

FOOD CONTENT ANALYSIS IN MOH-CHAO-BAAN MAGAZINE

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ABSTRACT

This documentary research is a food content analysis of Moh-Chao-Baan magazine, which is a well-known health magazine in Thailand. Its objectives are to study food content, content format presentation, and health communication objectives. This study uses the analysis of fifty-one items, showing food content in twelve editions of Moh-Chao-Baan magazine—Issue 288 to Issue 299—and the interview with the managing editor of Moh-Chao-Baan magazine.

Firstly, the study of food content disclosed that consumer eating and drinking topic is presented more than other topics—food preparation, food selection, and food storage. Overall, the production team of Moh-Chao-Baan magazine gives advice on consumer food behavior—food safety; whole food; healthy and nutritious food choices; the right sorts of food; variety of foods; balanced diet; and medicinal food. Secondly, the study of content format presentation revealed that most contents are illustrated. Three format presentations—illustrated articles; illustrated and unillustrated news; and illustrated and unillustrated letters—are found during this study. Illustrated articles are the most popular content format. Finally, the study of health communication objectives unfolded that the important objectives during this study are disease prevention, health promotion, treatment, and rehabilitation, respectively.

This content analysis presented that most of results in this study correspond with relevant concepts and research's results. In addition, Moh-Chao-Baan has a role in food safety communication because the food safety advice found during this study is when a Food Safety Campaign is in operation. Three effective ways of communication found during this study are credibility, clarity, and continuity.

The study of the overall communication process is an interesting issue because the outcome of this study shows positive and negative factors in the communication process. The results encourage the development of an effective communication process in media.

KEY WORDS: CONTENT ANALYSIS/ FOOD BEHAVIOR/ MOH-CHAO-BAAN MAGAZINE

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การวิเคราะห์เนื้อหาด้านอาหารในนิตยสารหมอชาวบ้าน (FOOD CONTENT ANALYSIS IN MOH-CHAO-BAAN MAGAZINE)

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บทคัดย่อ

การวิเคราะห์เนื้อหาด้านอาหารในนิตยสารหมอชาวบ้านมีวัตถุประสงค์เพื่อศึกษาเนื้อหา ด้านอาหาร รูปแบบการนำเสนอเนื้อหา และวัตถุประสงค์การสื่อสารสุขภาพ ศึกษาจากการวิเคราะห์ เนื้อหาด้านอาหารจำนวน 51 เรื่องในนิตยสารหมอชาวบ้าน 12 ฉบับ (ฉบับที่ 288 ถึง 299) และการ สัมภาษณ์บรรณาธิการนิตยสารหมอชาวบ้าน ผลการศึกษามีดังนี้

ประเด็นแรก พบว่า เนื้อหาเรื่องการกินอาหารของผู้บริโภคมากกว่าเนื้อหาเรื่องเตรียม อาหาร การเลือกซื้ออาหาร และการเก็บอาหาร คำแนะนำเกี่ยวกับการบริโภคอาหารของผู้บริโภคที่ พบในช่วงเวลาการศึกษา ได้แก่ อาหารปลอดภัย อาหารธรรมชาติ เลือกอาหารที่มีคุณค่าทาง โภชนาการและดีต่อสุขภาพ อาหารตามวัยและภาวะความเจ็บป่วย อาหารหลากหลาย อาหารสมดุล และอาหารเป็นยา ประเด็นถัดมา พบว่า เนื้อหาด้านอาหารส่วนใหญ่มีภาพประกอบ รูปแบบการ นำเสนอเนื้อหาที่พบในช่วงเวลาการศึกษา ได้แก่ รูปแบบบทความมีภาพประกอบ รูปแบบข่าวมี และไม่มีภาพประกอบ และรูปแบบจดหมายมีและไม่มีภาพประกอบ บทความมีภาพประกอบเป็น รูปแบบเนื้อหาที่นิยมมากที่สุด และประเด็นสุดท้าย พบว่า การป้องกันโรคเป็นวัตถุประสงค์การ สื่อสารสุขภาพที่สำคัญในช่วงเวลาการศึกษา รองลงมา ได้แก่ การสร้างเสริมสุขภาพ การรักษา สุขภาพ และการฟื้นฟูสุขภาพ ตามลำดับ

ผลการศึกษส่วนใหญ่สอดคล้องตามแนวคิด และงานวิจัยที่เกี่ยวข้อง นิตยสารหมอ บ้านมีบทบาทในการสื่อสารเรื่องอาหารปลอดภัย เพราะพบประเด็นเนื้อหาเรื่องอาหารปลอดภัย ในช่วงเวลาการศึกษาซึ่งอยู่ระหว่างการดำเนินงานรณรงค์โครงการอาหารปลอดภัย วิธีการสื่อสารที่ พบ ได้แก่ ความน่าเชื่อถือ ความชัดเจน และความสม่ำเสมอเนื่อง การศึกษากระบวนการสื่อสาร โดยภาพรวมเป็นอีกประเด็นที่น่าสนใจ เพราะแสดงให้เห็นจุดเด่น และจุดด้อยในกระบวนการ สื่อสาร และนำไปสู่การพัฒนากระบวนการสื่อสารที่มีประสิทธิภาพของสื่อต่อไป

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CHAPTER I

INTRODUCTION

1.1 Rationale

Food, what people eat or drink to maintain life, provides all the nutrition a human body needs. Five nutrients for growth are carbohydrate, protein, vitamins, minerals, and fat. Each nutrient has a different importance to the body. For example, carbohydrate in starch and sugar generates the energy, used in daily activities. Protein in meats, eggs, and peas builds up and repairs tissues. Vitamins and minerals in vegetables and fruits regulate metabolism. Fat in meat oil or vegetable oil keeps body temperature. In addition to five nutrients, water facilitates normal functions of the body. Both eating a balanced diet and drinking sufficient water produce good health.

Unlike a balanced diet, an unbalanced diet causes health problems. An example of health problems, caused by an unbalanced diet, is malnutrition. Consumers risk deficiency diseases when they eat insufficient food. Eating not enough seafood can cause iodine deficiency. Iodine deficiency causes the swelling of thyroid gland and the difficulty in swallowing and breathing. Another health problem is obesity. Obesity is one of Thai people's health problems, caused by an unbalanced diet. Suwit Wiboonponprasert et al. (2001-2004: 124) reported, according to the third survey in 1986 and the fourth survey in 1995 on food and nutrition in Thailand, the percentage of Thai people with obesity has increased for every age. Thai people of today, especially children still risk obesity. Furthermore, obese consumers risk hypertension, heart disease, and vascular disease as well. A way to prevent health problems, caused by an unbalanced diet is to pay attention to eating and drinking properly.

Not only eating and drinking properly is important but also food selection, food preparation, and food storage properly. According to World Health Organization

(<http://www.who.int/mediacentre/news/releases/2004/pr71/en/>: August 12, 2006), threats to the food consumers eat can come from many sources—primary production; improper handling and storage; improper preparation; and cooking in home or in other places where food is consumed. Also, food services without cleanliness standard cause food contamination. Food contamination is one of the problems, connected with consumer lifestyle. Thai consumers of today have faced with food contamination because their food behavior has changed in accordance with their lifestyle. Suwit Wiboonponprasert et al. (2001-2004: 122) revealed that Thai people both in urban and rural areas consume more ready-to-eat food or instant food because of rush lifestyle. Consumers can consume ready-to-eat food or instant food at the point of food services. The non-standard and unclean food, contaminated with chemicals and germs, causes health problems. For example, Borax—one of the chemical contaminants in meatballs and preserved fruits—is a danger to digestive system, whereas Aflatoxin in nuts creates cancer. To avoid food contaminants, consumers need accurate knowledge of food behavior.

In 2003, the Ministry of Public Health realized likewise consumer necessity to have food safety knowledge. For this reason, the Ministry began disseminating accurate knowledge of consumer food behavior to the public in Food Safety Campaign to develop consumer awareness. The Ministry of Public Health publicized in the website (http://elib.fda.moph.go.th/library/Planweb/Doc/totolsafe_46_47.pdf: August 12, 2006) that Food Safety Campaign was in operation from 1st April 2003 to 30th September 2004. The development of consumer awareness was one of the operational strategies in this campaign. The Ministry of Public Health used many ways to inform the public about accurate food behavior. A method was the public relation by mass media as Piriyaorn Waewjinda (2004) studied the public relation strategies and effectiveness of Food Safety Campaign, announced by Ministry of Public Health. She found that one of the principal strategies for public relations in Food Safety Campaign is mass media—television, newspapers and radio. Although this study of Piriyaorn Waewjinda (2004) has no information to support that magazines are mass media for public relations in Food Safety Campaign, I—the researcher—assume that the food content in magazines, especially in health magazines

is in tune with Food Safety Campaign. The reason is that Food Safety Campaign is an agenda in social trends and magazines present the content most in tune with social trends as well.

The survey of health magazines started in June 2004. Six bookstores—Dokya, Naiin, SE-ED Book Center, Asia Books, Bookazine, and B2S—are observed and studied. The survey disclosed that there are fifteen health magazines, sold in these bookstores. Four out of fifteen health magazines—Klai-Moh, Mae-Lae-Dek, Moh-Chao-Baan, and Ruk-Luke—are over twenty years. Moh-Chao-Baan magazine differs from other health magazines in that its objective is for public benefit. The production team of Moh-Chao-Baan magazine focuses on health information or knowledge dissemination to the public and does not take any wage. In addition to the creation of health information or knowledge, information in the website (http://www.doctor.or.th/zone_about/index.htm: August 12, 2006) indicated that the production team of Moh-Chao-Baan magazine promotes people self-care as well. Considering the data above, the production team of this health magazine gives regard to public benefit as a main issue. Moreover, the production team focuses self-care knowledge dissemination for the development of consumer awareness. This knowledge development is one of the operational strategies in Food Safety Campaign as well. As a result, the objective of Moh-Chao-Baan magazine and the operational strategy in Food Safety Campaign correspond. I—the researcher—assume that the content of Moh-Chao-Baan magazine during the period of Food Safety Campaign should show a food safety issue. Also, this health magazine should have a role in food safety communication during this campaign period.

1.2 Objectives

1.2.1 To study food content

1.2.2 To study content format presentation

1.2.3 To study health communication objectives

1.3 Benefits

Overall, the results of this study make readers known about accurate food behavior, content format presentation, and health communication objectives of Moh-Chao-Baan magazine. For good health, readers can follow accurate food behavior. In addition, the results of this study help the magazine production team to know his role in health communication and to develop effective communication. Finally, the results of this study are as a reference for relevant researches as well.

1.4 Terms of Reference

1.4.1 Food includes five food groups; medicinal vegetables or fruits; drinking water; aerated water; fruit juice; coffee or tea; milk; and alcoholic beverages. Sukhothai Thammathirat Open University, School of Home Economics (1988) pointed out that five food groups are as follows:

1) All meats such as buffalo meat, pork, beef, fowls, fish, and crustaceans; animal entrails such as liver, kidney, lung, and heart; eggs such as duck eggs, chicken eggs, bird eggs, and tortoise eggs; milk; peas such as peanut, soya beans, and red or green beans; products made from peas such as soya bean curd and soya paste.

2) Rice such as glutinous rice, and maize; all kinds of potatoes and taros; flour such as rice flour, glutinous rice flour, potato flour, and maize flour; flour products such as bread, a sponge cake, and noodles; all kinds of sugar such as cane sugar, coconut-palm sugar, and honey.

3) Green vegetables such as aquatic morning glory, cabbage, lettuce, parsley, young leaves of genus cassia, and sweet basil; vegetable flowers such as cauliflower; vegetable roots such as ginger, beet, and carrot; vegetable pods such as assorted peas; pumpkins; tomatoes; bitter melons; sponge gourds.

