore no surprise when AC, a 42 year old bad-tempered hypertensive who also had longstanding headaches and sexual problems, developed a stroke during one of her tantrums.

Fortunately anger and its detrimental effects can be overcome. Despite the plural etiologies-and the fact that some elements are inherited-anger is mostly a learned phenomenon. This means that the hostility can be unlearned and non-aggressiveness assertiveness relearned. The idea is not to eliminate healthy anger that is necessary for protection and motivation but to regulate the toxic, antagonistic resentment that is sustained.

There are several anger management programs-for example, Deffenbacher et al., (1994) and (1995)-that can be tailored to any client. Whatever the chosen approach, the key to successful anger management is acknowledgement the fact that hostility is silently slaying the afflicted. Development of this insight is vital because many exasperated will not consider their anger as a problem: many enraged seethe with outrage but not feel angry at all! Once understanding and acceptance have been achieved, and the client has been convinced to deal with the problem, five areas need to be addressed.

General stress management needs to be considered first. Stress is an integral part of anger problem, and tension reduction techniques such as progressive relaxation training, controlled breathing, meditation, sports, exercises, prayerfulness, and the like (Girdano et al.,) would help the client a great deal.

Specific anger management skills, representing the second aspect, involves helping the client learn more about recognizing signs, triggers, stages, causes, and consequences of anger; as well being more analytic as well as developing ways to overcome the negatives (McKay & Rogers, 2000). The general practitioner can teach simple skills such as having an anger plan, incident diary, trigger activators, reframers, re-directors; and such techniques as counting to ten before acting, taking a hot-cold shower, talking to a sympathizer, and the like.

Learning communication and life skills form the basis of the third aspect of anger management. The helper needs to teach the client assertive skills and negotiating techniques. Furthermore, the chronically bitter person needs to learn to appreciate other's feelings, points of view, and rights as well.

The fourth facet of anger management involves sorting out the causative and contextual factors. Family, health, developmental, educational, economic, work, relationship, victimization, and other situational concerns need to be addressed. In addition, the underlying causative factors such as inferiority complex, psychiatric disorders, medical ailments,

“The idea is not to eliminate healthy anger that is necessary for protection and motivation but to regulate the toxic, antagonistic resentment that is sustained.”

“Specific anger management skills, representing the second aspect, involves helping the client learn more about recognizing signs, triggers, stages, causes, and consequences of anger; as well being more analytic as well as developing ways to overcome the negatives.”

“Learning communication and life skills form the basis of the third aspect of anger management.”

“To sum, although chronic anger is linked to physical, psychological, spiritual, and social ill-health, its destructive effects have not been well publicized by the medical community.”

hormonal imbalances, Type A personality, personal problems, and the like need to be treated.

Finally, the client’s unconscious early childhood conflicts and traumatic experiences need to be probed. This involves application of psychodynamic therapy and may require specialist intervention (Wade & Tavis, 2005). Nevertheless, the GP can offer a lot of help to any hostile person to cope and lead a fulfilling long life.

To sum, although chronic anger is linked to physical, psychological, spiritual, and social ill-health, its destructive effects have not been well publicized by the medical community. Accordingly, longstanding hostility is silently slaying, not just the affected but those affiliated as well. The thoroughly researched connection between sustained aggression and early cardiovascular disease-averaging a five fold increase-as well as proneness to other illnesses, together with the drastic impact on the community as a whole, can no longer be disregarded.

Fortunately the negative effects of chronic anger can be prevented. This can be easily initiated by any GP, whose major task is to help the client develop insight of the destructiveness of such aggression. Once this has been attained, any of the several existing anger management programs can be tailored to suit the individual patient. Emphasis should be placed on five main aspects: general stress management, specific anger control techniques, assertive-negotiative communicative

skills, causative-contextual issues, and past traumatic experiences. Slaying this silent slayer will not only help the client but the family and community as well.

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3.2 INVITED REVIEW

CHRONIC ILLNESS

Millions of people, young and old are limited in their daily functioning because of a chronic mental health or physical health condition. For the vast majority of these individuals, family is their first line of healthcare. Whether the member is a child with cystic fibrosis or an adolescent with diabetes, or a parent with multiple sclerosis or a grandparent with Alzheimer's disease, it is the family, first and foremost, that cares for an ill loved one.

One member's chronic illness influences the lives of everyone in the family. Roles and routines change. It may seem as if the medical professionals that care for the ill family member become part of the family. The demands of care giving must be negotiated. Family members' emotions may be on a continuous roller-coaster ride. On the other hand, families may come together and grow closer. Their lives may take on a new meaning. They may find rewards they had not expected on their journey through illness. The only certain thing is that chronic illness is a family experience, one that is shared by all.

