

## Prohibited Foods and Thai Traditional Medicine

Somporn Putiyanan\*

*Department of Pharmaceutical Sciences, Faculty of Pharmacy, Chiang Mai University, Chiang Mai 50200, Thailand*

*\*Corresponding author. E-mail: [somporn@pharmacy.cmu.ac.th](mailto:somporn@pharmacy.cmu.ac.th)*

### ABSTRACT

*The study aimed to find out if foods had any effect on different groups of people, grouped by gender, based on Thai traditional medicine. The quantitative and descriptive methodology was used for collecting data from 257 pharmacy students of Chiang Mai University in academic year 2000. Data were collected during June to July, 2000. The results of the study did not show significant relationship between foods and individual elements. 37.80% of the students showed the relationship of intake food and illness. 25.29% of the students showed the relationship of intake food and illness when seasons were taken into consideration and 35.41% of the sample showed the relationship of intake food and illness when times of occurrence were taken into consideration. An uncontrollable factor was that the samples did not give the correct answers. It might be that the samples did not take notice of the health status of themselves nor did they remember correctly what they had eaten which caused them illness. Moreover, the studied populations were only pharmacy students, therefore a wider range of targeted populations should be further focused on.*

**Key words:** Prohibited foods, Thai traditional medicine

### INTRODUCTION

Nowadays, people's life styles have changed tremendously from the past, especially in food consumption. People now tend to eat more carbohydrate such as starch, fats and desserts which often cause health problems. Heart failure from high cholesterol, heart diseases, diabetes and other illnesses are increasing. Food processing which often affects consumer's health and illnesses are mostly caused by imbalances in human's body. Human's body excretes surpluses by breathing, sweating, urinating and defaecating. If waste accumulation is too high, the substances can become toxic. Human metabolism will try to clean all toxins and balance the body back to health. Illness and disease are the main problems affecting the standard quality of life and are the obstacles to Thailand's progress. Thailand has spent tremendous amount of money to purchase drugs and pharmaceutical technologies from foreign countries (Sapjaroen, 1994a; Tanwaranchorn, 1995). Consequently, campaigns to encourage people to protect themselves from diseases can help solve these problems. Thai traditional medicine and indigenous knowledge which are nature-based and

self-sustainable are ways of preliminary health care. Thai traditional medicine theory (TTMT) explains that diseases are caused by irregular eating times, improper diet to individual elements, eating too much or too little and unhygienic food. TTMT should be considered to change the food consumption behavior to suit the body's needs and avoid the prohi-bited foods (foods that cause illness). TTMT can help balance the body's individual elements and result in good health. Indigenous knowledge from long tradition and experiences can help promote a better quality of life and increase prosperity of the country. (Sapjaroen, 1944b).

### OBJECTIVE

The objective of this work was to study the relationship between the prohibited foods and Thai traditional medicine (TTM) and to compare the TTMT and non-TTMT food consumption to the diseases caused. Rationale and conceptual framework : the hypothesis is that human health results from the state of body elements (genetic constituency), age, climate, location, behavior, life style and individual elements. TTMT means the philosophy, knowledge and regimens in health care and disease cure. Thai traditional medicine therapy has been accumulated from centuries of experience with innovation, development and transfer of knowledge. The therapy is based on science, religion and spiritual beliefs. The results will show the relationship between prohibited foods and Thai traditional medicine to provide more healthcare guidelines. The use of Thai traditional medicine can help reduce the budget spent for Thailand's healthcare. In addition, the results can be used as baseline data for further research.

### METHODOLOGY

Questionnaires were received from 257 people and the data were analyzed statistically. The questionnaires were divided into 3 parts : 1) personal data, to identify the individual elements, age and residence, 2) health profile, which was used to identify food consumption behavior, diseases and climate and 3) concepts and attitudes towards Thai traditional medicine and illness-curing procedures. The relationship of prohibited foods and Thai traditional medicine and a comparison of TTMT and non-TTMT food consumption on the disease occurrence were studied. The data were analyzed by statistical methods (Pisarnboot, 1987).