4) All sorts of local fruits such as bananas, ripe papayas, oranges, mangoes, guavas, tamarinds, pineapples, mangosteens, longans, jackfruits, durians, and custard apples.

5) Meat fat such as pig fat, cattle fat, fish fat, and shell fat; vegetable fat such as coconut-palm oil, sesame oil, peanut oil, rice-bran oil, lotus-seed oil, and coconut milk.

Furthermore, the article in the website (www.tigerdragon.in.th/thai%20herb-def.htm: August 12, 2006) disclosed that some types of food are herbs. Therefore, food includes medicinal vegetables or spices (for example, garlic, ginger, and lemongrass) and medicinal fruits (for example, prunes, pineapples, and bananas).

1.4.2 Food content includes consumer's eating and drinking, food preparation, food selection, and food storage.

1.4.3 Content format presentation is articles, news or letters. The content is or is not illustrated.

1.4.4 Articles are prose to transmit all information, facts, proof, experience, knowledge, and writer suggestions to readers.

1.4.5 News is a report on facts, interesting public information, new discoveries, and credible institution's suggestions. News reporters collect data and write concisely.

1.4.6 Letters are the question-answer content between magazine readers and health professionals.

1.4.7 Illustrations are photographs, drawings, and cartoons, referring to the content.

1.4.8 Health communication objectives include disease prevention, health promotion, treatment, and rehabilitation.

1.4.9 Disease prevention is suggestions on how to protect people against diseases or how to lower health risks.

1.4.10 Health promotion is health information about how to maintain good health.

1.4.11 Treatment is suggestions on a cure for diseases, and a decrease in risks of intervening diseases.

1.4.12 Rehabilitation is recovery of patients. Suggestions are about patient care after a cure for diseases, and how to restore to normal health as soon as possible.

1.5 Research Methodology

There are six steps in this content analysis as follows:

- 1) Review of literature and relevant researches
- 2) Selection of the representative sample of population and units of analysis
- 3) Data gathering
- 4) Creation of tools
- 5) Analysis
- 6) Conclusion

The details of each step will be restated in the third chapter, research methodology.

CHAPTER II

LITERATURE REVIEW

This study is the documentary research of food content in Moh-Chao-Baan magazine by using content analysis. This documentary research relates to food behavior and the health communication of mass media. Consequently, five concepts used in this study refer to communication, health communication, consumer guide to food sanitation, magazines, and content analysis, respectively. In addition to five concepts, there are six relevant researches on food behavior and the health communication of mass media. The following presentation is of the details of each relevant concept and research.

2.1 Communication Concepts

Communication is the process of transmitting and sharing information in a communication context. A pair of communication interprets information and creates the mutual understanding of meaning. The information may be distorted and incorrect when the communication process is disturbed by noise. Channels of communication are various. Mass media, the focus of this study, is one of the channels to communicate the information to the public. In this study, three concepts of communication concerning mass media are applied. They are the agenda setting, objectives of communication, and effective ways of communication. The next presentation is of the details of each concept.

2.1.1 Agenda setting

The agenda setting reflects the influence of mass media on the public. Mass media as a gatekeeper either report various issues or overlook some issues, whereas mass media as an agenda setter set issues or sustain the agenda as long as the mass media required. People perceive the agenda which get media attention. Also, they follow those issues. According to this concept, mass media has influence on public opinion. Mcquail Denis & Windahl Sven (1981: 62-63) described the agenda setting as amongst a given range of issues or topics. Those which get more media attention will grow in their familiarity and perceived importance over a period of time. On the other hand, those which get less will decline correspondingly as shown in the agenda setting model (diagram 1).

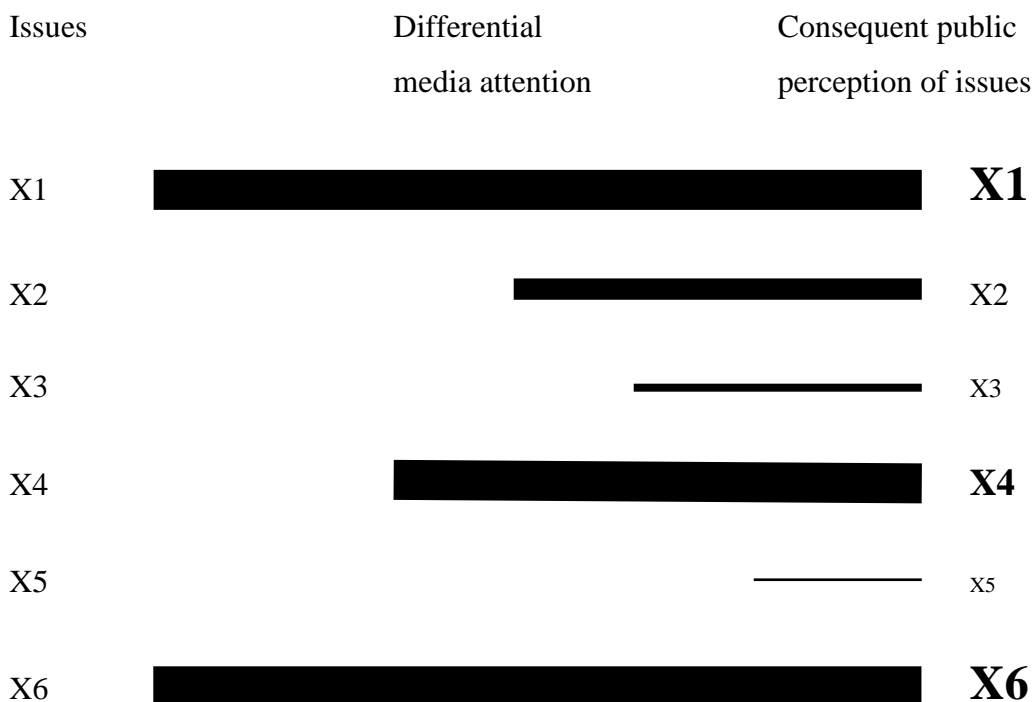


Diagram 1: Agenda setting model

Mcquail Denis & Windahl Sven (1981: 62-63) revealed that it should be possible to test this expectation by comparing the results of quantitative media content analysis with changes in public opinion as measured by surveys at two or more point in time. However, the detailed evidence from McCombs and Shaw’s research (1976)

has not always confirmed the existence of a powerful agenda-setting process. McCombs and Shaw (1976) report some confirmatory evidence, whereas others (e.g. McLeod et al. 1974) warn against an “uncritical acceptance of agenda-setting as a broad and unqualified media effect.”

2.1.2 Objectives of communication

As stated above, communication is the process of transmitting and sharing information between a sender and a receiver. The pair of communication in this study is mass media and a large anonymous number of receivers. In general, sender’s objectives of communication are diverse. This diversity causes different effects on their receiver. Patchanee Cheyjunya, Mettha Wiwattananukul, and Thiranan Anawatsiriwong (1998: 53-55) informed that communication whether with or without intention always creates effects of communication. Due to various objectives of communication, effects of communication are varied as shown in Table 1.

Table 1: Objectives and effects of communication

Objectives of communication	Effects of communication
To inform, to explain, and to educate	To get information or knowledge, and to understand the meaning
To persuade	To agree with sender opinion, and to change the attitude, belief, value and behavior of receivers
To inspire	To agree with sender opinion, and to admire
To entertain	To enjoy and to relax

Effects of communication are the cognitive or intellectual effect, the affective effect, and the behavioral effect. The communication causes either latent or manifest effects. Effects of communication may be long term or short term effects. In addition, these effects, the production of receiver’s interpretation, show how much the pair of

communication creates mutual understanding. If sender's objectives and effects of communication are compatible, the communication process will succeed.

2.1.3 Effective ways of communication

The communication process is a composite of a pair of communication; message; encoding and decoding process; communication noise; a channel of communication; communication context; effects of communication; and feedback. The more efficient communication elements are, the more successful the communication process is. To create effective communication tools, Wasana Junsawang (1990: 12-13) introduced seven ways as follows:

1) Credibility: the sender should be a reliable person. Also, messages are accurate in the receiver's point of view.

2) Content: The content should be the essential issue. Most contents should fit the opinion, belief, attitude, and value of receivers. As a result, receivers understand and follow the content.

3) Clarity: Messages should be explicit or not ambiguous, and easy.

4) Context: The content should fit space and time; culture; surroundings; and people.

5) Continuity and consistency: Although the continuous and consistent sending will remind receiver memories, the communicator should beware of the uninteresting and repetitive communication.

6) Channel: The medium should fit receivers and the communication context.

7) Capability of receivers: The sender should consider the cognitive, and physical or mental capability of receivers. The receiver capability will determine the mentioned six approaches. Without the realization on the receiver capability, the communicator can't designate proper channels and effective contents.

2.2 Health Communication Concepts

Many health academics have defined health communication. For example, World Health Organization (http://whqlibdoc.who.int/hq/1998/WHO_HPR_HEP_98.1.pdf: August 12, 2006) defines “health communication” as a key strategy to inform the public about health concerns and to maintain important health issues on the public agenda. The use of mass and multi media and other technological innovations to disseminate useful health information to the public, increases the awareness of specific aspects of individual and collective health as well as the importance of health in development.

Ratzan, S.C. (1994 in http://www.healthypeople.gov/document/HTML/Volume1/11HealthCom.htm#_ednref54: August 12, 2006) defines “health communication” as the art and technique of informing, influencing, and motivating individual, institutional, and public audiences about important health issues. The scope of health communication includes disease prevention, health promotion, health care policy, and the business of health care as well as enhancement of the quality of life and health of individuals within the community.

Wasana Junsawang (2005.: 31-32) defines “health communication” as the education and use of strategies to present health issues through media for arousing the receiver’s attention or awareness of health issues. The successful health communication, contributing to the development of health literacy, emphasizes the effective communication process according to objectives of communication—to inform, to educate, to entertain, and to persuade.

These definitions implied that health communication relates to many fields of health study (for example, health promotion, health education, and effective communication science). Effective ways of communication, the key to produce efficient communication tools, are essential to health communication. The successful health communication counts on many elements for effective communication.

2.2.1 Elements of health communication

Ratzan et al, (1994) referred to by Kamolrat Intaratat (no. date: 11-12) stated that health communication includes various actions, linked up mutually to respond to healthy state of different target receivers (social targets, group targets, and individual targets). The action on health communication often comprises the following elements.

1) Health education is activities which promote healthy behavior by informing and educating an individual through media and many activities

2) Social marketing, the communication for social movement, is activities on health promotion or the creation of health-enhancing behavior by reinforcing marketing strategies with mass media.

3) Advocacy is often activities of mass media to support policies, regulations, and many health promotion projects.

4) Risk communication is often health activities for a specific group which the communicator should consider circumstances and risk management strategies such as individual counseling.

5) Patient communication is health information concerning treatment, given to patients. The knowledge and understanding are given in many ways such as provider-patient communication, and peer-to-peer communication—the well-received means of communication.

6) The presentation of health information for consumers includes health insurance, disease prevention, and self-care. The health information for consumers helps persons to understand their self-health, and to make up their mind on their self-health and their family health.

7) New media include many communication technologies. The use of online media—internet websites—reinforces the old but popular communication—mass

communication and interpersonal communication—to thoroughly diffuse concepts and means of health communication.

2.2.2 Health promotion

Health promotion is an important objective of health communication. Many health academics offer definitions for this term. For instance, World Health Organization (http://whqlibdoc.who.int/hq/1998/WHO_HPR_HEP_98.1.pdf; August 12, 2006) defines “health promotion” as the process of enabling people to increase control over, and to improve their health.

The American Journal of Health promotion (1989: 3, 3, 5 in [http:// www.healthpromotionjournal.com](http://www.healthpromotionjournal.com); August 12, 2006) defines “health promotion” as “the science and art of helping people change their lifestyle to move toward a state of optimal health.” Optimal health is a balance of physical, emotional, social, spiritual, and intellectual health. Lifestyle changes can be facilitated through a combination of efforts to enhance awareness, change behavior and create environments that support good health practices. Of the three, supportive environments will probably have the greatest impact in producing lasting change.