How can chronic illness affect the family?

There are several ways that chronic illness can influence family life:

Daily routines may change because the limitations of the ill member and the demands of treatment may require that others be more available.

Families may need to share care-giving responsibilities; this helps all members feel they are contributing to a loved one's welfare and it also protects any single member from caregiver fatigue.

Family members may experience strong emotions, such as guilt, anger, sadness, fear, anxiety and depressed mood. These are normal reactions to stress. It is useful to talk about emotions within the family.

The ill member may need to find ways to be as independent as possible, given the limitations that the illness causes.

Despite the demands of the illness, families may need to work hard to maintain a sense of "normal" life. This can benefit the ill member, as well; it may help him or her integrate into family life more and reduce the ill member's sense of guilt regarding the demands the illness places on the family as a whole.

When Should The Family Seek Help?

At anytime during the life of a chronic illness, family members or the family as a whole may need support from a trained professional, such as a Family Therapist.

Signs to watch for include:

Difficulty making the transition from the de-

mands of one phase of an illness to another.

For example, family members may remain overprotective of the ill member long past the crisis phase. The ill member may feel he or she is being overly controlled and may rebel by not complying with the treatment or medication, or becoming angry with family.

Evidence of caregiver burnout.

Oftentimes, care giving falls to a female member of the family who may become exhausted by the 24 hour per day demands of the illness. The primary caregiver may be hesitant to ask for help, feeling that it is her responsibility. But she may also show signs that may be a call for help: sustained exhaustion, shortness of temper, depressed mood, loss of interest in daily activities, and changes in sleep or eating. These may indicate that the caregiver needs more support and the family needs to become involved in care giving.

Stress or conflict among other members of the family.

Well siblings may experience problems in school. An adolescent may act out when a parent is ill. A couple may be in conflict when a child or parent is suffering. Family members may develop physical systems that are similar to those of the ill family member.

Changes in the ill family member.

These changes may be related to illness or personality changes in the ill member. A sudden decline in the health status of the ill member may send shock waves through the family. The ill member may also experience periods of depression, even thoughts of suicide, which are common with persistent illness.

In any of these circumstances, the family's primary care provider can act as a resource for referring the family to a family therapist who is experienced with illness and collaboration with medical professionals.

What Kinds Of Interventions Are Commonly Used?

Families seeking help can expect a variety of useful interventions:

Family Therapy

It is valuable for the whole family, including the ill member, to meet with a qualified Family Therapist. During sessions, the therapist can help the family discuss how they are dealing with the illness, make decisions together, and learn how to utilize their own internal strengths and resources to address interpersonal problems. Family therapy sessions may also include medical professionals who are involved with the ill member's treatment. This provides an opportunity for clarification of

Sunila Karan, Nadi

treatment and other issues, such as reasonable expectations for the future functioning of the ill member.

Multi-family Group Psychotherapy

Families can benefit from meeting with other families who are also dealing with chronic illness. These family group meetings are usually time limited (8-12 weeks) and include an educational component as well as discussion and problem solving.

Individual Assessment and Treatment.

Some family members may be experiencing systems of depression or anxiety that need to be addressed through individual assessment, appropriate medication, and individual therapy in conjunction with family therapy.

Support and Psychotherapy Groups.

Many organizations offer support groups that focus on a specific illness. These groups are a valuable addition to family and other forms of therapy. For persons needing more support, group psychotherapy is very helpful.

Some Questions;

1. Which is more effective in treating depression or anxiety, anti-depressants or therapy?

In most cases, a combination of the two will be most effective. Therapists and psychologists use talk therapy, as they are not permitted to prescribe medication. If you have severe depression, you may need some medication before you will benefit from counseling or therapy. Your GP or psychiatrist can prescribe suitable medication. Some therapists start off with a few sessions with the client to assess their level of anxiety or depression using a questionnaire. If the questionnaire indicates that the person is severely depressed, or seems unable to carry out certain tasks, they usually refer them to a psychiatrist. When a person is immobilized by their depression, talk therapy has little benefit. Once the medication starts working, talk therapy can be used again.

2. Can extreme sadness over the death of a loved one lead to depression?

Yes, depression can be caused by a traumatic event. While normal grief is not an illness and does not require medication, grief can deteriorate into depression that responds well to medication. We need to learn to distinguish between normal grief and a depression. Some practitioners believe in prescribing medication for normal grief. This can provide temporary relief but it can also dull the reaction and stop a person from experiencing the normal stages of grief. To numb the mind with medication can be counter-productive. However, if the person does become severely depressed, medication may be necessary.

3. What are the physical manifestations of grief?

We may experience changes in our sleep patterns, lose our appetite, burst into tears and not be able to control our emotions. Our memory and concentration may also deteriorate. We may also feel lethargic and lack motivation for our usual interests and activity. We may feel anxious, uncertain and confused.