### RESULTS, DISCUSSION AND CONCLUSION

#### • Results of the attitudes towards the Thai traditional medicine

- |   |             |
|---|-------------|
| 1. People who know Thai traditional medicine                | 214 (83.3%) |
| 2. People who do not know Thai traditional medicine         | 29 (11.3%)  |
| 3. People who are uncertain about Thai traditional medicine | 13 (5.1%)   |

**Table 1.** Frequency of attitudes towards traditional medication pattern in the sample group.

<b>Traditional medication pattern</b>	<b>Number of People</b>	<b>Percentage (%)</b>	<b>Note</b>
Body massage	179	69.6	
Herbal compress	201	58.9	
Spiritual power	21	11.7	
Herbal medicine	244	82.1	
Other	7	3.0	Hermit practice, yoga, diet for individual element, organic food

**Table 2.** Attitudes towards the role of traditional medicine to health in the sample group.

<b>Role to health</b>	<b>Number of people</b>	<b>Percentage (%)</b>	<b>Note</b>
No effect	2	0.8	
Illness prevention	99	38.5	
Illness cure	174	67.7	
Illness relief	211	82.1	
Mental support	140	54.5	
Other	2	0.8	Unspecified

**Table 3.** Attitudes towards the role of diet to the occurrence of illness in the sample group.

<b>Role of diet</b>	<b>Number of people</b>	<b>Percentage (%)</b>	<b>Note</b>
No effect	3	1.2	
Medium effect	139	54.1	
High effect	105	40.9	
Other	5	1.9	depends on diet and illness

The people who considered the role of diet and illness explained that diet is important in terms of sources of body metabolism and other processes which influence good health. Consequently, diet has an indirect effect to illness.

Others disagreed, but did not provide reasons why diet has no effect on illness.

**Table 4.** Attitudes towards the causes of illness in the sample group.

Cause of illness	Number of people	Percentage (%)	Note
Karma and fate	2	4.7	
Disease	215	83.7	
Diet	143	35.0	
Weakness	143	55.6	
Other	9	3.5	Heredity, behavior

The sample group mostly considered that disease is the main cause of illness and has indirect influences from diet and health condition that destroys the body balance of health.

The people who thought karma and fate, and behavior and heredity caused illness were not certain of the real causes of illness.

**Table 5.** Medicinal therapies that were chosen in the sample group.

Rank	A	B	C	D	E	F	G	H	I
0	3.5	11.3	17.1	14.0	35.8	37.4	17.1	43.6	91.1
1	70.8	6.2	3.5	21.4	1.6	0.8	14.0	0.8	2.7
2	7.8	35.8	11.7	15.2	0.4	0.4	8.0	2.4	0.8
3	7.8	23.7	30.7	12.8		0.4	8.9	0.8	0.8
4	1.6	16.3	20.6	24.9	1.6	2.7	10.9		
5	0.4	5.4	13.6	8.2	12.5	7.8	21.4	0.4	
6	0.4	1.2	1.6	0.8	30.0	21.8	5.4	1.2	
7			0.8	2.3	16.0	26.8	13.6	1.2	
8			0.4	0.4	2.3	1.6	0.4	49.4	0.4
9						0.4		2.3	4.7

**A:** Modern drugs

**B:** Traditional medicine

**C:** Herbal medicine

**D:** Diet

**E:** Body massages

**F:** Acupuncture

**G:** Moral support

**H:** Prayer, hypnosis and spiritual power

**I:** Other

Empty cell means no score.

Table 5 shows that the sample group chose modern drugs to treat and cure illnesses more than other therapies.

#### • Results of the relationship between illnesses and the Thai traditional medicine theory (TTMT).

The sample group either believed or rejected the Thai traditional medicine theory (TTMT).

The individual's birth elements have 4 main components which include 18 characters, based on the Thai traditional medicine theory (TTMT) (appendix D of complete report)

1. The birth element is **earth** if the characters are: 1, 15,16,17,18
2. The birth element is **fire** if the characters are: 2, 3, 4, 5
3. The birth element is **air** if the characters are: 6, 7, 8, 9, 10
4. The birth element is **water** if the characters are: 11, 12, 13, 14

This study mainly focused on the relationship between food consumption and the characters of individual elements. The data are based on food tastes. The tastes are **bitter-sour, sweet, nutty, salty, sour, bitter, poison-like, blended, hot and spicy, cool and insipid**. The data were analyzed (weighted and graded) by choosing the tastes that the sample group consumed at the highest percentage for each individual element based on TTMT (appendix D of complete report).

**Table 6.** Food taste presented in each character of individual elements.

Character number	Food taste	Character Number	Food taste
1	nutty	10	salty
2	sweet, nutty	11	blended
3	hot and spicy	12	insipid, bitter
4	bitter-sour, sour	13	poison-like
5	sour	14	poison-like, insipid
6	nutty, hot and spicy, blended	15	sour
7	insipid	16	bitter
8	blended	17	sweet
9	blended	18	hot and spicy

**Table 7.** Relationship between food tastes and appropriate tastes for each individual element character based on TTMT.