Praves Vasee (2003: 50) defines “health promotion” as the promotion of all healthy aspects—individual, society, environment, and public health policy. Examples of health promotion are the following five topics, covering physical health, mental health, society, environment, and policies.

1) Healthy behavior is exercise, healthy eating, cessation of drugs, Drink Don't Drive, etc.

2) The mental health promotion is skill promotion for preventing or reducing tensions and encouraging healthy mind.

3) The healthy environment promotion is the preservation or promotion of healthy environment and the decrease in unhealthy environment.

4) The healthy social promotion within family, community, country, and at the global level is the creation of sufficiency economy, healthy environments, good learning, and good society. A good society is one with a respect for human dignity and the ability to solve conflicts in peace for the good of people in society.

5) Academics should take part in determining public policies for a healthy society because they have both positive and negative effects on society. The policies, determined by a powerful minority of people may have negative effects on the healthy state of the majority.

In addition to the mentioned definitions, Duangjai Rattanathanya (2002: 153) disclosed that health promotion, caused by healthy lifestyle has a role in health education; and social, political, economic or environmental support. Health promotion overlaps with health education, health prevention, and health protection. In consideration of the overlap among three actions, J. Thomas Butler (2001: 30-31) claimed that the relationship among the triad of health promotion should be viewed as interlocking spheres of activity. Diagram 2 shows three interlocking spheres and seven domains of each, according to Tannahill (1985).

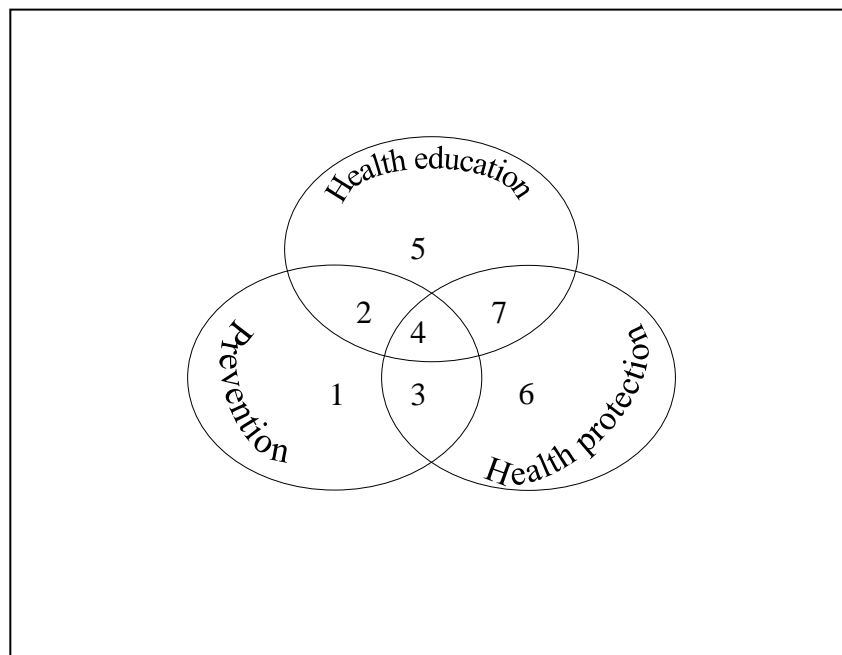


Diagram 2: Three interlocking spheres and seven domains

Numbered in Diagram 2, seven domains are as follows:

1) Prevention

This domain includes primary preventive measures such as immunization and exercise programs, and secondary preventive measures such as Pap smears, hypertension case-finding, and smoking cessation programs.

2) Lifestyle

This includes educational efforts to influence lifestyle to prevent health-related problems and to encourage the uptake of preventive services.

3) Preventive policies

This sphere represents preventive health protection, including fluoridation of public water supplies and inspections of restaurants. It can be viewed as a policy commitment to the provision of preventive services such as those described under the first domain.

4) Policy maker education

Given that health protection measures do not emerge spontaneously, the education of policy makers is important. An example of this is the lobbying by safety-conscious groups to encourage mandated use of automobile seat belts in the face of much public apathy. Efforts to stimulate a social environment that demands or accepts preventive health protection measures are also part of this domain (Downie, Tannahill, 1996), as is a policy commitment to preventive health education.

5) Health education

This domain comprises all aspects of positive health education, including influencing behavior by helping individuals, groups, or whole communities develop the positive health attributes such as life skills and self-esteem.

6) Health protection

This domain includes implementation of a workplace policy forbidding smoking, graduated driver licenses, and commitment of public funds to provide safe walking areas and bicycle paths.

7) Policy support

This domain embraces raising awareness of, and securing support for, positive health protection measures among the public and policy makers. It includes a policy commitment to positive health.

2.2.3 Health education

As shown in the interlocking spheres on page 14, health education is related to health promotion. Both health education and health promotion are the essential domains of health communication. Many health academics have defined in regard to health education. For instance, 1990 Joint Committee on Health Education Terminology (1991 in Butler J. Thomas, 2001: 44) defines the “health education” as the continuum of learning which enables people as individuals, and as members of social structures to voluntarily make decisions, to modify behavior, and to change social conditions in ways which are health enhancing.

Wasana Junsawang (2005: 32-33) defines the term “health education” as the health communication on the part of education in accordance with an objective of communication (to educate health education). The term “health education” derives from the term “health” and “education.” Health education is interpreted as the total of experiences, education, and learning which are planned to promote healthy action. This action may be in individual level in order to prevent and to promote his/her self health and his/her family health. At the organization or community level, this action contributes to a change to healthier environment. The process of changing surroundings includes education by using ways of communication to educate people.

World Health Organization (http://whqlibdoc.who.int/hq/1998/WHO_HPR_HEP_98.1.pdf; August 12, 2006) stated that health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health.

Mostly, health education emphasizes the creation of health knowledge and helps people to understand health information, and to develop health-enhancing behavior. Duangjai Rattanathanya (2002: 10) noted that health education is an important tool for promoting health and solving health problems. Health education plays a key role in creating proper knowledge, understanding, and belief in health issues. To solve health problems, health education should rely on the development of knowledge about health education and health behavior; the use of multi-disciplinary knowledge; and the co-operation of relevant organizations. The right health behavior creates a healthy condition. People should learn healthy actions continuously according to the change in conditions. Therefore, health education is essential to individuals, families, communities, and countries. Furthermore, Karen Glanz, Barbara K.Rimer and Frances Marcus Lewis (2002: 9) discovered that health education is delivered in almost every conceivable setting and covers the continuum from disease prevention and promotion of optimal health to the detection of illness to treatment, rehabilitation, and long-term care.

In consideration of objectives of health education, Apiwan Kaowwannarat (2002:2, 16-17) claimed that health education comprises three main objectives. The first objective is in regard to health knowledge. Accurate health education is useful for self-care and community-care. The second objective is in accordance with health attitude. Public education aims to form the positive attitude to health issues. The last objective is about health practice. Public education is to support suitable health practices. Moreover, when determined according to public health services, health education is divided into four parts.

1) Health promotion is the education to promote persons to be healthy, or not to have risks of illness.

2) Disease prevention is health education on disease and sickness prevention.

3) Treatment is health education for patients. Patients should follow suggestions to prevent other intervening diseases and not to be sick again.

4) Rehabilitation is health education for patients who are recovered from their sickness. Patients should follow suggestions so that they may physically or mentally recover as soon as possible.

2.3 Consumer Guide to Food Sanitation

Health communication on consumer food behavior is a topic of this study. The consumer food behavior is divided into four categories: eating and drinking, food preparation, food selection, and food storage respectively. Nutrition Division, Department of Health, Ministry of Public Health guided consumer food behavior. The following part is consumer guides to food sanitation.

2.3.1 Eating and drinking practices

For good health, Nutrition Division, Department of Health, Ministry of Public Health (2003) suggested Food Based Dietary Guideline for Thai as follows:

1) Eat a variety of foods from each of five food groups, and maintain proper weight.

2) Eat adequate amount of rice or alternative carbohydrate sources.

3) Eat plenty of vegetables and fruits regularly.

4) Eat fish, lean meat, eggs, legumes, and pulses regularly.

- 5) Drink milk in appropriate quality and quantity for one's age.
- 6) Eat a diet containing appropriate amounts of fat.
- 7) Avoid sweet and salty foods.
- 8) Eat clean and safe food.
- 9) Avoid or reduce the consumption of alcoholic beverages.

Also, drinking sufficient water is necessary. Nutrition Division, Department of Health, Ministry of Public Health recommended in the website (<http://nutrition.anamai.moph.go.th/1675/new1675/Html/nmenu12/nm1215.html>: August 12, 2006) that drinking water is essential to life. Persons should drink at least six to eight glasses of water a day. Water carries nutrients and oxygen to cells and it carries metabolic waste product out of cells as well. However, persons should beware of drinking contaminated water as well because it may bring contagious diseases into a body. Then, it results in sickness such as cholera, typhoid, etc.

In addition to Food Based Dietary Guideline, Nutrition Division, Department of Health, Ministry of Public Health (no date) added that food is essential to persons of every age from unborn babies, babies, children, grown-up people, and elderly people. They need different nutrition according to their age. Recommendations on how to eat to meet one's needs are as follows:

- 1) Pregnant or breastfeeding mothers

Pregnant or breastfeeding mothers risk iron deficiency anemia and a lower-standard weight. They should get early prenatal care. Later four to six weeks after giving birth, they should check postnatal health. Also, they should eat complete variety of foods from all five food groups, and iron rich food such as liver, blood, heart, and red meat. On the other hand, they should avoid pickles, highly seasoned food, and food containing monosodium glutamate or chemical additives. They should

drink fresh milk, but they should avoid alcoholic beverages, tea, or coffee. In addition, they should not be tense, but they should exercise lightly, relax, and take care of their dental health.

2) Babies in the 0-12 month age-bracket

Babies in the 0-12 month age-bracket risk protein deficiency, energy deficiency, iodine deficiency, vitamin A deficiency, and vitamin B1 deficiency. The mother should prepare food sanitarily and properly for baby's digestive system. Only breast-milk should be given to 0-4 month old infants, while water or other foods should not. When the baby is over four months, the mother should start to feed solid food according to the baby's age. When babies are over six months, the baby should be fed with a variety of foods from all five food groups. The baby should be gradually fed from liquid paste or soft, to easily chewed food. Moreover, the mother should avoid giving colored food, and food containing monosodium glutamate or preservative to the baby.

3) Preschool children in the 1-5 age-bracket

Preschool children in the 1-5 age-bracket risk protein deficiency, energy deficiency, iodine deficiency, vitamin A deficiency, and vitamin B2 deficiency. They should be practiced to eat assorted Thai dishes, as well as good manners and healthy eating habits. Preschool children should eat complete variety of foods from all five food groups, especially orange and dark green vegetables and orange-yellow fruits. On the other hand, they should not eat snacks and sweet. Furthermore, they should avoid drinking sweetened drink, and carbonated soft drink.

4) School aged children in the 6-19 age-bracket and young adults in the 10-24 age-bracket

School aged children in the 6-19 age-bracket and young adults in the 10-24 age-bracket risk iron deficiency, iodine deficiency, protein deficiency, energy deficiency, and overweight. At this age, they should eat three full meals a day. They should not neglect breakfast. In addition, they should eat a variety of foods from all

five food groups especially iron rich food such as liver, blood, and red meat. Iodine salt should be added in all dishes of this age group. On the other hand, the school aged children and young adults should avoid eating snacks, western fast food, as well as sweet, salty and spicy food. Furthermore, they should avoid drinking carbonated soft drinks, but they should drink milk everyday. Over-weight children should drink low-fat milk. Finally, getting regular exercise and enough rest is also important for this age group.