4. Is our grief different when it has been a suicide?

Suicide leaves a painful legacy to survivors. Families of suicide victims often feel guilty, asking themselves if there was something they could have done to prevent the tragedy. Grief counseling may be even more necessary when there has been a suicide.

"You can't always choose what happens to you, but you can always choose your response. Having that choice empowers you."

*Sunila Karan
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NEXT ISSUE:

The Corporatisation of General Practice

Vol 16, No 1, March 2008.

3.4 INVITED REVIEW

A GENERAL PRACTICE IN YEAR 2020 - A VISION

Mohini Goverdhan, Suva

A multidisciplinary group practice, located in a residential suburban community. The Practice consists of three GPs, a physician, surgeon, dermatologist, pediatrician and O & G specialist, an ultrasound room, and a pathologist and mini lab to run some basic tests.

Morbidity patterns in 2020

With greater social and economical inequality, the morbidity pattern has shifted towards more chronic illnesses. There are more lifestyle diseases, such as obesity, hypertension, cardiovascular diseases, diabetes and its complications, peptic ulcer diseases, substance abuse, psychiatric disorders, and cancers.

Due to rise in poverty; poor hygiene and sanitation is prevalent, thus keeping infectious diseases such as typhoid, scabies, leptospirosis, tagging behind the chronic diseases. Sexually transmitted diseases have also 'flourished'.

Advancement of science & technology

By the year 2020, although poverty and social disintegration have progressed along one arm of time, science and technology have also progressed, along the other arm.

Information technology has become totally integrated into all small to large business operations, villages and homes. The multidisciplinary clinic is completely computerized, with a centralized patient data system, based on biometric identification. When patient registers at the reception, his/her demographic profile and biometric identification is fed into the data base. There is an electronic device that records height, weight, BMI, blood pressure, pulse rate and respiratory rate of all patients going through the system. Another gadget scans the thumb of patient and records basal sugar, cholesterol and triglyceride levels. The patient is then given an RFID (Radio Frequency identification) card that carries all these information. This information is electronically transmitted to the computer in the doctor's room, who once ready to see the patient indicates on the system to send patient in. All this process takes a maximum of 2 minutes. The patient is ushered into the doctor's room by the receptionist. There is a voice recognizing system (VRS) that decodes patient-doctor interaction to text on the screen. A computerized microscope is also available to take any photographs of any patient conditions and records via USB into the computer. At the end of consultation, the doctor types medications on a computerized prescription, which displays detailed information about the drug on the screen. Before patient leaves the clinic, his RFID gets updated with the further

information from consultation or any investigations done. When this patient comes in for next visit, as soon as he/she enters the clinic reception, all this information gets picked up by the radio frequency and is displayed on the computer screen.

There are also facilities for video conferencing, should there be a need.

The investigative facilities available are an electronic ultrasound machine, with vaginal probe, ECG, blood tests for FBC and biochemistry. If there will be need for any further investigations, patients will be referred to the appropriate centers.

There is a common website for all GPs and also for other specialists, to share ideas, or discuss any case.

There is in place a direct electronic link to all the referral centers. Patients referred to the specialist within the same premise or to another referral center, or for hospitalization, have their details electronically transmitted into their system. Likewise, we have access to their system to follow up on that patient.

There is a centralized data base with back end data base processing located at Ministry of Health. All hospitals, and medical/general practices, are able to connect to this data base via intranet. With more advanced and economical devices, population screening has become super efficient. The data from screening is fed into the system via extranet for everyone's reference and to alert the ministry of problem areas in our community.

Any outbreak of diseases or any notifiable diseases encountered are entered into the system.

In liaison with the Ministry of Health the general practice carries out reach health promotion clinics within the community.

The general practice has an affiliation with the social welfare and other such organizations; and bring to their attention those in need of the support of such organizations.

The private hospitals and the main government hospital are the main referral centres. A two way feedback system with referral centers, keeps the practice updated on the management of these patients; which is of great importance for follow ups in maintaining a continuity of care. In the past most of referred patients were lost into the referral systems.

Role as educator & researcher

A fully computerized patient data system, enables the practice to carry out internal audits. It has also become relatively easy to study and establish disease patterns within the community. This data is being used to implement further research at a national level,

in collaboration with other GP practices, the Medical school and Ministry of Health. For this purpose funding is sought from the government, other organizations such as WHO, international grants, and from local business companies. The proper knowledge of the disease patterns and prevalence would enable our health infrastructure to be developed in such a way as to tackle these problems in the most efficient way with the limited resources. This would also enable the health care professionals to better study the evidence of our treatment modalities, and thus make practical applications to the local community.