/ - the taste intake was suitable with the individual element.

X - the taste intake was not suitable with the individual element.

Character number	Food taste	Appropriate taste	Suitable for TTMT
1	nutty	bitter-sour, sweet, nutty, salty	/
2	sweet, nutty	insipid	X
3	hot and spicy	insipid	X
4	bitter-sour, sour	bitter	/
5	sour	insipid	X
6	nutty, spicy, blended	blended, hot and spicy	/
7	insipid	blended, hot and spicy	X
8	blended	blended, hot and spicy	/
9	blended	blended, hot and spicy	/
10	salty	blended, hot and spicy	X
11	blended	sour, bitter, poison-like	X

Character number	Food taste	Appropriate taste	Suitable for TTMT
12	insipid, bitter	sour, bitter, poison-like	X
13	poison-like	sour, bitter, poison-like	/
14	poison-like, insipid	sour, bitter, poison-like	/
15	sour	bitter-sour, sweet, nutty, salty	X
16	bitter	bitter-sour, sweet, nutty, salty	X
17	sweet	bitter-sour, sweet, nutty, salty	/
18	hot and spicy	bitter-sour, sweet, nutty, salty	X

The relationship between **illness** and the individual element characters was studied. After analysis of data (appendix C of complete report), each character represented the **highest score** of illness as shown in Table 8.

**Table 8.** Relationship between illness and the individual element character number.

Character Number	Affected system	Character Number	Affected system
1	muscle and bone	10	nerve, bone, muscle, lymph
2	nerve, skin, lymph, bone	11	skin
3	lymph	12	bone
4	respiratory	13	digestive
5	skin	14	respiratory
6	bone	15	respiratory
7	lymph	16	muscle
8	skin	17	heart and vessel
9	digestive	18	digestive

**Note:** Appendix D (in complete report) has more details in the characters of the individual element.

The data were analyzed by comparing the illnesses that occurred and the anticipated illness for each individual element based on TTMT

**Table 9.** Relationship between illnesses that occurred and the anticipated illness present in each character of individual elements based on TTMT.

/ - The relationship matched the individual element.

X - The relationship did not match with the individual element.

Character number	Affected system	Theoretical system	Match with TTMT
1	muscle and bone	muscle, skin, bone	/
2	nerve, skin, lymph, bone	digestive	X
3	lymph	digestive	X
4	respiratory	digestive	X
5	skin	digestive	X
6	bone	heart, vessel, nerve	X
7	lymph	heart, vessel, nerve	X
8	skin	heart, vessel, nerve	X
9	digestive	heart, vessel, nerve	X
10	nerve, bone, muscle, lymph	heart, vessel, nerve	X
11	skin	respiratory, lymph, urinary	X
12	bone	respiratory, lymph, urinary	X
13	digestive	respiratory, lymph, urinary	X
14	respiratory	respiratory, lymph, urinary	/
15	respiratory	bone, skin, muscle	X
16	muscle	bone, skin, muscle	/
17	heart, urinary	bone, skin, muscle	X
18	digestive	bone, skin, muscle	X

**Note:** Appendix D (in complete report) has more details in the characters of the individual element.

The pharmacognosy handbook reported that illnesses are related to the individual element. These individual elements imply the weakness for each element. Proper food consumption can protect each individual from being ill.

**Table 10.** Relationship between proper diet and expected illnesses occurring in each individual element character based on TTMT in the sample group.

/ - The relationship matched the individual element.

X - The relationship did not match the individual element.

Character number	Proper diet	Theoretical illness	Matched to TTMT
1	/	X	X
2	X	/	X
3	X	/	X
4	/	/	/
5	X	/	X
6	/	/	/
7	X	/	X
8	/	/	/

Character number	Proper diet	Theoretical illness	Matched to TTMT
9	/	/	/
10	X	/	X
11	X	/	X
12	X	/	X
13	/	/	/
14	/	X	X
15	X	/	X
16	X	X	X
17	/	/	/
18	X	/	X

**Note:** See more details of the characters of individual elements in appendix D of complete report

X in column 2 : an improper diet with the individual element

/ in column 2 : a proper diet with the individual element

X in column 3 : illness did not match with the individual element

/ in column 3 : illness matched with the individual element

X in column 4 : who do not follow the TTMT.

