Mental Health and Nutrition in Asia

Extending the Orthomolecular Approach

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Introduction

Over a period of six years I have examined the eating habits of various nationalities of Asian peoples. My purpose was to apply the facts and the concerns of the orthomolecular movement on a broad, regional level. Besides observing eating habits, I also scrutinized their behavior patterns, especially those behavior patterns which are known to be well-related to diet: hyperactivity in children (additives, lack of B vitamins, refined foods) motivation and intelligence deficits in children and adults
(protein deficits at age 0 to 5 years) extreme emotional swings in adults (hypoglycemia, certain B vitamin deficits) ramifications of the above in terms of cognitive structure and processes Methodologically, the study differs from other orthomolecular research in that it is not a controlled experimental study with one or two variables, nor is it an in-depth study of a small number of psychiatric cases. The results that follow are more in the nature of a survey which used the methods of nutritional anthropology and naturalistic behavior observation. Large numbers were surveyed; many, many variables were in operation; unobtrusive behavioral measures were taken in natural habitats of the subjects.

Epidemiologically, this study is another early attempt to extend the orthomolecular approach from severe psychiatric cases to general populations. I was not only dealing with patients; rather, with everyday members of the societies in question. I observed more of subclinical manifestations than full-blown disease entities. I entered into the world of lived experience of the subjects; observed their modes of perceiving, thinking and feeling; and finally I considered the nutritional factors which might be implicated (cf. Greene, 1977).

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Asian Nutrition in General

Before looking into specific nutritional factors and behavioral indicators in each country of Asia, there are a few important

and general points which can be made.

a) Perilously low intake of protein and calories prevails through much of Asia. And the population of this region is rising rapidly. The incidence of actual and borderline PCM (protein-calorie malnutrition) can be expected to increase unless deliberate efforts are made. The consequent deficits in intelligence and motivation of children raised under PCM conditions would also become more widespread. And this at the very time when there is an increasing demand for more skills and more education in workers.

b) It is ironic: in very few places of Asia are adults still starving in the streets. But malnutrition has shifted its target to the young. Every year fewer infants receive breast feeding. Processed foods are on the increase along with fast food chains. "The disturbing point here is that undernutrition is now occurring during the time when the most rapid developmental changes are occurring in the brain" (Winick, p.253). There is abundant evidence from animal and human studies that undernutrition during these periods can permanently retard brain growth and impair optimal brain functioning throughout life (Winick, 1974).

c) The model of the effects of undernutrition on mental development is a two-fold model. First, direct neurological deficits are induced when key nutrients are not available to the nervous system for its early development and later functioning. Second, a lowered activity level, exploratory drive, chatter, questioning, brightness of eye and play in the child will bring a lower level of interaction, stimulation and feedback from the mother. And it is this very interaction which leads to the development of optimal intelligence in the child.

Thus in India chronically undernourished children show deficits in reading, motor co-ordination, concentration and motivation. It is not a straightforward case of physiological deficit alone. Lack of social feedback to this undernourished, underactive or poorly behaved child further exacerbates the problem of his mental development.

d) In the developing countries of Asia, junk foods often have high status value, just as imported automobiles or clothing do. When one is the guest of an Indian or Pakistani family, they will want to serve you something special: Coke, or some other highly sugared, chemically derived beverage. Ironically, the woman of that household probably knows very well how to prepare the traditional, healthful recipes of her culture.

One can find white sugar, white flour cookies packaged in a blue tin with a royal stripe across the front. By classical conditioning, the valueless foodstuffs inside are associated with wealth, luxury and status. This appeal is well-known to advertisers, effective in most cultures, and especially so in Hongkong.

Let us now turn to more specific examination of nutritional and behavioral factors in each of the individual Asian countries.

Burma

Burma is a country of 32 million inhabitants, of whom 100,000 are robed as monks.

The daily diet of most people is rice, vegetables and spicy sauces. Throughout the country, cooking habits are defective. Thus, rice is boiled in a large pot of water and that water is later thrown away. Likewise, vegetables are boiled in water, which is then discarded.

"Why doesn't somebody educate those people?" You may have had the experience of telling a friend that he is doing something wrong, upon which he becomes offended, or he laughs at you as ignorant. It is the same when trying to educate Asians out of their traditional habits. Because somehow they believe — whether consciously or unconsciously - that their cultures have endured so many centuries, thus their ways must be valid and correct.