With the changing trends of disease and illnesses, the medical education would need to keep abreast with such training so as to produce not only competent but also capable doctors, who can meet up with the health demands of current and future society.

The general practice participates in the training of under and postgraduate medical students, who are attached to the clinic on a rotational basis. This kind of especially undergraduate training helps the medical students understand and appreciate the different types of challenges encountered in a general practice clinic, the unique specialty of the general practice, the importance of general practice with the key role of preventive care, which in the long run will help to ease the burden on the economy, and promote socio-economic wellbeing. This may even give students incentives to take up further studies in the much needed field of general practice at postgraduate level.

In a primary care set up, each individual patient, has individualized problems, which needs to be addressed with sensitivity, in the light of his/her psycho-socio-semiotic context.

This art can not be learnt through text books or lectures. According to John Balla, "the paradigm changes to an interactive model where communication becomes an integral part of clinical practice and medical actions are evaluated in relation to societal expectations"ⁱ. Furthermore as Kristi Malterud describes the art of medicine, where "practitioners apply a broad range of experiential knowledge and strategies that are hardly mentioned in the text books"ⁱⁱ. Such connoisseurship with the GPs will broaden the students' spectrum of knowledge and definitely promise better doctors, embracing holistic care from day one of practice.

Conclusion

Nothing is impossible. Despite poverty, and limited resources, if government and private sector join hands in preventive care, and make it accessible to all, then quality of life will improve. Ongoing awareness and education, can tackle issues of chronic illnesses and psycho-social stresses.

The role of the discipline of general practice has been recognized in optimizing health. There definitely is the need for our health system to move towards primary-care.

¹ Balla, John, Learning for practice: a model for clinical education. In Prof Stumberg, Leon Piterman, editor. *The Principles of General Practice MFM2000: Readings*, Melbourne, Monash University, 2007. P 293.

¹ Malterud, Kristi, The art and science of clinical knowledge: evidence beyond measures and numbers. In Prof Stumberg, Leon Piterman, editor. *The Principles of General Practice MFM2000: Readings*, Melbourne, Monash University, 2007. P 218

RESEARCH ARTICLE

OBESITY IS A CHRONIC MULTI-SYSTEM DISORDER

OBESITY

Obesity is growing fast into a world-wide pandemic and it needs urgent attention if its potential morbidity, mortality and economic tolls are to be avoided 1. In Australia, the number of obese individuals has doubled in the last tens years leading to increases in the risk to cancer, heart disease, and diabetes 2. In the United States, 64% of the adult population and 13% of the children are now classified as overweight or obese 3. Obesity is a chronic multi-system disorder.

Classifications and definitions of Obesity 1

The most widely accepted is the World Health Organisation (WHO) criteria based on Body Mass Index (BMI). For adults:

* Grade 1: overweight is a BMI of 25-29.9 kg/m²

* Grade 2: obesity is a BMI of 30-39.9 kg/m².

* Grade 3: severe or morbid obesity is a BMI of 40-50 kg/m²

A BMI greater than 50 kg/m² is termed super obese.

The definition of Obesity in children involves BMIs greater than 85th percentile as overweight and over 95th percentile as obesity.

However, some authorities advocate a definition of obesity based on percentage of body fat. This is because the interpretation of the BMI may not be accurate for mesomorphic (muscular) and sarcopenic individuals. Using body fat as a measure, percentage of body fat greater than 25% defines obesity in men and over 33 % defines obesity for women.

Co morbidities associated with Obesity 1

The regional fat distribution substantially affects the incidence of co morbidities associated with obesity. A high abdominal fat content (including visceral and to a lesser extent, subcutaneous abdominal fat) is strongly correlated with worse metabolic and clinical consequences. These fats also block the action of insulin receptors causing insulin resistance 4. As a result, Android obesity which is predominantly abdominal is more predictive of adipose-related co morbidities than gynecoid obesity, which has a relatively peripheral (gluteal) fat distribution. For example, a waist circumference greater than 94 cm in men and greater than 80 cm in women and waist-to-hip ratios greater than 0.95 in men and greater than 0.8 in women are the

thresholds for significantly increased potential cardiovascular risk. Circumferences of 102 cm in men and 88 cm in women are indicators of a markedly increase potential risk requiring urgent therapeutic interventions in metabolic syndrome.

CAUSES are multifactorial and some of these are:

- * Metabolic factors
- * Genetic factors
- * Level of physical activity
- * Behavior
- * Endocrine factors
- * Dietary habits
- * Socioeconomic / cultural factors
- * Smoking cessation
- * Pregnancy and menopause

Pathophysiology

The pathogenesis of obesity is far more complex than the simple imbalance as a result of too much eating and not enough exercise. It is true; however, the prevalence of inactivity in developed countries is considerable. Approximately 22% of adults and 25% of adolescents in the U.S. report notable regular physical activity 1. About 25 % of adults in the U.S. report no remarkable physical activity. Similarly, it is about 32% in Australia 5.