/ in column 4 : who do follow the TTMT.

Table 10 shows that character numbers 4, 6, 8, 9, 13 and 17 have relationships between diet and individual elements based on TTMT. Character numbers 1, 2, 3, 5, 7, 10, 11, 12, 14, 15, 16 and 18 present no relationship.

This is summarized as:

TTMT proved results =  $(92/257) \times 100 = 35.79\%$

TTMT unproven results =  $(165/257) \times 100 = 64.20\%$

TTMT also explains that individual elements affect seasonal illnesses.

**Table 11.** Percentage of the sample group that had seasonal illnesses based on the individual elements character number (appendix E of complete report).

Character number	Season (%)			
	Hot	Rainy	Cool	Uncertain
1	27.8	38.9	22.2	11.1
2	21.4	42.9	14.3	21.4
3	20.0	50.0	10.0	20.0
4	17.6	47.1	11.8	23.5
5	-	40.0	-	60.0
6	31.3	31.3	25.0	12.5
7	15.0	50.0	15.0	20.0
8	27.3	63.6	9.1	-
9	18.2	36.4	45.5	-

Character number	Season (%)			
	Hot	Rainy	Cool	Uncertain
11	50.0	50.0	-	-
12	20.0	-	20.0	60.0
13	20.0	30.0	40.0	10.0
14	25.0	25.0	37.5	12.5
15	13.3	53.3	26.7	6.7
16	30.0	60.0	10.0	-
17	25.0	37.5	12.5	25.0
18	12.5	50.5	12.5	25.0

The percentage of each character was calculated from 18 people as 100%. The people who were ill in the cool season was 5 (27.8%), hot season 7 (38.9%) and rainy season 4 (22.2%).

The results were determined by the highest percentage of seasonal illness which occurred for each character and season.

**Table 12.** Relationship between individual elements character and seasonal illnesses based on TTMT in the sample group.

Season	Character number																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Hot	/	/	/	/	X	/	/	/	X	/	/	X	X	X	/	/	/	/
Rainy	X	X	X	X	X	X	X	X	/	X	X	X	/	/	X	X	X	X
Cool	X	X	X	X	X	/	X	X	X	/	X	X	X	X	X	X	X	X
Uncertain	X	X	X	X	/	X	X	X	X	/	X	/	X	X	X	X	X	X

**Note:** See more details of individual elements character in appendix D of complete report  
 X : who did not get ill.  
 / : who got ill.

According to TTMT, seasonal illness occurrence results from the character number of the individual elements. **The fire element** (character number 2, 3, 4, 5) usually has illness in the hot season. **The water element** (11, 12, 13, 14) usually has illness in the cool season. **The air element** (6, 7, 8, 9, 10) usually has illness in rainy season. And **the earth element** (1, 15, 16, 17, 18) usually has illness at uncertain time which does not depend on season.

The data were analyzed and compared with the **illnesses that occurred** and the theoretical illness for each season for each individual element based on TTMT.

**Table 13. Comparison between seasonal illness occurrence and the theoretical seasonal illnesses** for each individual element character based on TTMT in the sample group.

Character number	Season of illness	Theoretical season of illnesses	Matched to TTMT
1	hot	uncertain	X
2	hot	hot	/
3	hot	hot	/
4	hot	hot	X/
5	uncertain	hot	X
6	hot, cool	rainy	X
7	cool	rainy	X
8	cool season, hot season	rainy	X
9	rainy	rainy	/
10	cool, hot, uncertain	rainy	X
11	cool, hot	cool	/
12	uncertain	cool	X
13	rainy	cool	X
14	rainy	cool	X
15	rainy	uncertain	X
16	hot	uncertain	X
17	hot	uncertain	X
18	hot	uncertain	X

**Note:** See more details of individual elements character in appendix D of complete report  
 / - seasonal illness occurrence matches with TTMT  
 X - seasonal illness occurrence did not match with TTMT

Proper diet followed by TTMT can protect each individual from being ill in each season.

**Table 14. Relationship between proper diet and seasonal illnesses** for each birth individual elements character based on TTMT in the sample group.