Expectant mothers virtually starve themselves, fearing that a rich diet would cause the fetus to grow large and result in a painful labor. They favor polished rice. Vegetables, fruit, eggs, milk are frowned upon.

Later the children are weaned on rice. Not surprisingly, 60 percent of the population in Burma show signs of nutritional deficiencies. Vitamin A, thiamine, riboflavin, iron, calcium, and vitamin C are commonly lacking. Signs of beriberi are frequently encountered. In some cases, extreme lack of thiamine has even caused death.

It is not difficult to imagine the effects of such a pre- and post-natal dietary intake on the neurological development of small children. Starving the cellular development of the tiny children could keep any nation from taking its great leap forward. In terms of efficiency, motivation, problem solving ability, perceptual acuity, attentiveness, the entire young population of the nation is held back at the starting line, due to early nutritional deprivation. Mentally, they can barely walk, not to mention leap.

Sad to say, this picture of nutritional insufficiency and hampering of ideal mental development is repeated in many developing countries.

Cambodia (Kampuchea)

This small Indochina country of eight million was once a highly civilized and spiritual people. Now the land is a war-torn, starving, ragged tragedy.

It could have been a food surplus country, abundant in rice and fish. Now, after the war and turmoil, vitamin deficiencies, marasmus and kwashiorkor are widespread.

There is the same irony of traditional beliefs here as in Burma. Twenty years ago when food was abundant, "visits to hospitals revealed many symptoms of undernutrition, due to ill-balanced diets rather than scarcity of food supplies" (May, 1961).

As important as the Green Revolution, better strains of rice, availability of pesticides and fertilizer, the factor of educating people about the nutritional values of different foods will improve their lot.

Hongkong

This British administered colony of South-em Chinese people is a bustling, rich metropolis. Yet one citizen told me that "everything else is a side dish to rice." His statement was representative, not out of line with the nutritional concepts and eating behavior of the general population of Hongkong.

Although Hongkong is a wealthy city and the people can afford a wide variety of food, the habit of a big plate of rice appears to be very deeply ingrained. For their first meal the children are forced to eat 'congee', a thick soup made from milled white rice. It is very reasonable to hypothesize that they become habituated to the repeated heavy carbohydrate intake, several times a day. Many adults say that they feel unsatisfied without a big dish of rice at a meal. This, despite the fact that they have ingested a large plate of vegetables with more than adequate protein, vitamin and mineral content.

Widespread borderline hypoglycemia is thus a plausible diagnosis for many in Hongkong.

Another orthomolecular psychiatric instance appears to be hyperactivity. Hyperactivity is induced by diets deficient in B vitamins (Hoffer, 1979). The milled white rice so vastly consumed by the Hongkong population makes B vitamin deficiency (whether in intake, absorption or utilization) quite likely. The widespread and surprising incidence of premature hair loss among the Hongkong Chinese points to a B6 deficiency as well.

Hoffer also reported that diets which contain an excess of denatured foods, especially sugar, will induce hyperactivity. With the large scale marketing and consumption of imported tinned foods, crackers, white sugar and white flour cakes and loaves, and white sugar candies, this nutritional situation also obtains in Hongkong. Finally, subclinical lead intoxication is known to induce hyperactivity. In Hongkong the lack of open space, the caverns created by 20 storey buildings fronting on all streets create a situation in which auto emissions build up and do not disperse. Children run in playgrounds on those streets and sit in classrooms on those very streets.

At least if they were taking calcium it would help to prevent the accumulation of lead in body tissues. But the Chinese in Hongkong are averse to milk and milk products.

These are the three major causative factors of hyperactivity which are present in Hongkong. And when the behavior of the children is observed, one's expectations are confirmed. They appear to have a very short concentration span. They are in constant

movement, but not with specific and consciously controlled direction and purpose. "They are a bit wild" reports one governess who has worked in other countries. "They will hit you and not even say 'Excuse me'." I suspect this is not caused so much by maliciousness as by lack of awareness and conscious control of what they are doing.

With hypoglycemia, hyperactivity, dangerous cadmium and copper levels, borderline mental illness caused by B vitamin deficiencies - and then add to this a very fast, rough, crowded and competitive pace *of* life - one would expect mental health care to be a widespread activity in Hongkong. So it is surprising to find that there are very few fully qualified psychiatrists practicing in Hongkong, and only one psychologist listed in the Yellow Pages.