* Genetics: can predispose individuals to developing obesity and also insulin resistance.

* Insulin resistance is linked with obesity: the degree of insulin resistance is directly proportional to the amount of central abdominal visceral body fat 6. The fatty acids from this metabolically active body fat store block insulin tissue receptors and cause insulin resistance. High levels of insulin increases malonyl CoA and the latter inhibits fatty acid oxidation by reducing carnitine palmitoyltransferase enzyme that shunts fatty acids into mitochondria. In other words, hyperinsulinism stores fat by increasing malonyl CoA which inhibits functional carnitine palmitoyl transferase activity and shunts fatty acids away from oxidation in the mitochondria. Lifestyle factors also contribute to the pathogenesis of insulin resistance and these are high carbohydrate, low fat diets 7, a sedentary lifestyle 8, and smoking 9. Furthermore, evidence at present associates chronic inflammation as a trigger for chronic insulin resistance.

* Leptin resistance: Leptin is an anti-obesity hormone produced by fat cells. The main role of leptin in body-weight regulation is to signal satiety from adipose tissue to the hypothala-

Theresa Yee Chief, Suwa

mus and thus reduce dietary intake and fat storage. Leptin also has a negative effect on Neuropeptide Y which is a powerful hunger stimulant. A low leptin level may present as excessive food consumption, binge eating, and food cravings all of which are associated with obesity. Leptin has been reported to be associated with heart disease by suppressing the release of adiponectin (10). Adiponectin is an adipocyte-derived gene product which has anti-inflammatory and anti-atherogenic effects.

* **Neuropeptide Y promotes Obesity:** Neuropeptide Y is located in the brain and autonomic nervous system. It stimulates food intake, inhibits energy expenditure, increases body weight and increases anabolic hormone levels by activating the neuropeptide Y (1) and Y (5) receptors in the hypothalamus (11). Carbohydrate ingestion stimulates Neuropeptide Y and aggravates obesity (12).

* **Prolactin determines deposition and mobilisation of fat.** Is a hormone released from the anterior pituitary. Prolactin secretion, outside of pregnancy, is altered by increasing body weight in both children and adults. Prolactin plays a major role in determining the deposition and mobilization of fat. Weight reduction with the accompanying decrease in plasma insulin levels leads to a normalization of prolactin responses in most circumstances (13).

* **Cortisol promotes Central Obesity:** Cortisol is a hormone released by the adrenal cortex in response to stimulation by ACTH that is released by the pituitary gland. The ACTH is released in response to CRF (corticotrophin releasing factor) and arginine vasopressin from the hypothalamus. This cascade is stimulated by stressful situations such as emotional stress, excess estrogens and nutritional insufficiencies and if an individual has central obesity. Cortisol has antilipolytic effects and Growth Hormone has the opposite lipolytic action. DHEA, another adrenal hormone, has an anti-obesity effect by decreasing fat tissue, excess insulin and food intake (14).

* **Hypothyroidism reduces Basal Metabolic Rate (BMR):** and affects metabolic function. Studies suggest that thyroid hormones may modulate leptin levels and affect eating disorders and chronic obesity (15). Obesity, an insulin and leptin resistant condition, on the other hand can aggravate thyroid problems via its influence on high Neuropeptide Y levels.

* **Inflammation Promotes Obesity:** most obese subjects have elevated plasma levels of inflammatory markers which correlate with

the degree of obesity and insulin resistance and decrease after weight reduction and exercise. Evidence now favours chronic inflammation as a trigger for chronic insulin insensitivity rather than the reverse situation (17). This can be measured using hs CRP.

* **Testosterone deficiency in males:** is associated with obesity. Testosterone inhibits lipid uptake and lipoprotein-lipase activity in adipocytes. It also stimulates lipolysis and exerts its effects mostly in visceral adipose tissue. Also, there is increase aromatase activity in fat and obesity therefore diminishes testosterone. Aromatase causes increase shunting or conversion of testosterone to estradiol and a progressive hypogonadal state (26).

* **Weight gain and Allergies:** food reactions cause weight gain by oedema and fluid retention.

CLINICAL HISTORY AND PHYSICAL EXAMINATION 1: A full HISTORY must include a diet inventory and an analysis of the client's activity level. Screening questions are asked to exclude depression are important because this may be a consequence or cause of excessive dietary intake and reduced activity. Because about 30% of patients who are obese also have eating disorders, screen for these in the history. The possibility of bingeing, purging, lack of satiety, food-seeking behaviour and other abnormal feeding habits must be identified because management of these habits is crucial to the success of any weight-management programme. It is also necessary to find out about Co morbidities related to obesity such as cardiovascular disease, Diabetes, malignancy, gall bladder disease and reflux, etc.