Character number	Proper diet	Seasonal illness occurrence	Matched to TTMT
1	/	/	/
2	X	X	X
3	X	X	X
4	/	X	X
5	X	/	/
6	/	/	/

Character number	Proper diet	Seasonal illness occurrence	Matched to TTMT
7	X	/	X
8	/	/	/
9	/	X	X
10	X	/	X
11	X	X	X
12	X	/	X
13	/	/	/
14	/	/	/
15	X	/	X
16	X	/	X
17	/	/	/
18	X	/	X

**Note:** See more details of individual element character in appendix D of complete report  
 X in column 2 : an improper diet for the individual element  
 / in column 2 : a proper diet for the individual element  
 X in column 3 : seasonal illness occurrence  
 / in column 3 : no seasonal illness occurrence  
 X in column 4 : who did not follow the TTMT  
 / in column 4 : who followed TTMT

Tables above show that character 6, 8, 13, 14 and 17 have a relationship between proper diet and seasonal illness occurrence based on TTMT. Character 1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 15, 16 and 18 show no relationship.

This is summarized as:

$$\begin{aligned} \text{TTMT proved results} &= (65/257) \times 100 = 25.29\% \\ \text{TTMT unproven results} &= (192/257) \times 100 = 74.71\% \end{aligned}$$

TTMT also explains that individual elements affected the time of illness occurrence. Calculations were done by including the percentages of all 18 characters. For example, criterion 1 for diurnal

$$\begin{aligned} \text{Samples of 15 people} &= 100\% \\ \text{Time of illness occurrence is 06.01-9.00} &= 0 = 0\% \\ \text{Time of illness occurrence is 09.01-12.00} &= 1 = 6.7\% \\ \text{Time of illness occurrence is 12.01-15.00} &= 1 = 6.7\% \\ \text{Time of illness occurrence is 15.01-18.00} &= 1 = 6.7\% \\ \text{Time of illness occurrence is uncertain} &= 12 = 80\% \end{aligned}$$

**Table 15.** Percentage of the sample group that had diurnal illnesses based on the individual element character.

Character number	06.01-9.00	09.01-12.00	12.01-15.00	15.01-18.00	Uncertain
1	0	6.7	6.7	6.7	80.0
2	7.7	0	15.4	0	76.9
3	11.1	0	0	0	88.9
4	0	0	7.1	7.1	85.7
5	0	0	0	20.0	80.0
6	28.6	0	0	7.1	64.3
7	5.6	5.6	5.6	5.6	77.8
8	0	0	0	10.0	90.0
9	0	10.0	10.0	10.0	80.0
10	14.3	14.3	0	0	71.4
11	16.7	0	0	0	83.3
12	40.0	0	0	0	60.0
13	0	0	0	10.0	90.0
14	0	0	0	25.0	75.0
15	0	6.7	13.3	6.7	73.3
16	0	12.5	12.5	12.5	62.5
17	0	0	0	0	100.0
18	0	20.0	0	0	80.0

Proper food consumption for each individual element can help in body balance for each individual to prevent illness occurrence based on TTMT.

**Table 16.** Percentage of the sample group that had nocturnal illnesses based on the individual element character.

Character number	18.01-21.00	21.01-24.00	00.01-03.00	03.01-06.00	Uncertain
1	9.1	0	0	0	90.9
2	9.1	18.2	9.1	0	63.6
3	0	14.3	14.3	0	71.4
4	25.0	6.3	0	0	68.8
5	33.3	0	0	0	66.7
6	9.1	18.2	0	0	72.7
7	7.1	0	7.1	7.1	78.6
8	10.0	20.0	0	0	70.0
9	0	0	0	10.0	90.0
10	0	20.0	0	0	80.0
11	0	25.0	0	0	75.5

Character number	18.01-21.00	21.01-24.00	00.01-03.00	03.01-06.00	Uncertain
12	0	33.3	0	0	66.7
13	12.5	0	0	0	87.5
14	28.6	14.3	0	0	57.1
15	0	8.3	0	8.3	83.3
16	0	33.3	0	16.7	50.0
17	0	25.0	0	25.0	50.0
18	14.3	42.9	0	0	42.9

**Note:** See more details of individual element character in appendix D of complete report

Illnesses are related to the birth individual elements. The proper food consumption for each individual element can help protect each individual from being ill at certain time based on TTMT.

The data were analyzed by comparing the percentages of time of illness occurrence and the theoretical time of illness for each individual element based on TTMT.

**Table 17.** Relationship between actual time and the theoretical time of diurnal illness occurrence for each individual element character based on TTMT in the sample group.