It is not that the Chinese people of Hongkong have better mental health than people in the Western countries. Any stereotype of the peaceful, composed, wise Oriental gen-gleman must alas be dispelled. He does not exist in Hongkong.

Westerners have a tendency to express their mental illnesses, their inner conflicts via unusual behavior, psychosomatic symptoms and verbal complaints. The Chinese tend to keep it all inside. If they are feeling miserable, depressed, hopeless they will barely show a sign of it on their faces. They will rarely tell anyone of their inner feelings (whereas a Westerner loves to catch an attentive ear to listen to his woes).

India

This ancient civilization which once achieved the heights is today saddled with the mundane problem of providing adequate nutrition for 600 million inhabitants. In the Children's Charter of 1970 the Government of India recognized the relationship between nutrition, mental health, and the development of the nation. Three points were laid out:

1) 65 percent of the children of India suffer malnutrition and deficiency diseases;

2) malnutrition during childhood leads not only to physical retardation but also to debilitating mental effects which are perhaps irreversible;

3) the productive capacity of the nation. . .will be severely limited.. .until child malnutrition is eradicated.

Thus, the Government has recognized the problems concerned with basic minimum quantities of foods. But how about problems concerned with the qualities of the foods consumed? Consider this sequence:

frequent use of white sugar

child loses ability to concentrate with stability \

learning deficits and poor school acquisition of knowledge and skills

\ poor job performance as an adult

\ low national productivity

I have often observed Indian children taking large quantities of sweets which have a heavy proportion of white sugar. The Government of India should be educated to realize that when starvation is not the problem, the choice of foods may be. Uninformed eating habits are also very harmful to the mental capacity of the youth and the productive capacity of the nation.

In a survey I made of the eating habits of upper middle class and relatively educated Indian families, the following was a typical teenager's pattern:

breakfast: caffeine tea, canned milk and white sugar

lunch: white bread, white rice, and some vegetables

dinner: whole wheat bread and some vegetables

The parents of this teenager certainly want her brain to perform at optimal capacity during school hours, so that she can advance in her knowledge and in career training. But it appears that the basic nutrients for nerve cell function (phosphorus, calcium, magnesium, B vitamins, selenium, tryptophane) are absent or minimal, and the youth is held back from the start. Imagine the effects of such nutritional habits on a cultural, nation-wide level!

Indonesia

"In areas in which iodine, protein-calorie malnutrition, other serious nutritional stresses are widespread and severe, a significant portion of the individual variation in behavioral capacity can be traced to the effects of nutritional stress on nervous system development" (Greene, 1977).

Greene did an extensive study of a village in Highland Ecuador where goiter was hyperendemic. He found that the intelligence level, the behavioral capacity and the achievement orientation of the villagers were all negatively affected by the nutritional deficiencies with which they had been raised. He even went further, to show how the socio-political structure of rigid economic classes and exploitation of cheap labour could be traced back to nutritional factors. The nutritional factors were at the basis of the entire social structure. Flatly speaking, a substantial percentage of the villagers were retarded, had concept-forming abilities equal to a young child only, were apathetic and docile, were limited to stereotyped behavior patterns. Mild neurological deficits were so widespread in that community that they had come to be regarded as normal (this refers to the peasant class only).

Likewise, in the major island of Java in Indonesia, children residing in areas of endemic goiter were substantially behind control groups on tests of intelligence. Many villagers showed mild degrees of retardation. There is, in fact, a spectrum of retardation present, running from the obviously retarded who could only perform the simplest functions, to those individuals who blend in, who fulfill a function in the society, but who are limited in cognitive capacity (Stanbury, 1977).

Japan

Japan is of course the most advanced Asian nation, economically, educationally, scientifically and technologically. As such, current situations in Japan indicate the trends that the other Asian nations will follow.

The state of nutritional affairs is thus not encouraging. I surveyed several Japanese households, upper middle-class professional/managerial strata. The results of the survey tabulated as follows:

junk foods	4
heavily salted foodstuffs	3
milled white rice and white rice products	2
denatured foods	1
aging items (e.g. limp vegetables)	1
foods of questionable value (meat, eggs)	3
definitely nutritious	1

It appears that undernutrition is not only a result of poverty in Asia. Even well-to-do Japanese are on a trend to denatured, unhealthy foods.