In the PHYSICAL EXAMINATION, a detailed cardiac and respiratory evaluation is crucial to exclude cardiomegaly, hypertension and respiratory insufficiency. In the abdominal examination, attempt to exclude tender hepatomegaly which may suggest nonalcoholic steatohepatitis (NASH) and distinguish the striae distensae from the pink and broad ones that suggest cortisol excess.

When examine the extremities, search for joint deformities, and evidence of osteoarthritis and pressure ulcerations.

* **Measure Waist and Hip circumference** - these are useful surrogates in estimating visceral fat. Serial tracking of these measurements helps in estimating the clinical risk over time.

* **Body composition analysis using Bio-impedance (VLA)** to measure body fat percentage is very useful if available. Caliper testing for skin thickness can also be used.

* **Neck circumference is predictive of a risk of sleep apnea** and its serial measurement in the patient is clinically useful for risk stratifi-

cation.

LAB STUDIES

* Full Lipid Profile, Liver Function tests
Thyroid function tests, screening for 24 hour urinary free cortisol test,

* Fasting glucose and Insulin levels

* Additional Functional Tests include identifying both immediate (IgE) and delayed (IgG) sensitivities to over 120 food and environmental substances that can cause long-term obesity.

TREATMENT

Restrict Carbohydrate: It has been shown that severely obese subjects with a high prevalence of diabetes or the metabolic syndrome lost more weight during six months on a carbohydrate-restricted diet than on a calorie and fat-restricted diet, with relative improvement in insulin sensitivity and triglyceride levels, even after adjustment for the amount of weight loss (18). It is important to recognize that there is no evidence at present that low-GI foods are superior to high-GI foods in regard to long-term body weight control (19). Also, for many years, the ketogenic programme (10-20% of kilojoules as carbohydrate) has been used to safely and effectively reduce body fat (20).

Micronutrients for Fat Loss

* Conjugated Linoleic acid (CLA): found in hard cheese and cooked meat/ fish is a powerful fat loss agent capable of increasing Lean Muscle Mass independent of exercise (21)

* Omega 3 : oils reduce insulin and leptin resistance (22).

* Chromium : induces fat loss (23).

* Vanadium: has been found to inhibit hypothalamic neuropeptide Y, which results in reduced appetite. Vanadium was found to induce a reduction in appetite and weight gain along with normalization of insulin levels in models of obesity, suggesting its possibility use as a therapeutic agent in obesity (24).

Exercise

Fat burning is greatest after fasting because the outer carnitine palmityl transferase action is increased. Fat burning is therefore greatest in the morning. The Key points for Fat loss are exercise first thing in the morning, as far

from eating as possible. Combine resistance and aerobic exercise, do not combine sports drinks during exercise and consume carnitine 30 minute before exercise (25).

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SPECIAL REPORTS

5.1 APOLLO PACIFIC HOSPITAL'S IMPACT ON OTHER INVESTMENTS IN FIJI

Michaels S Chandra, USA

Apollo Pacific Hospital is the most important development and venture in Fiji in this decade. Not only it will provide the needed tertiary health care for the people in the country so that they do not have to seek this care abroad but it will also complement other developments such as tourism industry. In order for the tourism industry to flourish and maximize its potential, a health care system of this nature and magnitude is necessary so that the visitors feel safe of coming here.

I do recall recently reading in Iowa, USA about a celebrity from abroad who fell down and injured his head while visiting Wakaya Island. He had to be flown out to New Zealand for neurological and neurosurgical care. This news was out in the internet all over the world. If there was a facility like the proposed Apollo Pacific Hospital present, the transfer would not have been necessary and hence the adverse news in the media would not be possible to raise anxiety level in our potential visitors.

The Apollo Pacific Hospital therefore brings into play the following:

1. Offer tertiary care to all the people of Fiji and also the South Pacific Forum Countries. This level of care is not available in Fiji and the surrounding countries at this time.
2. Boosts tourism potential. Tourists do look at the availability of good healthcare in the places they plan to travel.
3. Promote health tourism if our care is world class and costs are reasonable. This is where Apollo is recognized as the world wide leader.
4. Encourage reverse diaspora among the Fiji physicians abroad.
5. Stop the tremendous loss of foreign exchange from Fiji when patients seek expensive tertiary care in other countries such as Australia and New Zealand.
6. Potentially earn significant foreign exchange if we can develop a world class health tourism.
7. Stimulate improvement in health care generally in other government and private hospitals.
8. Enhance medical education in Fiji.