5) Working age people in the 15-59 age-bracket, menopausal men in the 40-59 age-bracket, and menopausal women in the 45-59 age-bracket

Persons in this age group risk iron deficiency anemia, over-weight, diabetes, hypertension, heart and vascular disease, gout, osteoporosis, and cancer. They should eat a variety of foods of all five food groups, especially calcium-rich food such as dried prawn, small fish, and shrimps. They should cook food with vegetable oil, excluding palm oil and coconut oil. However, they should avoid eating over grilled food, fried food, fatty meat, coconut milk, and highly seasoned food such as sweet food, salty food, and spicy food. They should drink low-fat milk. Finally, they should regularly check their dental health, get exercise, control weight, and get enough rest.

6) Elderly people over sixty years

Elderly people over sixty years risk iron deficiency anemia; protein or energy deficiency; heart and vascular disease; hypertension; and diabetes. This group should avoid eating fried food, fatty meat, and highly seasoned food such as sweet food and salty food. They also should keep off foods which use coconut milk and butter as main ingredients. On the other hand, they should eat an adequate variety of foods from all five food groups as specified in the Thailand nutrition flag, especially easy-to-digest foods and calcium-rich foods such as milk. Overweight elderly people should drink low-fat milk. Vegetable oil, excluding palm oil, and coconut oil should be selected for cooking. Furthermore, elderly people should drink six to eight glasses of drinking water a day. However, they should abstain from alcohol, tea, or coffee. They should

get regular exercise which is appropriate for their physical condition. Finally, they should check their dental health, relax, and get enough rest.

2.3.2 Food preparation practices

Nutrition Division, Department of Health, Ministry of Public Health recommended on the website (<http://nutrition.anamai.moph.go.th/1675/new1675/Html/nmenu12/nm1202.html>: August 12, 2006) that consumers should give regard to three food preparation guidelines—nutrient preservation, food cookery, and safety.

- 1) Prepare food by retaining maximum nutrients.
- 2) Always cook food thoroughly to wipe out contaminated diseases.
- 3) Prepare food with cleanliness and safety. Examine the quality and standard of produce, seasoning, and kitchen utensils before buying, by checking certificate of Food and Drug Administration, as well as keep clean and safe cookery process.

2.3.3 Food selection practices

Nutrition Division, Department of Health, Ministry of Public Health recommended on the website (<http://nutrition.anamai.moph.go.th/1675/new1675/Html/nmenu12/nm1201.html>: August 12, 2006) that it is essential to pay attention to food selection whether it is fresh produce, dried food, canned food, ready-to-eat food, milk, or food additives today. Three food selection guidelines—safety, sufficient nutrition, and saving—should be followed.

- 1) Select food with the safety standard, buy food from credible sources and note GMP (Good Manufacturing Practice) or FDA (Food and Drug Administration) marks before buying.
- 2) Select a variety of foods which contains adequate nutritional value for all members of the family.
- 3) Select local and seasonal food.

2.3.4 Food storage practices

Nutrition Division, Department of Health, Ministry of Public Health recommended three food storage guidelines to food safety—particular proportion, proper surroundings, and safety—on the website (<http://nutrition.anamai.moph.go.th/1675/new1675/Html/nmenu12/nm1203.html>: August 12, 2006).

- 1) Keep each food item separately.
- 2) Store food at the proper temperature and moisture.
- 3) Always clean the storage place and keep food in a clean and safe container.

2.4 Magazines

Many academics have defined the word “magazine” similarly. For instance, Sukhothai Thammathirat Open University, School of Communication Arts (1989) defines “magazine” as a periodical, usually weekly, fortnightly or monthly, with a magazine page layout, color illustrations, and various columns. A.P Cowie (1994: 749) defines “magazine” as a paper-covered periodical, usually weekly or monthly, with articles, stories, etc., written by various writers. Ubolrat Siriyuwasak et al. (2004: 246) defines the “magazine” as a periodical, weekly, fortnightly, monthly, bimonthly, trimonthly, yearly, etc., with a certain name. It consists of articles, giving knowledge and opinion; present-time stories; short stories or fictions; documentaries; fashion; advertisements; and many services in each column by many writers. Each magazine production staff—owner, director, editor or art director, etc—has his/her own responsibility for magazine production.

2.4.1 Categories of magazines

Magazines can be divided into many types with typical features. Darunee Hiranruk (1987: 8-11) claimed that the category of magazine depends on grouping

objectives. For example, Click & Baird divides magazines into two main types: consumer magazines and specialized magazines.

1) Consumer magazines or mass magazines

Consumer magazines or mass magazines have content which is suitable for everyone (Roland E. Wolseley 1955: 6). These magazines target at a large number of readers. Most contents appeal to reader's feelings on a specific topic of written work such as sport, women, housework, and housekeeping. Mass magazines comprise ten sub-types as follows:

1.1) News magazines: The content of news magazines and newspapers has something in common, but the writing style is different. The news in newspapers is presented in the inverted pyramid-style. On the other hand, the news in news magazines is presented in the upright pyramid-style. News magazines give more details of an issue than newspapers. Certain kind of magazines emphasizes politics, economy, society, and general education issues. The explanation, conclusion, and critique of news in news magazines add to reader knowledge and understanding of the issue.

1.2) Picture magazines: In picture magazines, illustrations are used to depict stories or events more than the documentary writing. Illustrations are important to picture magazines because they communicate better than text. A well-known example of picture magazines is Life Magazine.

1.3) Digest magazines: The size of digest magazines is mostly small. Digest magazines present a summary of specific stories or important events, former published in books or other magazines. This kind of magazine saves time for readers who have little time for reading by providing summaries and brief extracts. "Reader's Digest" is a world-renowned digest magazine.

1.4) Confession magazines: Most of these magazines publish issues on public agenda to gain reader attention. This kind of magazine offers facts and discloses the

hidden truth on specific issues such as crime, love affairs, celebrities, politics, health, beauty, etc.

1.5) Fan magazines: The content of fan magazines is similar to that of confession magazines in that these magazines present the hidden truth to readers. However, the content of fan magazines focuses on the information and hidden truth of entertainment circles such as movie, music, radio, television, etc.

1.6) Sport magazines: The content of sport magazines is in regard to all types of sport. Some magazines publish all types of sport in the same issue of a magazine, while other magazines are specific to one sport types such as boxing magazines, tennis magazines, and football magazines.

1.7) Personal magazines: The content of personal magazines provides stories about celebrities from various circles.

1.8) Men or women magazines: The content of men or women magazines is general information for men or women. Men magazines present various items of information for men on fashion, adventures, body building, etc. On the other hand, women magazines present various items of information for women on fashion, beauty, housekeeping, families, babies, etc.

1.9) Academic magazines: The content of academic magazines is academic knowledge of a particular subject. Examples of academic magazines are science magazines, mathematics magazines, etc.

1.10) Cartoon magazines: An illustration of cartoon magazines is Khai-Hau-Roh magazine.

2) Specialized magazines

Specialized magazines target at a number of readers who are interested in one specific issue. The content of specialized magazines is an expression of opinion,

discussion, suggestions, conflicts, explanation, and interpretation. Specialized magazines comprise seven sub-types as follows:

2.1) Business publications: The content of business publications concerns business transactions, industry, economy, or particular professions. The difference of content and objectives depends on the magazine editor or production staffs.

2.2) Association magazines: The content of association magazines is a report of association's activities. These magazines have a limited distribution. Readers of these magazines are members only.

2.3) Public relation magazines: Public relation magazines target at readers in their own organizations such as employees, clients, shareholders, dealers, and consumers. Organizations include governmental institutions, private companies, and private enterprises. The content of public relation magazines is explanations of organization's policies, goals, and progress reports.

2.4) One-shot magazines: One-shot magazines are published once on special occasions. The content of one-shot magazines emphasizes on what is happening or special events. One-shot magazines are similar to picture magazines in that illustrations are mostly used.

2.5) Religious magazines: The content of religious magazines is about religion and focuses on religious doctrine or supernatural power (Vitsanu Suwanperm, 1984: 59).

2.6) Scholarly magazines: Scholarly magazines are to give knowledge in various subjects.

2.7) Literary magazines: Some literary magazines are written in prose, but some are written in verse.

2.4.2 Content of magazines

As mentioned, the magazine can be grouped as many types with typical features. One of the typical features is the different content of each magazine. Chawarat Cherdchai (1977: 360-362, 375-379) explained that every magazine contains different contents, known as “formula”. Each magazine editor sets the formula and produces the magazine according to the specified formula or plan. As a result, every magazine has its own character. In general, the content of a magazine comprises the following items:

1) Articles: Articles are the important content of most magazines. The magazine editor selects various articles. For example, humorous stories, individual stories, and interviews.

2) Works of fictions: Although most business publications do not publish fiction, articles, and documentaries, most news is presented in these business publications. Some magazines focus primarily on fiction and documentaries. Articles are secondarily emphasized. Examples of fictions are short stories and serials.

3) Illustrations: Artwork, photographs and drawings are essential elements of every magazine. The artwork in magazines is more attractive to readers than that in newspapers. The more progressive the printing technology is; the more beautiful and important the artwork becomes. Functions of artwork in magazines are divided as follows:

3.1) Catching reader attention: The magazine editor attracts reader attention by placing large color pictures on the center spread. Readers are first attracted to the picture on the front cover. Besides that, there is the title illustration. It is a composite of the picture with one or a few words as the title of an article.

3.2) Content supplement: Illustrations are essential to describe the content. The magazine editor must select most suitable illustrations for effective communication. Illustrations may be photographs, drawing, paintings, maps, and statistical indication.

3.3) Content explanation: A picture story page is a composite of a number of pictures and a minimum of text to describe a story or events. The picture story page is found in picture magazines. In addition, the magazine editor may place a picture or pictures to explain the content about science experiment, invention, decoration, public relations, and tourism in almost every type of magazines.

3.4) Meaning communicator: There is some pictures with few or no words such as a picture of a beggar or a car accident which can communicate meanings to readers by themselves. Although the picture can communicate meaning by itself, the magazine editor should give readers an additional explanation for more effective communication.

3.5) Making up magazine layout: The magazine page without illustrations is uninteresting. The magazine editor reduces the dense lettering and catches reader interest by supplementing the page with illustrations.

4) News: News, including news criticism, is the important part of news magazines. However, every magazine may comprises news. The magazine editor can particularly set the news column at the beginning or the end of each magazine.

5) Columns: Most magazines comprise columns as an important component of every issue. Owing to the fact that readers are interested in different contents, the magazine editor divides the content into various columns such as news, letters to editor, food, fashion, song, etc. So readers are familiar with columns.

6) Editorials: As with the newspaper editor, the magazine editor can voice his/her opinion. The editorial, either with or without the writer's name, is existed in almost every magazine. The editorial is the important column in association magazines, business publications, and opinion magazines.

7) Verse: Poetry magazines are launched because verse partly expresses feelings, emotion, and thought of person in the same culture. A short verse can be found in almost every magazine for ethical teaching.

8) Cartoons and funny stories: Cartoons and funny stories can be found in almost every kind of magazine such as business publications, academic magazines, scholarly magazines, and news magazines. Cartoons and funny stories are in accordance with attributes of each magazine. For example, political cartoons are the important component of news magazines.

9) Miscellaneous columns: Every magazine may comprise the content of miscellaneous columns. The magazine editor may complete the magazine page with miscellaneous items such as puzzles, games, quizzes, and various tips.

All items in a magazine are from many sources. Chawarat Cherdchai (1977: 364-366) revealed that sources of magazine content can be divided into two main sources as follows:

1) Editorial department: Editorial staffs write most of magazine contents according their writing proficiency. One staff in a large organization will be responsible for one particular issue. On the other hand, one staff in a small organization may be responsible for many issues because of the lack of personnel. The editorial staff is proficient at writing policies of magazines, editorials, plans, people, and themes.