Laos

This Indo-Chinese land of four million inhabitants shows the typical Southeast Asian nutritional pattern of large quantities of rice, enhanced with small quantities of fish or vegetables when available and affordable.

Goiter is common in certain areas, and in those areas may affect as much as 95 percent of the population. The haunting words of Greene are brought back to mind: "I believe that a careful evaluation will show that in many parts of the world significant segments of human populations show discernible neurological deficits and behavioral limitations" (p. 91).

Malaysia

A brief word about this upcoming tropical land of 13 million, with special reference to the thiamine proportion of the white rice they consume.

The diet in Malaysia is better than most Southeast Asian countries. The climate produces fruits in abundance. The political structure is stable and the economy making continuous progress. However, much of the population still lives on highly milled white rice, of which the thiamine content is 0.4 mg thiamine per pound of rice. The acceptable level according to international standards is 0.7 mg thiamine per pound of rice.

Thus, many rural children are seen to be "lacking in spirit."

People's Republic of China

There are a number of important points to be noted in the area of mental health and nutrition in China:

a) When the Chinese greet each other during the day, instead of saying "How are you?", they say "Have you eaten?", more specifically, "Have you had your rice?" To have enough food to eat has been the central question of life for the vast majority of Chinese over centuries. Although China is not suffering from starvation and outright malnutrition, it is still "a vast area of marginal malnutrition" (Ng and Wadsworth, 1973).

b) The whole of China suffers sporadically from protein malnutrition. However, the nutritional sophistication of the Chinese is greater than other Asian, developing or poor countries. Special attention is given to the mother pre- and post-partum. The effects of protein deprivation on neonatal neurological development are not so severe.

c) The Chinese have been wise enough to make the soybean a staple and prepare it in many clever ways — as a sweet drink, as bean curd, as a dried chewy skin. Due to the excellent amino acid balance of the humble soybean it is a good source of protein. Thus, sufficient protein is available to everyone, whether in the cities or the countryside.

d) In fact, 90 percent of the protein used by the Chinese is of vegetable origin. The West stands to learn a lesson here from the Chinese, with respect to protein ecology and the feeding of increasing world populations (Lappe, 1971).

e) The Chinese have always paid attention to the visual quality of the meal set before them on the table. This is of value in promoting the proper frame of mind while eating - appreciative, peaceful, harmonious. Unfortunately, it has also led them to the milling of their rice to render it as white and as pure in appearance as possible. Needless to say, much of the nutritional value of the rice is lost when the less pretty husk is removed.

f) There are several more facts of relevance to the orthomolecular approach. First, the Chinese are very heavy smokers, likely to render them mildly deficient in vitamin C. Second, the mechanical milling of rice leaves those Chinese who are dependent on it deficient in thiamine and riboflavin, and subject to a cluster of psychological weaknesses and emotional imbalances. Third, the heavy carbohydrate intake from rice combined with a penchant for white sugar sweets, could be leading to a significant incidence of hypoglycemic symptoms among them. Fourth, since the Chinese have never like milk or milk products as much as Westerners, calcium deficiency may be a problem with its associated subclinical psychological symptoms. (The term 'subclinical' assumes an ominous tone here. In Asia, where mental health services are minimal, many borderline psychological problems will simply be neglected, passed by, due to lack of personnel and time. Furthermore, among the Chinese is a way of thinking which assigns to behavioral and emotional deviations a physicalistic basis. Psychological problems are skimmed over too rapidly and thus the range of 'subclinical' problems may really be quite vast.)

g) A word of speculation: Chinese and Japanese cultures have developed and to this day utilize many interpersonal rituals and inner psychological devices to avoid the outburst of emotions at all cost. Perhaps a factor which has led the Oriental cultures to develop in this way is that people do not feel emotionally stable. Such a feeling of lack of emotional stability and balanced self-control could be traced back to the dietary factors mentioned above, h) A word of interest: In the traditional Chinese theory of health, different foods are said to have "heating" or "cooling" properties. This may be interpreted as "exciting, stimulating" properties, and "soothing, relaxing" properties. The Chinese have long believed that the choice of foods affects the mood of the eater. Are the Chinese aware of certain subtle, energy-related properties of foods which we in the West never tuned into ?