9. Traditionally Fiji has depended on Australia and New Zealand for its tertiary care. After December 5, we have come to realize how vulnerable we are as a nation when embargoes have been put on our people's lives. This is more reason for and urgency of this project.

10. Granting of the SLIP package is very crucial and urgent for the project and should be expedited for the following reasons:

* Apollo will not consider coming to Fiji without the SLIP package. This is how they have operated in other countries as a low cost high powered health care provider.

* By delaying, we do not want to give Apollo a wrong signal that they pull out of this project. Apollo does not have to come to Fiji because they have so many other projects in India and other countries. We need them.

* An announcement of this project will give a very strong signal to Australia, New Zealand and USA that in spite of their blockade further major developments in Fiji are moving on. Also, since Apollo is an Indian outfit shows that the Government of India, which is the largest democracy in the world is wholeheartedly supporting the interim government and the country.

* Fiji urgently needs some positive and major news in investment and development and Apollo Pacific Hospital provides a big one.

Michael S. Chandra, M.D., F.A.C.C.

5.2 A CODE OF ETHICS

At the Annual General Meeting it was resolved that the college should appoint an ethics committee to formulate a "Code of Ethics" for the College and for this activity to complement the setting of practice standards and practice audits. This column will address issues related to this activity and we would encourage your contributions and comment over the coming year.

What do we mean by a Code of Ethics?

Below are some of the definitions we can use to help us

* Code of Ethics -for any profession to be worthy of being considered a profession it must have a Code of Ethics. The existence of a code is the one standard by which all professionals are judged. It provides guidance to practitioners as well as users and sets out expectations of professional practice and the manner in which services should be conducted.

* Ethics- a system of determining whether an action is right or wrong, moral or amoral.

* Morality refers to a particular situation or event that requires a decision regarding its rightfulness.

* Ethical principles are guidelines that we can apply to a situation to decide whether it is moral or amoral eg the difference between killing and letting die i.e. euthanasia or withholding treatment.

* An ethical dilemma is a situation where we have to place one ethical principle above the others and to do this we use values.

* Values are an estimate of worth. We determine one principle to be worth more than the others in the situation we are judging eg in relation to termination of pregnancy we have to determine the life of the mother in relation to the right of life of the child.

* Values are developed over many years through a series of activities such as formal teaching, life experience, religious upbringing, cultural influences and the legal environment of a particular country.

* Since values differ according to the above influences the ethical principles used to resolve ethical dilemmas will differ.

* The challenge in Fiji will be to formulate a Code of Ethics, which embraces all the above definitions and also complements the Code of Ethics of similar professional bodies to which we are affiliated.

Rosemary Mitchell, Suva

Sessions with a therapist *By Sunila Karan*

Here are some tips for getting the most out of your sessions with a therapist:

Book a regular session time each week, and arrange it so that you don't have to rush back anywhere. You may feel you need a little time to gather your thoughts together and settle your feelings.

Don't be late. Make sure you arrive in good time.

Make sure the therapist maintains confidentiality.

Don't feel compelled to discuss your therapy sessions with friends, until you feel ready, or ever. The sessions can be kept personal and private.

The relationship between you and the therapist should be kept on a professional level only. This creates formal boundaries.

Letters to Editor

CERUMEN MANAGEMENT

Dear Sir,

A comment from a hearing care practitioner with practices in Australia and Fiji.

GPs generally develop individual techniques for the task of cerumen removal and it would appear that there is differing opinion as to the best way for a patient to self-manage, post consultation.

The standard method has been to use a large syringe, filled with warm water, aimed at the superior area of the canal, allowing the pressure to gently attack the cerumen impaction from its uppermost point, thereby lessening the impact of the water on the TM when it finally penetrates the barrier. Due to the oblique angle of the TM, irrigation from the superior region of the canal enables a lesser angle of attack when the jet strikes the TM and pushes the cerumen plug from behind in order to move it from the canal. But the implementation of this technique varies with personal preference, experience level and with the practicalities of dealing with varied canal structures - narrow canals, polyps and exostoses.

My experiences in Australia as a practitioner in the field of auditory assessment and rehabilitation through the provision of hearing aids, has meant a great deal of wasted time due to impacted cerumen - preventing proper otoscopic examination of the TM and canal walls; preventing initial audiometric assessment; preventing impression taking of the canal for the creation of an ear mould; reducing the efficiency of existing instrumentation; and generally slowing down the process of assisting a hearing loss. In the main, throughout Australia, GPs are responsible for cerumen removal, although there are some working in the assessment / rehabilitation areas who elect to undertake the task without referral on to a GP, presumably as a time saving measure, as there is no reimbursement on offer from either the Government's Medicare system or from private health insurers. A legal challenge from a disgruntled patient may someday reverse this trend...