2) Outside writers: Outside writers are writers who are not editorial staff such as readers, academics or officers of organizations; staffs of relevant institutes; independent writers, etc.

2.1) Readers: Readers may send letters, articles, travel documentaries, special issues, verse, cartoons, academic writings, etc to the editorial department for publication. This activity reflects reader interest to magazines.

2.2) Academics or officers of relevant organizations: Not necessary to be a professional writer, academics or officers of organizations are skilled writers who can write about their organizations, especially their company and university academic journals, better than outside writers do.

2.3) Staffs of relevant institutes: The magazine editor may acquire an article from staffs of relevant institutes who are responsible for the same field. For instance, the magazine editor of a political science journal of the Faculty of Political Science, Thammasat University, may ask a professor of the Faculty of Political Science, Chulalongkorn University or he/she may ask any officer of the Ministry of Interior to write an article under particular contract.

2.4) Independent writers: Independent writers may be amateur or professional writers who are not in charge of any magazine. Most works of independent writers are for sale. Sometimes, the magazine editor may sign a contract which specifies subject, length, wage, and the due date for submitting the written work, with an independent writer.

2.5) Others: The content of a magazine may be acquired from other sources; for example, contestants, writing contest, etc. The magazine editor may ask the relevant ministry, embassy, and non-profit organizations to submit an article to him/her in special occasions.

2.4.3 Functions of magazines

Owing to the fact that magazines are part of mass media, functions of magazines and those of other mass media correspond. Ubolrat Siriyuwasak et al. (2004: 8, 249) said that mass media as an informant have their own power and influence in society. Mass media have their responsibilities as a gatekeeper, agenda setter, and public watchdog.

1) Gatekeeper: Mass media as a gatekeeper direct the information flow.

2) Agenda setter: Mass media as an agenda setter set and disseminate the agenda to the public. Also they determine the importance of the agenda on politics and society.

3) Public watchdog: Mass media as a public watchdog criticize and balance the administrative authority of the government.

Today, functions of magazines have changed from the role of informant and educator to entertainer and advertiser. Although magazines can not avoid a role as advertiser, magazine production staffs should keep a balance between the role of stimulating consumerism, and educating by providing readers with accurate information; or the role as a friend who gives useful advice; or the role as a medium for public opinion.

2.5 Content Analysis

Content analysis is a methodology of communication science. The word “content analysis” was defined by many academics in this field. For example, Parichard Stapitanon (2002: 234) defines “content analysis” as the methodology directly concerns messages. The content analysis emphasizes the research for the conclusion of a study; the characteristic interpretation of messages, senders, receivers, communication context, effects of communication, social behaviors reflecting on message; and the hypothesis test mentioned in a theory.

Patchanee Cheyjunya, Mettha Wiwattananukul and Thiranan Anawatsiriwong (1998: 237) indicated that the content analysis according to Barelson is a neutral, objective, and systematic methodology. It is the quantitative description of manifest communication content. In addition, Danielson shows four important parts of this technique—a neutral and objective technique—a systematic method; the possibility of showing statistics; and manifest contents. A researcher analyzes manifest contents systematically and explains quantitative results with statistics such as frequencies and a percentage. No matter how often a researcher does the content analysis, it shows the same conclusion every time.

Richard W. Budd, Robert K. Thorp, and Lewis Donohew (1967: 2) define the “content analysis” as a systematic technique for analyzing the message content and message handling. It is a tool for observing and analyzing the overt communication behavior of selected communication.

2.5.1 Media content analysis

The content analysis of food communication in a health magazine is the study of media content. Kanchana Kaewthep (2002: 331-332) explained the study of media content according to communication science that the researcher can analyze the media content according to the information theory. There are four essential concepts. Firstly, communication is the information transmission from a sender to a receiver. Secondly, media content is the information. Thirdly, the information has the quality of reducing uncertainty. Fourthly, qualities and characteristics of information are measurable. Four examples of the application of information theory with media content analysis are as follows:

2.5.1.1 Informativeness: There are many methods by which to measure the quality of information. The first example is counting a number or quantity of fact in the content. This method “fact” should be defined and be enumerated the number in the content. Another example is measuring the proportion of issues, connected with the study in view of the density. The next method is comparing the real number of issues with the possible proportion of issues in order to measure the breath of the content (How many issues possibly exist in one page of news? How many issues are there actually? What is the proportion of them?). The last example is measuring a number or quantity of fact which contributes to the understanding of issues in view of the depth.

2.5.1.2 Readability: Readability is a qualitative dimension. This concept is that less information is easily readable and understandable. Therefore, the readable news is the repetitive news.

2.5.1.3 Diversity: It is easy to measure the diversity of news contents, reported. The news content should be examined whether it gives an opportunity to both pros and cons to express their opinion. In addition, some researchers apply the method of calculating the proportion of issues to the frequency of presentation.

2.5.1.4 Information flow: There are many objectives and many ways to study the information flow. For instance, a researcher examines what information goes to

receivers and whether the information flow is one-step flow or two-step flow. A preferred method is using words as a unit of measurement. An example is determining the word “democracy”, “diligence”, “honesty”, etc. to measure the information in media—news, documentaries, song, soap opera, game show, etc.

2.5.2 Process of content analysis

According to Parichard Stapitanon (2002: 236-241), six steps of content analysis according to communication science are as follows:

1) Determine the question of the study: The question of the study should be determined after reviewing relevant literatures and setting the scope of the study. Often, the question of content analysis is about messages or characteristics of messages.

2) Define the population and specify the criteria to draw the population: Often, the population of content analysis is the information about the topic of study. It may be printed material, cartoons, song, cinema, etc. To know the scope of the study, the researcher should clearly define which information is or is not the population, studied.

3) Set units of data analysis: Content analysis is connected with information categorization. The researcher should set units of analysis or characteristics of the content, connected with a study before beginning the study. The unit of analysis should correspond with the question of the study and hypotheses. Five units of analysis according to Barelson (1952) are word or symbol; theme; character; time or space; and item. The researcher can set over more than two units of analysis for his/her research. The details of each unit of analysis are as follows:

3.1) Word or symbol: The smallest unit of analysis is word or symbol (for example, the personal name, the place name, and vocabularies, connected with the topic of study).

3.2) Theme: Theme is thoughts, concepts, or thesis statement. Often, the theme analysis is the qualitative analysis more than the quantitative analysis. This analysis emphasizes the analysis of latent meaning more than that of manifest meaning.

3.3) Character: The population of the study must be clearly identified. The study of character may either classify the population according to the physical character (for example, female or male; and white or black persons) or classify according to the role of the population in a group.

3.4) Time and space: examples of this unit are the period of broadcasting; the size of pictures; a number of inch columns in an item; and the page number, displayed.

3.5) Item: examples of this unit are news, articles, and television programs.

4) Create the tool for classifying the content: The tool is tally sheets. This step is based on theories, hypotheses, definitions of terms, and the actual state of data. The data classification should be carefully done as well as all characteristics, referring to the data should be clearly studied and understood to create the exclusive tally sheet and to avoid using the other's criteria for the study.

5) Set the criteria for data codification: This step is enable the researcher to find the right unit of analysis easily and correctly. The criteria for data codification are specified in the following measurement system:

5.1) Nominal measurement: The coder classifies the unit of analysis (for example, the gender is classified to female or male), enumerates each sub-group, and concludes the total number of the group.

5.2) Ordinal measurement: The coder decides the rule of data ranking. For instance, the news, reported in a day is ranked according to its important order.

5.3) Interval measurement: The coder sets the data rating. An example is that the poster analysis to examine that the poster promotes or rejects the environmental conservation.

5.4) Ratio measurement: The coder measures the period of time or the size of areas as square inch.

6) Evaluate data validity and reliability: The validity and reliability of content analysis depends on many proper elements—the intercoder reliability. The data is highly valid if all coders analyze, classify, and interpret the data, accordingly. Furthermore, the data validity is connected with characteristics of content; clearly defined definitions; proper units of analysis, and the effectiveness of the tool (tally sheet).

2.6 Review of Relevant Researches

The study of food content in a health magazine is relevant to six researches on food behavior and the health communication in mass media. Six researches are as follows:

2.6.1 The report on Thai public health 2001-2004 is written by Suwit Wiboonpolprasert et al (2001-2004: 122, 124). This report revealed results connected with public health of Thai people during 2001-2004 as follows:

- Important risks of diseases are unsafe sex; smoking, drinking alcohol; hypertension; driving motorcycle without helmet; obesity, malnutrition; high blood cholesterol; eating not enough vegetables and fruits; and lack of exercise.

- Thai people's food consumption has changed according to their lifestyle. Due to rush lifestyle, people both in urban and rural areas eat more ready to eat food or instant food.

- The survey of the national statistics office in 2001 disclosed that sixty percent of Thai people selected food by taking cleanliness and deliciousness into consideration.

- The third survey in 1986 and the fourth survey in 1995 on food and nutrition in Thailand pointed out that the percentage of obesity of Thai people increased at every age.

2.6.2 The content analysis of health in health magazines—Klai-Moh, Che-Va-Jit and Moh-Chao-Baan. Tatinut Luxchaigul (2001) did this content analysis and disclosed the results, connected with this case study as follows:

- Most health contents are about self-care. The concepts of health promotion in health magazines are for disease prevention; disease control; treatment; and physical or mental rehabilitation.

- Most of the content format presentations in three magazines comprise general articles, semi-academic articles, illustrations, and cartoons. Content formats are more general articles and fewer entertaining documentaries.

- The essential writer is the doctor because the presentation of medical content still requires a person who has the professional knowledge in that field.

- A role of health magazines is health promotion. Both normal people and patients should take care of their health.

2.6.3 The content analysis on the nutrition knowledge in Thai newspapers (Thai-Rath, Dailynews, Kom-Chad-Luek, and Khao-Sot) and Thai magazines (Brand Health, Health and Cuisine, Mae-Lae-Dek, Che-Va-Jit, and Moh-Chao-Baan). Nut Nakasuwan (2004) described relevant results as follows:

- Thai newspapers as well as Thai magazines mostly publish nutrition knowledge in articles.

- Nut Nakasuwan pointed out that the nutrition knowledge published in Thai newspapers and Thai magazines does not correspond with "Food Based Dietary Guideline for Thai" announced by Ministry of Public Health due to two main reasons. The first reason is that Thai newspapers and Thai magazines publish some topics

about nutrition knowledge as "Food Based Dietary Guideline for Thai". The second reason is that Thai newspapers and Thai magazines focus on other nutrition knowledge—supplementary diet and usefulness of herbs—more than "Food Based Dietary Guideline for Thai".

2.6.4 The content analysis on health in Thai newspapers—Thai-Rath, Dailynews, Khao-Sot, and Ma-Ti-Chon. Tanawan Kummarnjesadakul (2004) presented relevant results as follows:

- Four Thai daily newspapers mostly present health contents on the prevention of risks of diseases.

- Four Thai daily newspapers mostly publish health contents in news, daily columns, and articles, respectively.

- Sources of health contents are health experts and other sources which give the information. Most health contents are from three sources—Ministry of Public Health; individuals; and governmental or private hospitals, respectively.

- Most functions of four Thai daily newspapers are to inform and to give health knowledge to their readers; or at least to voice their critical opinion and support.

2.6.5 Piriyaorn Waewjinda (2004) studied the public relation strategies and effectiveness of Food Safety Campaign announced by Ministry of Public Health. The relevant result is as follows:

- One of the principal strategies for public relations in Food Safety Campaign is mass media—television, newspapers, and radio, respectively.