Philippines

This is a country where there is an abundance of food and good-natured people

both. The mental health profession is barely developed. The reason for this is not that mental illness is a taboo, something to be hidden away, not talked about, where one pretends that one's society is above such things. No, the reason for a tiny mental health apparatus in the Philippines is that interpersonal relationships are very warm, and that diet during pregnancy, postpartum and adulthood is quite decent.

The archipelago nation of 46 million has a superabundance of fruits and vegetables growing. The inhabitants eat frequently, six times a day. This is not an indication of widespread hypoglycemia. Rather it is a social occasion, it is a break from work, and it gives a calorie boost to recover from the great heat.

Mothers in the Philippines take the time to give snacks of bananas and fruit juices to their children. A local junk food industry has not developed as yet. In wealthier locales like Hongkong, the junk food industry has either developed locally or penetrated from the point-of-view of international marketing. Ironically, the children in the poorer locales are getting the better diet.

Most mothers, even in small village communities (barangays), get vitamin supplementation from their physician. Three decades of American colonization of the Philippines seems to have had a beneficial effect on the educational level of health services in the Philippines.

Taiwan

Taiwan is an enterprising Chinese island of 17 million inhabitants. By studying it we can have a capsule survey of the factors inter-playing on mental health and nutrition in Asia.

In 1954 when Jolliffe did his epidemiological survey of Taiwan, he found the following deficiency levels:

riboflavin deficiency	70% of the population
thiamine	50% of the population
niacin	10% of the population
vitamin C	30% of the population
vitamin A	10% of the population

Early in the 1960's it was reported that each person in Taiwan consumes an average of 390 pounds of rice per year. Furthermore, that rice was milled to 93 percent extraction, so that widespread thiamine deficiency was to be expected.

That was the picture, and a very typical picture it was for a Chinese population or, for that matter, any Southeast Asian country. The situation has improved for Taiwan (and one can only hope that nutritional practices will move in the same direction in other Asian countries as they have in Taiwan).

Through enterprising economic efforts, through foreign aid from the United States, the Taiwanese have raised their economic level to the point that they can readily import foodstuffs; that they need not send all fruits and vegetables abroad to earn foreign exchange. They have opened themselves to foreign educational influences and medical knowledge. In brief, they have lifted themselves entirely out of the poverty, and in good part out of the ignorance, which characterize many of the developing countries of Asia.

The dark side of possibilities is that Taiwan, like Japan or the Philippines, may open itself more and more to the negative aspects of the modern nutritional scene. They should opt for whole wheat bakeries, health food shops, organically grown vegetables. But instead they may opt for fast-food chains, white flour pizza parlours, ice creams made with chemical flavours and dyes. Which side of the nutritional equation, negative or positive, is exerting more pressure on the developing Asian peoples? At this time, the health food companies cannot throw around the kind of weight and advertising dollars that the international fast-food chains can. They don't have a fraction of that type of money behind them.

Thailand

Thailand is known as "a food surplus country where people suffer from malnutrition" (May, 1961). Why?

Firstly, in 1960 they began widespread mechanical milling and polishing of rice, which is the basic component of their diet. Incidence of beriberi rose.

Secondly, infants are raised on rice and bananas. Although calories are sufficient, vitamins, minerals and proteins are dangerously

lacking. In fact, infants begin their life with protein deficits from which they never recover. The studies of Witkin and others, concerning the effects of protein deprivation on mental development of children, have pointed application here.

Thirdly, lack of education and proper knowledge of the nutritional value of foods is the situation which obtains here, as in other Asian countries. (Americans have their problems about misinformation in their eating habits — but a whole different spectrum of mistakes. It is quick hamburgers and whipped toppings in the affluent West. It is thin pregnant women and an idealized bowl of pure white color rice in Asia).

There are highly nutritive foods available in Thailand, but the inhabitants do not eat them! Vegetables could compensate the thiamine deficiency from the milled rice, and vegetables are widely available. But they are not eaten in large enough quantities. Instead, fish is popular. Unfortunately, fish will not replace that thiamine lost in the processing of rice.

Furthermore, it is not just a question of one vitamin being deficient (although that could cause serious symptoms in itself, mental and physical). One B vitamin sorely lacking can rend the entire web of B vitamin utilization. Cheraskin (1974) has surveyed the significance of the B vitamins, their necessity for many aspects of mental health. Emotional imbalance, irritability, inability to concentrate are among the symptoms resulting from B vitamin deficiencies. When this nutrition/mental health equation is extended to a nationwide level, it becomes a major factor to weigh in the culture and development of that nation.