Not only do cerumen issues create difficulties in the rehabilitation area, but the constancy these issues with heavy cerumen producers and their eventual occlusions, place them in a high risk category for external and / or middle ear infections and possible damage to the TM and / or Middle Ear system in subsequent management procedures.

Many GPs require nursing staff to deal with irrigation procedures and it is possible that the use of correct technique may be limited through lack of experience in some cases. The potential for a perforation of the TM is a very real threat when using a syringe with manually controlled

pressure. The potential for resultant infection from cerumen particulate being washed into the middle ear cavity, is therefore, high. The resultant infection can be debilitating and, if left untreated, life threatening due to the potential for meningial infection.

The preference is towards electronically controlled pressure systems for irrigation and it is pleasing to note that these units are becoming more widespread both in Australia and Fiji.

Other methods of cerumen removal may involve a manual 'picking' extraction of the material from within the canal - but this has potential for compromising the integrity of the canal wall (cerumen seems to adhere very well as it ages); or a suctioning of the material using a dedicated cerumen removal unit more often seen in ENT rooms.

In all cases, it is prudent to consider having the patient ease the removal process by assisting the release of cerumen through the earlier use of proprietary agents like Waxsol or Cerumol - both of which I believe to be surfactants, allowing the cerumen to release more easily from the canal wall.

A recent suggestion offered to me by a GP who deals with impacted cerumen on a regular basis, was that the use of Sodium Bicarbonate will actually assist in dissolving the cerumen without irritation to the canal, whereas Waxsol and Cerumol treatments act at the cerumen / canal wall interface to release the cerumen and soften it to a degree, but also have the potential to irritate the canal if not used correctly.

I have witnessed the results of a patient's attempt at self management using Sodium Hydroxide solution, and the potential for serious damage to the canal is certainly a concern with this method. The cerumen had undoubtedly dissolved overnight but there was severe inflammation of the canal to the point where it was impossible to touch the ear without causing pain.

Patients often ask advice for ongoing cerumen management once they have visited their GP for cerumen removal and the only way to handle that question from my perspective is to refer them back to their GP. Many 'serial occluders' quite proudly respond to the question "Do you use anything to clean your ears?" with the typical and generally predictable response "Cotton tipped applicators". Some are now brandishing bulb type self irrigators purchased at the pharmacy - reasonably safe, I guess, thanks to a 'maximum pressure' limitation with the unit. Others buy 'Ear wax removal tools' also available from their pharmacy, basically a curved wire with a handle - similar to an opened paper glider clip - and with similar associated dangers from potential misuse. A sneeze, a trip, an accidental knock whilst in the process of deep intrusion, could very simply cause trauma to the canal wall or the TM and possibly



MED-WATCH

- Having a look at some General practitioners business cards is an exercise in itself. Some of the information is totally misleading and one can only wonder why we are fooling the client base, if not ourselves of our worth. Individuals give information about former positions held in the civil service and others profess specialist status when they are no registered as such. Next time you have a few minutes take a look through some samples.
- * Some General Practitioners are becoming known as Stroke Doctors as they offer vitamin injections to “cure” such. Others have earned themselves the status of “Scan” Doctors because they have Ultrasound Scanners on site. Patients turn up and self order scans without referrals. Rumour has it that a young entrepreneur in the west is becoming a “Laboratory” doctor too, contemplating the set up of a mini-lab to service the clients in his area which already has a bleeding centre of an established Laboratory, down the road.
- * What is the role of a 5 star general practitioner? We note that in the Australian general practice scenario even the larger groups are being bought out by larger sharks. With increased workload and possibilities of litigations, the constant need for family time, sport, rest, vacations and breaks a lot more individuals are opting out of solo practices. What would some of our seniors (60 plus) think of that? Some of our heptagenarians still turn up, though limping, all suited up in their Sunday best for a good 8 to 5 session. What sartorial elegance. Do we live to work or do we work to live?
- * It would make a lot of sense if Ultrasound technicians and Radiologists left the clinical management with the patient’s primary health care provider rather than suggest management and further investigative measures. It creates great pantomime when functional ovarian cysts are suggested as the cause of all pelvic and abdominal pain.
- * Can someone explain as to why so many patients from a certain institution are sent for CT scans as a protocol for headache management? Where has the established skills of history taking, a thorough examination and common sense management been superseded by CT scanning? Some of these G.P. designates have never worked outside a hospital setting. A sad way to earn a living.
- * A price war has hit the private laboratory arena. Keep your ears to the ground, cowboy, don’t shoot yet. The Indians are on the warpath. Chief Shitting Bull mentioned in his smoke signals, the patient must benefit. “There is lots of corn, pork and molasses for all the Indians and cowboys put together.”

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