2.6.6 Duangdao Panpikul (2001) studied health education on the national health recommendations in television programs and presented results, connected with this case study as follows:

- Most contents of government organizations or private sectors focus on subjects of "consume cooked and clean food, and avoid food, contaminated with dangerous chemicals; highly seasoned food; and colored food."

- Most of the health concepts are knowledge about prevention and disease control, whereas concepts of treatment and rehabilitation are shown more in health programs of private sector than those of public sector.

CHAPTER III

RESEARCH METHODOLOGY

The content analysis comprises six steps. The first step is to review relevant literatures. The second step is to select the representative sample of population and to set units of analysis. The third step is data gathering. The fourth step is to create tools. The fifth step is analysis and the final step is conclusion. The next presentation is of the details of each step.

3.1 Literature Review

The literature review on communication, health communication, consumer food sanitation, magazines, and content analysis is started at the first step. The literature is from many sources—books; theses; researches; magazines; printouts of the information from websites; and a few leaflets on nutrition, published by the Nutrition Division, Department of Health, Ministry of Public health. The following part is the list of libraries and websites

The list of libraries comprises six locations as follows:

- 1) The Central Library, Chulalongkorn University
- 2) The Pridi Banomyong Library, Thammasat University
- 3) The library at Faculty of Journalism and Mass Communication, Thammasat University
- 4) The library at Faculty of Medicine, Siriraj Hospital, Mahidol University
- 5) The library at Faculty of Nursing, Mahidol University

6) The library at the Institute of Language and Culture for Rural Development, Mahidol University

Whereas the list of websites comprises eleven URL addresses as follows:

- 1) <http://www.mahidol.ac.th>
- 2) <http://www.chula.ac.th>
- 3) <http://www.tu.ac.th>
- 4) <http://www.doctor.or.th>
- 5) <http://nutrition.anamai.moph.go.th>
- 6) <http://elib.fda.moph.go.th>
- 7) <http://www.who.int/mediacentre/news/releases/2004>
- 8) <http://whqlibdoc.who.int>
- 9) <http://www.healthpromotionjournal.com>
- 10) <http://www.healthypeople.gov>
- 11) <http://www.Tigerdragon.in.th/thai%20herb-def.htm>

After reviewing all relevant literatures, the next step is to select the representative sample of population and to set units of analysis.

3.2 Population, Sampling, and Selection of Units of Analysis

The description of this step comprises three parts. Firstly, the population will be described. Secondly, the sampling will be explained. Thirdly, units of analysis will be introduced. The next presentation is of the details of each part.

3.2.1 Population

As this thesis is the study of food content, content format presentation, and health communication objectives, the population in this study is the food content in a health magazine. In June 2004, the survey of health magazines was started by the observation and the enquiry in six bookstores—Dokya, Naiin, SE-ED Book Center, Asia Books, Bookazine, and B2S. The survey revealed that there are fifteen health magazines in these bookstores—Klai-Moh, Mae-Lae-Dek, Moh-Chao-Baan, Ruk-Luke, Buntuke-Khun-Mae, Duang-Jai-Por-Mae, Kid and Family, Che-Va-Jit, Healthtoday, Health & Cuisine, Phet-Taang-Lerk, Herbs for Health, Brand Health, Baby's Digest, and Good Health Thailand. The age of health magazines is shown in Table 2.

Table 2: Age of health magazines

Edition	Title (edition)	Age
1	KLAI-MOH	27
2	MAE-LAE-DEK	27
3	MOH-CHAO-BAAN	25
4	RUK-LUKE	22
5	BUNTUKE-KHUN-MAE	10
6	DUANGJAI-POR-MAE	9
7	KID AND FAMILY	9
8	CHE-VA-JIT	6
9	HEALTHTODAY	4
10	HEALTH&CUISINE	4

Table 2: Age of health magazines (continued)

Edition	Title (edition)	Age
11	PHET-TAANG-LERK	4
12	HERBS FOR HEALTH	4
13	BRAND HEALTH	3
14	BABY'S DIGEST	2
15	GOOD HEALTH THAILAND	2

3.2.2 Sampling

Health magazines over twenty years—Klai-Moh, Mae-Lae-Dek, Moh-Chao-Baan, and Ruk-Luke—are in focus because they present the well-organized content with the stable format presentation. Considering the character of four health magazines, Moh-Chao-Baan magazine differs from other health magazines in that it contributes the net income to Moh-Chao-Baan Foundation—a nonprofit organization. Therefore, the objective of Moh-Chao-Baan magazine is for public benefit. In addition, the information in the website (http://www.doctor.or.th/zone_about/index.htm: August 12, 2006) indicated that the production team of Moh-Chao-Baan magazine promotes people self-care as well. Considering the data above, the production team of this health magazine gives regard to public benefit as a main issue. The production team focuses on self-care knowledge dissemination for the development of consumer awareness. This development of knowledge is one of the operational strategies in Food Safety Campaign as well. As a result, the objective of Moh-Chao-Baan magazine and the operational strategy in Food Safety Campaign correspond. The researcher assumes that Moh-Chao-Baan magazine during the Food Safety Campaign period should present a food safety issue.

As Food Safety Campaign was in action from 1st April 2003 to 30th September 2004, twelve issues of Moh-Chao-Baan magazine during this campaign period

(Volume 24 Issue 288 April 2003 to Volume 25 Issue 299 March 2004) are selected as the representative sample of population in this study. The food content of twelve issues of Moh-Chao-Baan magazine is enough to discern food content, content format presentation, and health communication objectives.

3.2.3 Units of analysis

In this content analysis, two units of analysis—theme (main ideas) and items—are used. Titles and topics on food and food behavior in twelve issues of Moh-Chao-Baan magazine—Issue 288 April 2003 to Issue 299 March 2004—are observed to fix a number of items as the representative sample of population in this study. The survey disclosed that twelve issues of this health magazine contain fifty-one items showing food content as shown in Table 3.

Table 3: Number of items showing food content

Issue	Month/Year	Number of items
288	April/2003	6
289	May/2003	8
290	June/2003	5
291	July/2003	4
292	August/2003	5
293	September/2003	3
294	October/2003	3
295	November/2003	5
296	December/2003	4
297	January/2004	3

Table 3: Number of items showing food content (continued)

Issue	Month/Year	Number of items
298	February/2004	1
299	March/2004	4
Total number of items		51

Fifty-one items will be analyzed. The use of two units of analysis is restated at the next step, data gathering.

3.3 Data Gathering

The data gathering is divided into two main parts. The first part is the food content, content format presentation, and health communication objectives of Moh-Chao-Baan magazine. The second part is the interview with the managing editor of Moh-Chao-Baan magazine. The next presentation is of the details of each part.

3.3.1 Food content, content format presentation and health communication objectives of Moh-Chao-Baan magazine

Overall, clear definitions of terms used in this study are given. Main ideas of food content and relevant data are collected. The data codification is a nominal measurement. All data are recorded in four information sheets. A number of items and information pieces showing food content are counted. At last, the quantitative data are concluded. The details are as follows:

3.3.1.1 Food content

Food content includes consumer's eating and drinking, food preparation, food selection, and food storage. The food content in each item is read. Main ideas are recorded in the information sheet 3.4.1.1. Then, a number of information pieces are counted. The quantitative data are recorded in the information sheet 3.4.1.4. It is

acceptable in this study to find either a single piece of information or many pieces of information in one item.

3.3.1.2 Content format presentation

Content formats and features of illustrations, referring to the content are recorded in the information sheet 3.4.1.2. In addition, the information sheet 3.4.1.2 shows that articles, news, and letters are in regular or irregular column. A number of articles, news, letters, and illustrations are counted. Then, a number of items are recorded in the information sheet 3.4.1.4.

3.3.1.3 Health communication objectives

Health communication objectives include disease prevention, health promotion, treatment, and rehabilitation. Features of content, showing health communication objectives are recorded in the information sheet 3.4.1.3. Then, a number of items, showing each objective are counted. At last, the quantitative data are written down in the information sheet 3.4.1.4.

3.3.2 Interview with the managing editor of Moh-Chao-Baan magazine

The data are collected by interviewing with Mr. Komsthanont Sukutjasakul, the managing editor of Moh-Chao-Baan magazine. All interview questions are set up beforehand. The data collected for this study are about general data, readers, content, writers, and roles to readers or society.

3.4 Tools

Tools are divided into two types. The first tool is information sheets, collecting the food content, content format presentation, and health communication objectives of Moh-Chao-Baan magazine. The second tool is an interview form. The next presentation is of the details of each part.

3.4.1.4 Quantitative data

The information sheet 3.4.1.4 contains all quantitative data. The quantitative data is about food content; content formats; illustrations, referring to the content; and health communication objectives. The feature of this sheet is shown below.

Series	Vol.	Food content				Content formats			Illus.		Objectives			
		1	2	3	4	1	2	3	Yes	No	1	2	3	4
Total number														
Percentage														

3.4.2 Interview form

There are twenty-three questions in the interview form. The interview questions are about general data, readers, content, writers, and roles to readers or society.

3.5 Analysis

The analysis comprises three parts according to objectives of this study. The first part is food content. The second part is content format presentation. The third part is health communication objectives. The analysis shows what are used for analyzing and answering each question of this study.

3.5.1 Food content

Consumer guide to food sanitation is used for studying food content. The Nutrition Division, Department of Health, Ministry of Public Health recommends healthy eating and drinking, food preparation, food selection, and food storage.

3.5.2 Content format presentation

Concepts of magazines are applied to analyze content formats and illustrations, referring to the content. These concepts explain content format presentation and the use of illustrations in magazines. Furthermore, concepts of communication are used for studying effective ways of communication in Moh-Chao-Baan magazine.

3.5.3 Health communication objectives

Concepts of communication and health communication are used for analyzing health communication objectives. These concepts explain health communication, health promotion, and health education.

3.6 Conclusion

The final part is conclusion. The conclusion comprises three main parts. The first part is the conclusion of results and analysis. The second part is discussion. The final part is recommendations. The details of each part will be restated in the sixth chapter.

CHAPTER IV

RESULTS

The results of this content analysis comprise four main parts. The first part is the background of Moh-Chao-Baan magazine. The second part is food content. The third part is content format presentation. The final part is health communication objectives. The details of results are put in order according to the quantitative data. The following part is the details.

4.1 Background of Moh-Chao-Baan Magazine

The interview with Mr. Komsthanont Sukutjasakul, the managing editor of Moh-Chao-Baan magazine was set up on 27th March 2007. Mr. Komsthanont disclosed that Moh-Chao-Baan magazine was first launched in May 1979 and has been published continuously for twenty-eight years. Its objective is to disseminate knowledge of life, health, and environment; self-prevention; and self-care. Production staffs comprise Copy Department; Art Department; regular and irregular writers out of Moh-Chao-Baan office; and an executive team. Most of production staffs are health professionals such as doctors, pharmacists, nurses, physical therapists, and instructors of medical schools at Mahidol, Chulalongkorn, Thammasat, Chiang Mai, and Konkaen University. Overall, health professionals work for the following positions.

- 1) Professor Emeritus Dr. Pravet Vasee, Editor, Publisher and Advertiser
- 2) Professor Emeritus Dr. Sant Hatthirat, Director-editor

3) Associate Professor Dr. Surakiat Archananuparp, Executive editor

4) Executive team and regular writers—most of them are public health and medical personnel at medical schools in many universities.

The production staff intends to create Moh-Chao-Baan magazine as an inexpensive publication for disseminating health knowledge to the public. Moh-Chao-Baan magazine is distributed all around Thailand. This health magazine catches most of all types of readers—men and women of all ages, education levels, and occupation. The production staff expected that there will be readers all around Thailand. Most readers will live in upcountry. They will be interested in their health and their neighbor health.