Vietnam

When a survey was made in 1963 signs of marginal subnutrition were encountered everywhere. The public health level in Vietnam is undoubtedly far worse at the time of this writing.

As in other Indo-Chinese countries, widespread thiamine and riboflavin deficiency is observed. Because the mother eats only rice, infants receive very little protein. Impairment of neurological development can thus be expected in a wide segment of the young population.

The Vietnamese inherited from the Chinese a disgust towards milk and milk products. Thus, rickets is very widespread among children, due to the lack of calcium. The effects of calcium deficiency on nervous system functioning and behavior must also be present. But such behavioral manifestations as irritability, mood swings, depression, which one observes in Western cultures, are not necessarily to be observed among Orientals, though they be suffering the very same deficiency. The behavioral manifestation is filtered through rather strong cultural norms of permissible and appropriate behaviors. The nutrient deficiency which expresses itself as irritability in a Westerner may get translated into stubborn silence, arms folded, stone-faced, no reacting in an Asian.

Future Directions

The mental health movement in Asia now stands where Europe stood 100 years ago. They are beginning to face up to the problem, and to stop treating the mentally ill as outcasts, lepers or of demons possessed.

But facilities are still primitive. Many countries do not teach a course in psychiatry at their medical schools. They will be obliged to soon enough, because it is highly likely that the incidence of mental illness will be rising in Asia. As rural folk transfer into the harsh urban environments they come under tremendous economic and environmental stress. They lose the emotional support of their extended family kinship systems. They lose the emotional and social security of their village atmosphere. They lose the perceptual and attitudinal framework of their traditional ways.

Given this expectation, that the submerged iceberg of mental distress will begin to surface more and more throughout Asia, then what role can the orthomolecular approach play? A large one, I believe, and for four reasons.

First, the mental hospitals in Asia still have a physicalistic bent. They never took up the

Freudian approach, because their culture and mentality are so totally different from the middle-class, intellectual, emotionally — and instinctually — repressed European family which Freud observed. The problems and repressions which Freud saw in those European families barely exist in the group-orientated Asian families. So why should they take up Freudian solutions of psychoanalysis, psychodrama, ego analysis?

Asian mental health workers are thus in search of a model which would be more suitable to the needs of their people.

A second factor which opens the door for the orthomolecular approach in Asia is their admiration and respect for things scientific. They have passively stood on the sidelines and observed the tremendous technological triumphs of Western civilization. They still feel some inferiority about not being so scientifically-minded themselves. The ortho-molecular approach could thus win favor because it is solid, empirical, scientific — in a world of mental illness and treatment which is vague, confused and at times frightening.

Thirdly, economic progress and advancement throughout Asia will permit the governments to ease away from their exclusive concern with economic development, and to begin to bring into focus health, mental health, and quality of life issues. Many government officials in Asia have trained in the West, and have respect for the analytical approaches of Western disciplines. If the orthomolecular approach can be presented to these officials as empirically based and a leader in the field of scientific psychiatry and public health, then they are sure to incline towards it.

Furthermore, and fourth, is the factor of time and training. V.T. Cunaratne, WHO Regional Director for Southeast Asia, says that there is an urgent need for more effective and less expensive means of providing mental health care in Asia. Only a tiny number of psychiatrists are available for vast populations. Training of nurses, parents, dietitians, school teachers and counsellors, social workers, and general medical practitioners in the orthomolecular principles could fill the gap. If all these personnel who are directly or indirectly involved with mental health can be awakened to the fundamental importance of diet, nutrition, vitamin and mineral supplementation, pollution-free air and exercise, then the gap between far too few psychiatrists and far too many persons under stress can be bridged.

Considering the above factors, we can safely conclude that now would be a very propitious time to introduce orthomolecular concepts into the medical schools, hospitals, counselling centres, and public health ministries of the Asian countries.

I cannot close without a word of caution. In the past, overseas "experts" gave inappropriate advice to local mental health workers setting up their facilities. They did not fully understand the psychological needs and the forms of symptom expression of the local population. Even if one is introducing a seemingly culture-free treatment like the orthomolecular methodology, one must try to understand the local psychology and the local types of psychopathology. Before offering a treatment, even if it is known to be an excellent treatment, one must be reading the outward signs of distress correctly, to know what the real inner problem is.

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