Character number	Time of illness	Theoretical time of illness occurrence	Matched to TTMT
1	uncertain	Uncertain	/
2	uncertain	09.01-12.00	X
3	uncertain	09.01-12.00	X
4	uncertain	09.01-12.00	X
5	uncertain	12.01-18.00	X
6	uncertain	12.01-18.00	X
7	uncertain	12.01-18.00	X
8	uncertain	12.01-18.00	X
9	uncertain	12.01-18.00	X
10	uncertain	12.01-18.00	X
11	uncertain	06.01-09.00	X
12	uncertain	06.01-09.00	X
13	uncertain	06.01-09.00	X
14	uncertain	06.01-09.00	X
15	uncertain	uncertain	/
16	uncertain	uncertain	/

Character number	Time of illness	Theoretical time of illness occurrence	Matched to TTMT
17	uncertain	uncertain	/
18	uncertain	uncertain	/

**Note:** See more details of individual element character in appendix D of complete report  
 X : who does not match with the theoretical time of illness occurrence in TTMT.  
 / : who matches with the theoretical time of illness occurrence in TTMT.

**Table 18.** Relationship between the actual time and theoretical time of nocturnal illness for each individual element character based on TTMT in the sample group.

Character number	Time of illness	Theoretical time of illness occurrence	Matched to TTMT
1	uncertain	uncertain	/
2	uncertain	21.01-24.00	X
3	uncertain	21.01-24.00	X
4	uncertain	21.01-24.00	X
5	uncertain	21.01-24.00	X
6	uncertain	00.01-06.00	X
7	uncertain	00.01-06.00	X
8	uncertain	00.01-06.00	X
9	uncertain	00.01-06.00	X
10	uncertain	00.01-06.00	X
11	uncertain	18.01-21.00	X
12	uncertain	18.01-21.00	X
13	uncertain	18.01-21.00	X
14	uncertain	18.01-21.00	X
15	uncertain	uncertain	/
16	uncertain	uncertain	/
17	uncertain	uncertain	/
18	uncertain, 21.01-24.00	uncertain	/

**Note:** See more details of individual element character in appendix D of complete report  
 X : who does not match with the theoretical time of illness occurrence in TTMT.  
 / : who matches with the theoretical time of illness occurrence in TTMT.

**Table 19.** Relationship between proper diet and time of diurnal illness for each of individual element character based on TTMT in the sample group.

Character number	Proper diet	Theoretical time of illness occurrence	Both matched with TTMT
1	/	X	X
2	/	X	X
3	X	X	X
4	/	/	/
5	X	X	X
6	/	/	/
7	X	X	X
8	/	/	/
9	/	/	X
10	X	X	X
11	X	X	X
12	X	X	X
13	/	/	/
14	/	/	/
15	X	X	X
16	X	X	X
17	/	X	X
18	X	X	X

**Note:** See more details of individual element character in appendix D of complete report  
 X in column 2 : an improper diet for the individual element  
 / in column 2 : a proper diet for the individual element  
 X in column 3 : the time of illness occurrence does not match with TTMT.  
 / in column 3 : the time of illness occurrence matches with TTMT.  
 X in column 4 : no relationship between diet and illness by TTMT.  
 / in column 4 : a relationship between diet and illness by TTMT

Tables 15-19 show that characters 4, 6, 8, 9, 13 and 14 have a relationship between proper diet and time of illness occurrence based on TTMT. Characters 1, 2, 3, 5, 7, 10, 11, 12, 15, 16, 17 and 18 have no relationship.

This is summarized as:

$$\begin{aligned} \text{TTMT proved results} &= ((91/257) \times 100 = 35.41\% \\ \text{TTMT unproven results} &= (166/257) \times 100 = 64.59\% \end{aligned}$$

**Table 20.** Relationship between proper diet and time of nocturnal illness for each individual element character based on TTMT in the sample group.

Character number	Proper diet	Theoretical time of illness occurrence	Both matched with TTMT
1	/	X	X
2	X	/	X
3	X	/	X
4	/	/	/
5	X	/	X
6	/	/	/
7	X	/	X
8	/	/	/
9	/	/	/
10	X	/	X
11	X	/	X
12	X	/	X
13	/	/	/
14	/	/	/
15	X	X	X
16	X	X	X
17	/	X	X
18	X	X	X

**Note:** See more details of individual element character in appendix D of complete report  
 X in column 2 : an improper diet for the individual element  
 / in column 2 : a proper diet for the individual element  
 X in column 3 : the time of illness occurrence does not match with TTMT.  
 / in column 3 : the time of illness occurrence matches with TTMT.  
 X in column 4 : no relationship between diet and illness by TTMT.  
 / in column 4 : a relationship between diet and illness by TTMT

Table 20 shows that character 4, 6, 8, 9, 13 and 14 have a relationship between proper diet and nocturnal illness occurrence based on TTMT. Characters 1, 2, 3, 5, 7, 10, 11, 12, 15, 16, 17 and 18 have no relationship.