In fact, the expected readership is current Moh-Chao-Baan magazine readers. Most readers are local buyers more than regular members. Most members are middle-age women who live in upcountry more than those who live in Bangkok. They graduated and have been employees in government or government enterprises. Their income is more than ten thousand Baht. Although the managing editor of Moh-Chao-Baan magazine did not expect that school boys, teen-age boys, and young men read Moh-Chao-Baan magazine. However, these groups are Moh-Chao-Baan magazine readers. They live in Bangkok and suburban areas. Most of them finished high school and worked for private companies. Their income is more than ten thousand Baht. The managing editor of Moh-Chao-Baan magazine further disclosed that young and working age readers pay more attention to health issues.

Concerning the content presentation in Moh-Chao-Baan magazine, content issues are set up by the Copy Department, the Executive editor, and executive team. They select shared content issues in each issue of Moh-Chao-Baan magazine. Content issues are from interviews with specialists; the executive editor and executive team's advice; and news in mass media. Factors that influence the content setting in Moh-Chao-Baan magazine are social trends, current health problems, public health personnel advice, reader needs, new issues, and research results that affect health, quality of life, and lifestyle of people or target readers.

Now the production staff focuses on a reduction of important health problems, food, mental health, community environmental management, and exercise, respectively. The objectives of production staffs are to offer readers the right knowledge, attitude, and health behavior for prevention, health promotion, treatment, and rehabilitation. Furthermore, the managing editor of Moh-Chao-Baan magazine indicated that the content presentation in Moh-Chao-Baan magazine should be balanced. However, the production staff has to share content presentation because paper space is limited. All content issues can not be put into one issue of Moh-Chao-Baan magazine. Content writers of this health magazine comprise editorial staffs and outside writers. Outside writers are regular writers who have a writing contract with Moh-Chao-Baan magazine, and writers who send interesting articles to the production staff. Overall, content writers are doctors; pharmacists, nurses; nutrition and public health academics; and lawyers from the law office of Thongbai Thongpao.

The managing editor is very satisfied with the result of his work. He informed that Moh-Chao-Baan magazine has been published continuously for a long time because this health magazine is an inexpensive intellectual medium, supported by professors and has a presentation of familiar and easily understandable content. This health magazine has a role in knowledge dissemination to the public; consumer protection; exercise promotion for disease prevention; and a campaign to create a social trend. Examples of the campaign in the past were Don't Drink campaign and Non-Smoking Campaign.

4.2 Food Content

The term "food" in this study means food and beverages. Food content includes consumer's eating and drinking, food preparation, food selection, and food storage. An item in Moh-Chao-Baan magazine shows either multiple pieces of information or a single piece of information. Considering the comparison of number of items showing multiple pieces of information and a single piece of information,

there is no meaningful difference between two features of food content because the quantitative data shown in Diagram 3 are close.

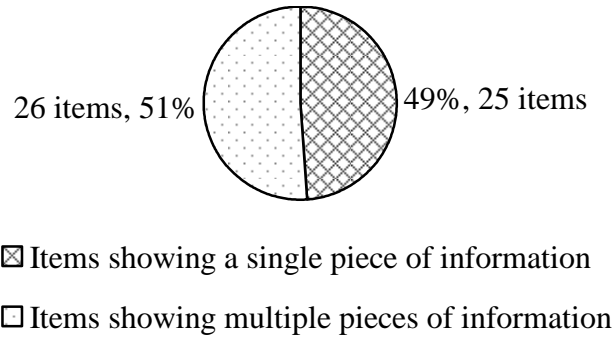


Diagram 3: Proportion of two content features

The qualitative results show that the production staff of Moh-Chao-Baan magazine presents consumer eating and drinking topic more than other topics in proportion to all the pieces of information.

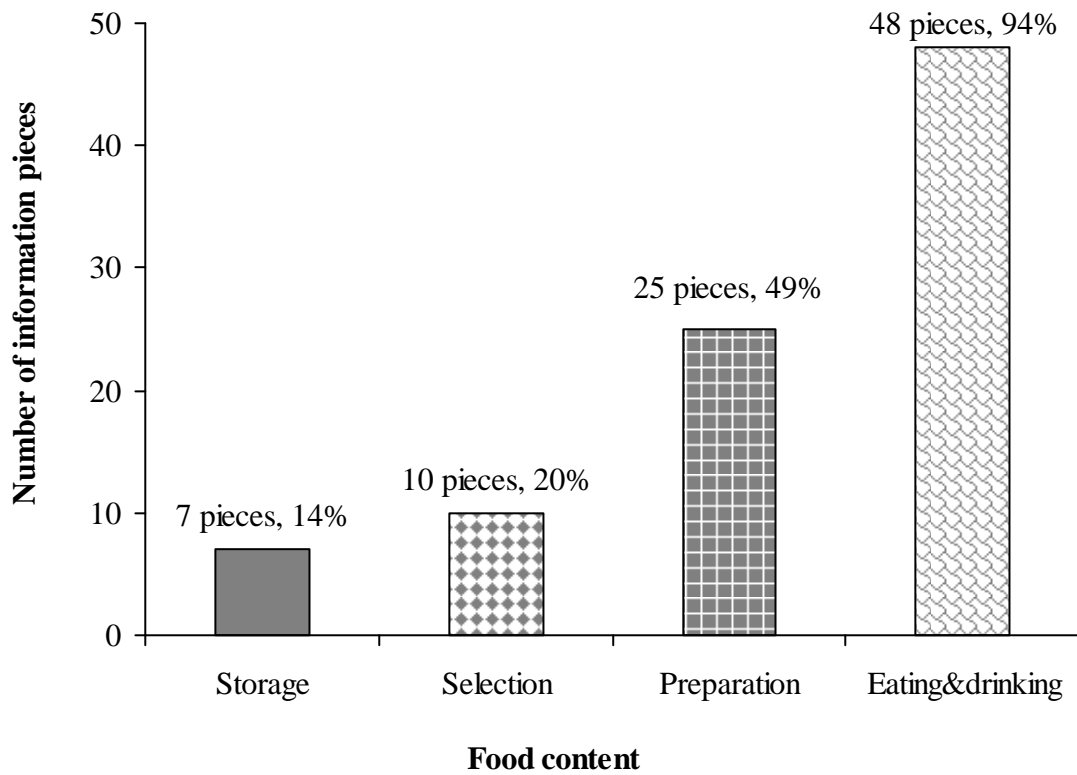
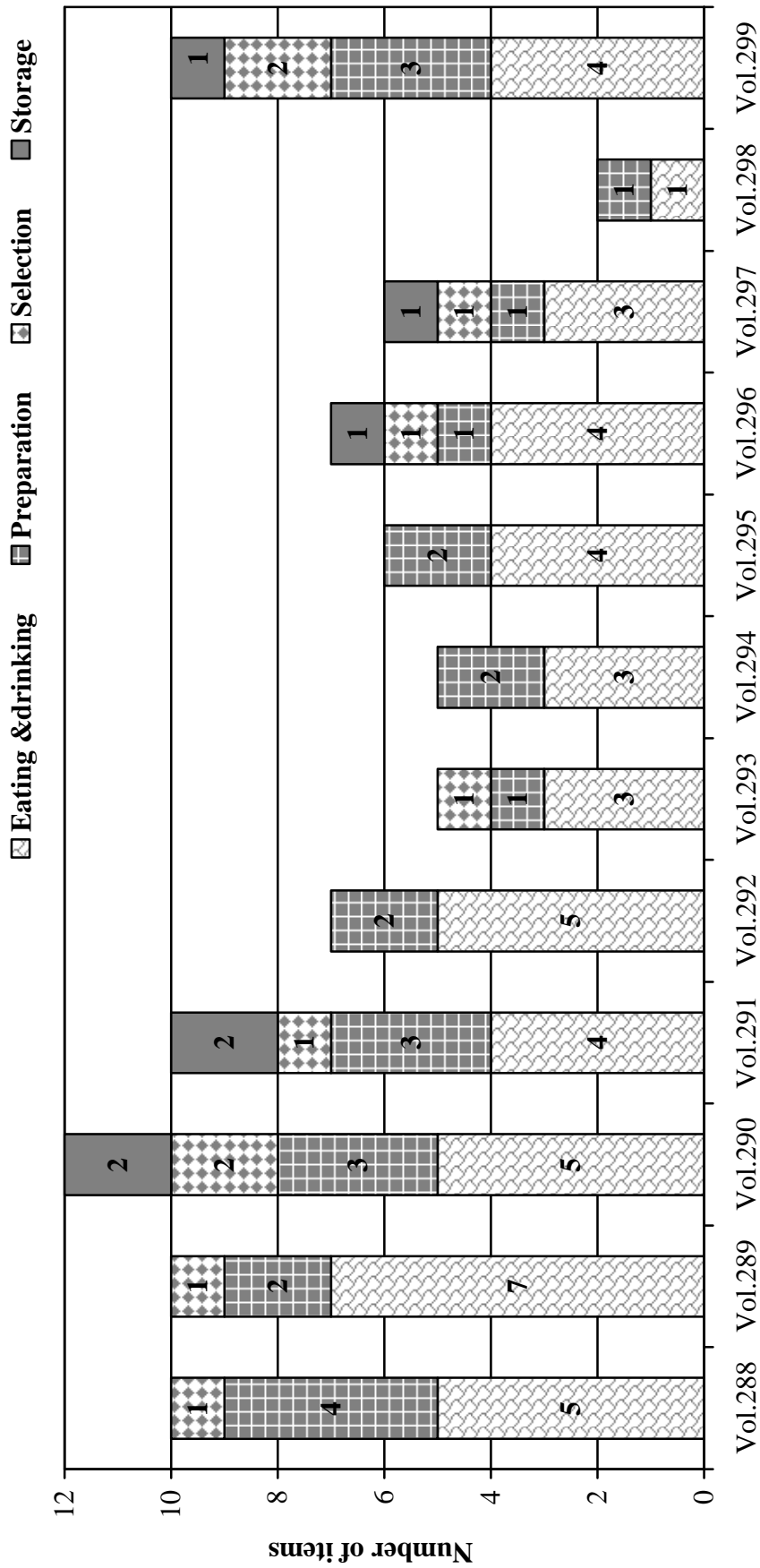


Diagram 4: Food content

According to Diagram 4, of fifty-one items showing food content, forty-eight pieces of information refer to consumer eating and drinking. Twenty-five pieces of information refer to consumer food preparation. Ten pieces of information refer to consumer food selection, while seven pieces of information refer to consumer food storage.

Considering the monthly presentation of food content, the production staff presents consumer's eating and drinking, and food preparation in every issue of Moh-Chao-Baan magazine—Issue 288 April 2003 to Issue 299 March 2004. Consumer's food selection and food storage are presented in some issues of this health magazine. Consumer food selection and food storage topic are presented between one and two pieces of information a month, while consumer food preparation topic is presented between one and four pieces of information a month. The production staff of Moh-Chao-Baan magazine presents consumer eating and drinking topic more than other topics almost monthly. The presentation of consumer eating and drinking topic are between one and seven pieces of information a month as exhibited in Diagram 5 on the next page.



Moh-Chao-Baan magazine

Diagram 5: Monthly presentation of food content

In addition, the qualitative results show that the content writer of Moh-Chao-Baan magazine gives advice on consumer food behavior. The advice comprises four parts. The first presentation is of consumer eating and drinking. The second presentation is of consumer food preparation. The third presentation is of consumer food selection and the last presentation is of consumer food storage.

4.2.1 Consumer eating and drinking

Consumer eating and drinking is the most published topic during this study. Features of food content are seven topics of healthy eating and drinking advice for consumers—food safety; whole food; healthy and nutritious food choices; right sorts of food; a variety of foods; balanced diet; and medicinal food—as shown in Table 4.