This is summarized as:

$$\begin{aligned} \text{TTMT proved results} &= ((91/257) \times 100) = 35.41\% \\ \text{TTMT unproven results} &= (166/257) \times 100 = 64.59\% \end{aligned}$$

The results showed that 35.80% of the people sampled considered that TTMT and the relationship between the individual elements of each person and food consumption resulted in good health. Individual elements are metaphysical principles: 1) people born under *the earth element*, appropriate foods to consume are those which are *bitter-sour, sweet, nutty and salty taste* which help bone, skin and

muscular systems, 2) people born under *the fire element*, appropriate foods are insipid which help the digestive system, 3) people born under the air element, appropriate foods to consume are those which are *bitter and hot taste*, which help the heart and blood vessels and 4) people born under *the water element*, appropriate foods to consume are those which are *sour, bitter and poison-like taste*, which help the respiratory, lymphatic and urinary systems. 64.20% of the people sampled did not consider TTMT and showed no relationship between individual elements and food consumption. The reason is these people ignored their individual elements because of rushed life style and stress with pressure and high competitiveness. Furthermore, economic and social problems have caused changes in food consumption behavior. Nowadays, people consume foods in convenient styles without considering their individual elements. This factor may cause illness or disease. Illnesses can also be caused by other factors.

According to the relationship between *food consumption with the individual elements and diseases season born*, 25.29% of the people sampled considered TTMT and relationship. Food consumption with consideration to the individual elements resulted in no illness in different seasons as follow : 1) *fire element*, appropriate foods are *insipid* which give body strength in summer and other seasons, 2) *air element*, appropriate foods are *bitter and hot taste* which give strength in the rainy and other seasons, 3) *water element*, appropriate foods are *sour, bitter and poison-like taste* which give strength in cool and other seasons and 4) *earth element*, appropriate foods are *bitter-sour, sweet, nutty and salty taste* which give strength in all seasons. 74.71% of the people sampled did not consider TTMT and believed there was no relationship between food consumption with individual elements and diseases season born. The environment and climate change unexpectedly, high-competitiveness life styles, stress, lack of exercise and poor health care also cause illnesses in all seasons, apart from prohibited food consumption. In addition, 35-41% people believed in relationship between *food consumption on individual elements and time of disease occurrences*. Food consumption linked with consideration of individual elements resulted in illness in different occurrences as follow : 1) *fire element*, which gives strength between 9.0-12.00 am and 21.0-24.00 pm, 2) *air element*, 12.0-18.00 pm and 00.0-06.00 am, 3) *earth element*, 06.0-09.00 am and 18.0-21.00 pm and 4) *water element*, 06.0-09.00 am and 18.0-21.00 pm. Nevertheless, 64.59% of the people sampled did not consider TTMT. The poor health care, highly-competitive life styles, work stress, incomplete rest and irregular meals also cause illness at all times. The attitudes towards food consumption to occurrences of illness of the people sampled are as follow : 54.1% believed some relationship and 40.9% found strong relationship between food consumption and illness. The main reason for these attitudes above is that you are what you eat to build up and restore health, and food is used in many ways in human. In addition, the Thai traditional medicine theory (TTMT) also considers food to be important to health care. The people sampled have positive thinking towards TTMT and believe that Thai traditional medicine has an important role in prevention, relief, cure and mental balance to treat illnesses. Most people did not follow the principles of their own individual elements in

correlation with TTMT. The study showed that western medicine is believed to be the most convincing therapy due to fast cures.

There were no significant differences among food and individual elements. Health status is controlled by genes and also by the environment. The latter includes physical and mental condition, hygiene foods and drinks, pollution and life style. Occupation, economic wealth and social status, while industrialization have led to stress and competitiveness, all result in health problems. Most people do not pay attention to the role of food consumption and health. Behavior changes resulting from new trends in beliefs, attitudes and fashion cause illnesses. TTMT is still very important to good health and should be recommended. The individual elements control each individual and affect human health. The four elements are described below.

1. People born under *the earth element* are mostly well-built and have strong figure, dark skin and clear voice and gains weight easily. Appropriate foods (*bitter-sour; sweet, nutty and salted*) are bitter-sour sesbania and guava which help cure dysentery and diarrhea; sweet papaya helps constipation; cooling-sweet bananas help moist the lungs; sweet melons help to lower fevers and urination; sweet-sour pineapple helps urination and digestion; sweet-nutty taro contains proteins and minerals; sweet-nutty guards help relieve fever and eye irritations; cooling-sweet lettuces help miscarriages and blood vomiting; cooling-sweet screw pine helps the heart and body tonics; nutty green beans help urination, muscle and bone formation; sweet-nutty pumpkin contains high vitamin A for better vision; and salted green onions help colds and catarrh. The recommended menus are lettuce sour curry, winged beans salad, water mimosa sour curry, taro jam, yam in coconut milk and guava smoothies.

2. People born under *the water element* mostly have clear voice but are slow, boring and have low motivation, lack enthusiasm, little appetite, low sweat excretion, high sexual desire, high fecundity, strong movement, perfect figure, oily and good complexion and healthy hair. Appropriate foods are *sour* which include sour tamarind to help constipation and blood tonic; sour oranges help the skin and constipation; cooling-sour pomelos help reduce phlegm, coughs and digestion; sweet-sour mandarin oranges help moist the lungs, reduce cough and phlegm. The recommended menus are pomelo salad, steamed bass with lime, morning glory with tomato sour curry, sardines with young tamarind salad, crispy fish with young tamarind hot and sour curry, pineapple soup, pineapple juice and tomato juice.

3. People born under *the air element* mostly have soft and low voice, are uncoordinated, no rhythm with talk unclear and are envious, sensitive, have free love with uncertain mind, easy anger, fearful, irresistible to coldness, uncertain food consumption, low fecundity, slim figure with wavy movements, inflexible joints and rough complexion. Appropriate foods are *bitter and hot*, which include bitter-hot ginger for toothaches, flatulence, ringworms and rashes; hot celery helps colds, sweating, and digestion; sweet-hot basil helps reduce measles, headaches, toothaches and insect bites; hot pepper helps flatulence. The recommended menus are chopped catfish deep fried with garlic, fried hot basil, roasted pork salad, savory

wrapped hors d'oeuvre, fried bass with green onions, fried snaked-head fish with celery, lemongrass chili paste, pork wrapped in leaves, fried chicken with ginger, fried shrimp with sweet basil, northern Thai style minced pork with fennel, fried liver with celery, mackerel sour curry and ginger juice.

4. People born under *the fire element* mostly have low patience, are brave, ardent, irresistible to heat, have high appetite, high water needs, high sweating and urination, body and breath odor, low sexual desire, soft muscles and bones, poor complexion and soft hair that tends to fall out. Appropriate foods are *bitter, cool and insipid*, which include cassia for sleeping disorders; bitter centella as a body tonic and wound recovery; bitter-sweet luffa for gout, fever, phlegm and cough relief; bitter-cool momordica for fever relief and thirst quencher; bitter-insipid eggplant to reduce phlegm, cough; cooling-sweet screw pine for heart trouble and a tonic and cooling-sweet lettuces for miscarriages. The recommended menus are cassia curry, momordica with lettuce soup, eggplant hot curry and centella with screw pine juice.

Consequently, the overall results showed no relationship to TTMT which is because of tremendous changes in life styles from past to present. TTMT which studies illnesses and environmental factors have to be considered. Future studies should consider on larger samples and uncontrollable factors, e.g., age and occupation to understand more about the effects of outside factors on the relationship of prohibited foods and TTMT more precisely.

#### ACKNOWLEDGEMENTS

This research was supported by a grant from the Faculty of Pharmacy, Chiang Mai University.

#### REFERENCES

- Pisarnboot, S. 1987. Statistics for analyses and researches. 1<sup>st</sup> edition. Academic Promotion Center, Bangkok. (in Thai)
- Sapjaroen, P. 1994a. Report of training in Thai traditional medicine and medicinal plants : Traditional Pharmaceutical Subjects. Royal Thai Veterans. Prajeen Buri. 19-43. (in Thai)
- Sapjaroen, P. 1994b. Theory book of Thai traditional medicine (I) Pharmacognosy Bible. 1<sup>st</sup> edition. Royal Thai veterans, Bangkok. (in Thai)
- Tanwaranchorn, S. 1995. Seminar on Thai traditional medicine and Thai society. Decades of Thai traditional medicine project. Ro So Cho Publishing, Bangkok. 72-123 pp. (in Thai).

**none**