Table 4: Healthy eating and drinking advice

Order	Topic	Main ideas of advice
1)	Food safety	Eat cooked, clean and uncontaminated food.
2)	Whole foods	Eat foods that are unprocessed and unrefined, or processed and of course refined as little as possible before being consumed. An example of whole food is garden-grown vegetables, brown sugar and meat from our own farm animals
3)	Healthy and nutritious food choices	Eat food which give high nutritional benefit and avoid unhealthy food such as alcoholic drink.
4)	Right sorts of food	Both consumers of different age groups and patients with different diseases need different sorts of food. Eating the right sorts of food produces good health.
5)	A variety of foods	Eat a variety of foods from each of five food groups. A variety of foods provide all the many different nutrients we need.

Table 4: Healthy eating and drinking advice (continued)

Order	Topic	Main ideas of advice
6)	Balanced diet	Eat the right amount of food from each of food groups.
7)	Medicinal food	If possible, eat vegetables, fruits, or other foods which contain medicinal substances instead of taking medicine or supplementary diet.

4.2.2 Consumer food preparation

Almost fifty percent of food content refers to consumer food preparation. Features of food content consist of three topics of healthy food preparation advice for consumers—food safety; nutritious and healthy food choices; and balanced diet—as shown in Table 5.

Table 5: Healthy food preparation advice

Order	Topic	Main ideas of advice
1)	Food safety	Food should be cooked, clean, and uncontaminated by chemicals.
2)	Healthy and nutritious food choices	The chosen ingredients add nutritional benefit and are healthy.
3)	Balanced diet	Prepare the right amount of food

4.2.3 Consumer food selection

Twenty percent of food content concerns consumer food selection. Features of food content are the single topic of healthy food selection advice for consumers—food safety. Main ideas are that consumers should buy food from standard food services. Before buying, they should notice natural features of food, regularly read food labels, buy newly produced food, and switch brands.

4.2.4 Consumer food storage

The fewest number of information pieces concern consumer food storage. Features of food content are two topics of healthy food storage advice for consumers—food safety; and nutritious and healthy food choices—as shown in Table 6.

Table 6: Healthy food storage advice

Order	Topic	Main ideas of advice
1)	Food safety	Keep food away from animals and diseases
2)	Healthy and nutritious food choices	Store food in proper utensils and in a place with proper degree of humidity and temperature in order to preserve nutritional benefit.

Overall, features of food content consist of seven topics of healthy food behavior for consumers—food safety; whole food; healthy and nutritious food choices; right sorts of food; a variety of foods; balanced diet; and medicinal food, respectively. Of seven topics, food safety is the only one which related to all principles of healthy food behavior for consumers—consumer’s eating and drinking, food preparation, food selection, and food storage.

1) Food safety

The food safety advice relates to consumer’s eating and drinking, food preparation, food selection, and food storage. Main ideas are that consumers should buy food from standard food service. They should consume cooked, clean, and uncontaminated food. Before buying, they should notice the natural features of food, regularly read food labels, buy newly produced food, and switch brands. Features of food content are exemplified in Table 7 on the next page.

Table 7: Food safety

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 24 Issue 288 April 2003	Eat clean and cooked Pla-ra, a condiment of fermented fish.
Col.	Kep-Khao-Ma-Fak	
Title	The doctor warns about a danger of Pla-ra (sources: Khao-Sot, Kom-Chad-Luek, Ma-Ti-Chon, Thaipost and Lok-Wan-Ni)	
P.	12	
Issue	Volume 25 Issue 299 March 2004	Eat safe and uncontaminated food.
Col.	Suk-Kha-Phap-Pen-Rueng-Ngai	
Title	Healthy Rayong; Strong Thailand	
P.	52-53	
Consumer food preparation		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 290 June 2003	Before drinking, consumers should dilute concentrated fruit juice with boiled clean water.
Col.	Rueng-Na-Ru	
Title	How many benefits we get from drinking fruit juice?	
P.	52-55	
Issue	Volume 25 Issue 291 July 2003	Use cooking oil rightly; safe from toxic chemicals, caused by misuse.
Col.	Rueng-Den-Chak-Pok	
Title	How to use vegetable oil rightly?	
P.	17-24	
Issue	Volume 25 Issue 299 March 2004	Food should be cooked until done.
Col.	Rueng-Na-Ru	
Title	Chicken in crisis	
P.	46-47	

Table 7: Food safety (continued)

Consumer food selection		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 290 June 2003	Before buying packed fruit juice, consumers should read food labels regularly.
Col.	Rueng-Na-Ru	
Title	How many benefits we get from drinking fruit juice?	
P.	52-55	
Issue	Volume 25 Issue 291 July 2003	Buy vegetable oil which is newly produced and switch brands.
Col.	Rueng-Den-Chak-Pok	
Title	How to use vegetable oil rightly?	
P.	17-24	
Issue	Volume 25 Issue 297 January 2004	Beware of coconut sugar which has bad smell, is very hard, or is too sweet.
Col.	Rueng-Na-Ru	
Title	Coconut sugar	
P.	49-51	
Issue	Volume 25 Issue 299 March 2004	Buy raw food from standard fresh food market.
Col.	Suk-Kha-Phap-Pen-Rueng-Ngai	
Title	Healthy Rayong; Strong Thailand	
P.	52-53	
Consumer food storage		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 299 March 2004	Keep food away from animals, cockroaches, house lizards, and ants. No fungus and diseases are the best.
Col.	Suk-Kha-Phap-Pen-Rueng-Ngai	
Title	Healthy Rayong; Strong Thailand	
P.	52-53	

2) Healthy and nutritious food choices

This advice relates to consumer's eating and drinking, food preparation, and food storage. Main ideas show the importance of nutritious food and the preservation

of nutritional benefit. In addition, consumers should consume healthy food, while they should avoid unhealthy one. Features of food content are exemplified in Table 8.

Table 8: Healthy and nutritious food choices

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 291 July 2003	Eating fresh vegetables and fruits is healthy. Your body will also get natural vitamin C.
Col.	Kep-Khao-Ma-Fak	
Title	Eating fruits produces antibodies to counteract disease. (source: Khao-Sot)	
P.	6	
Issue	Volume 25 Issue 292 August 2003	Avoid drinking alcohol.
Col.	Kep-Khao-Ma-Fak	
Title	Drinking alcohol and smoking produce hearing loss (sources: Lok-Wan-Ni and The manager)	
P.	8	
Consumer food preparation		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 298 February 2004	Supplementing vitamin C to Asian vegetable recipes helps the body absorb high iron. A recipe is spicy salad seasoning with lime juice.
Col.	Rueng-Den-Chak-Pok	
Title	Iron: developing life, developing brain	
P.	17-24	
Consumer food storage		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 291 July 2003	To preserve vitamin E, vegetable oil should be store in a cold and dark place.
Col.	Rueng-Den-Chak-Pok	
Title	How to use vegetable oil rightly?	
P.	17-24	

3) Balanced diet

The guide for balanced diet relates to consumer's eating and drinking, and food preparation. Main ideas are that consumers should eat the right amount of food. Features of food content are exemplified in Table 9.

Table 9: Balanced diet

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 289 May 2003	Children should drink two to three glasses of milk a day. Adults and elderly people should drink a glass of milk a day.
Col.	Tam-Top-Pan-Ha-Suk-Kha-Phap	
Title	The good and bad points of milk and eggs	
P.	42	
Issue	Volume 25 Issue 295 November 2003	Diabetics should give regard to the amount of food their body need.
Col.	Rueng-Na-Ru	
Title	Eating right to live with diabetes happily	
P.	41-43	
Consumer food preparation		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 291 July 2003	Only three tablespoons of cooking oil a day is enough for normal weight consumers.
Col.	Rueng-Den-Chak-Pok	
Title	How to use vegetable oil rightly?	
P.	17-24	
Issue	Volume 24 Issue 288 April 2003	Consumers might eat Pla-ra (a condiment of fermented fish) more often if they add Pla-ra as fish sauce or other sauces.
Col.	Kep-Khao-Ma-Fak	
Title	The doctor warns about a danger of Pla-ra (sources: Khao-Sot, Kom-Chad-Luek, Ma-Ti-Chon, Thai-post and Lok-Wan-Ni)	
P.	12	

Another four topics of healthy food behavior advice—whole food, right sorts of food, a variety of foods, and medicinal food—refer to consumer eating and drinking.

4) Whole food

The whole food is food that are unprocessed and unrefined, or processed and of course refined as little as possible before being consumed. The feature of food content is exemplified in Table 10.

Table 10: Whole food

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 299 March 2004	Eat garden-grown vegetables and meat from our own farm animals. Eating whole food is the best.
Col.	Suk-Kha-Phap-Pen-Rueng-Ngai	
Title	Healthy Rayong; Strong Thailand	
P.	52-53	

5) Right sorts of food

Main points are that eating the right sorts of food produces good health. Features of food content showing the right sorts of food for consumers of different age and patients with different diseases are exemplified in Table 11.

Table 11: Right sorts of food

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 293 September 2003	Liver disease patients should eat high fiber carbohydrates such as brown rice, whole wheat bread, taro, potato, and pumpkin.
Col.	Rueng-Den-Chak-Pok	
Title	The silent threat, the liver disease caused by hepatitis C virus (HCV)	
P.	17-22	

Table 11: Right sorts of food (continued)

Consumer eating and drinking (continued)		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 297 January 2004	Elderly people should drink unsweetened yakult. Consumers over twenty-five years who should beware of the saturated-fat consumption should drink low-fat milk.
Col.	Tam-Top-Pan-Ha-Suk-Kha-Phap	
Title	Benefits of drinking milk for elderly people	
P.	38-39	

6) A variety of foods

Main ideas are eating a variety of foods from each of five food groups to obtain many different nutrients. The feature of content is exemplified in Table 12.

Table 12: A variety of foods

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 25 Issue 298 February 2004	Eating a variety of food in the same food group is to obtain many nutrients.
Col.	Rueng-Den-Chak-Pok	
Title	Iron: developing life, developing brain	
P.	17-24	

7) Medicinal food

Main points are that if possible; eat vegetables, fruits, or other foods which contain medicinal substances instead of taking medicine or supplementary diet. The feature of content is exemplified in Table 13 on the next page.

Table 13: Medicinal food

Consumer eating and drinking		
Moh-Chao-Baan magazine		Content
Issue	Volume 24 Issue 288 April 2003	Eat Kang-Som-Dok-Khae (sour soup made of tamarind paste and vegetable hummingbird) when you have a fever. Eat sweet basils leaves when you are flatulent. Not taking medicine as food.
Col.	Suk-Kha-Phap-Pen-Rueng-Ngai	
Title	Elderly people have their heart	
P.	41-44	

4.3 Content Format Presentation

The study of content format presentation includes the study of content format and illustrations, referring to the content. Firstly, the quantitative results disclose that articles are the most popular content format during this study.

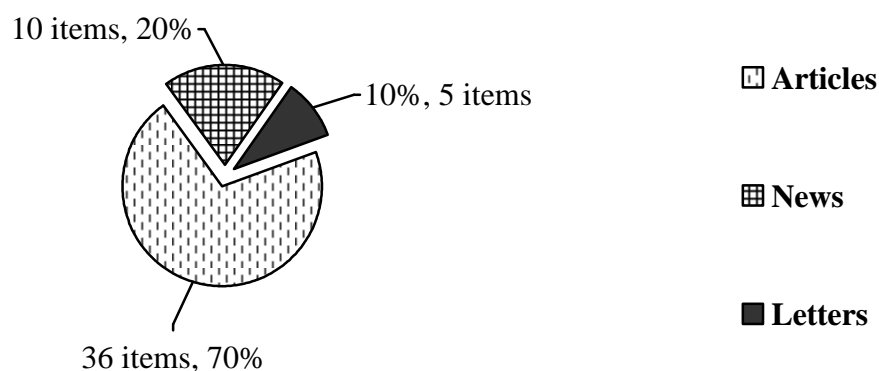
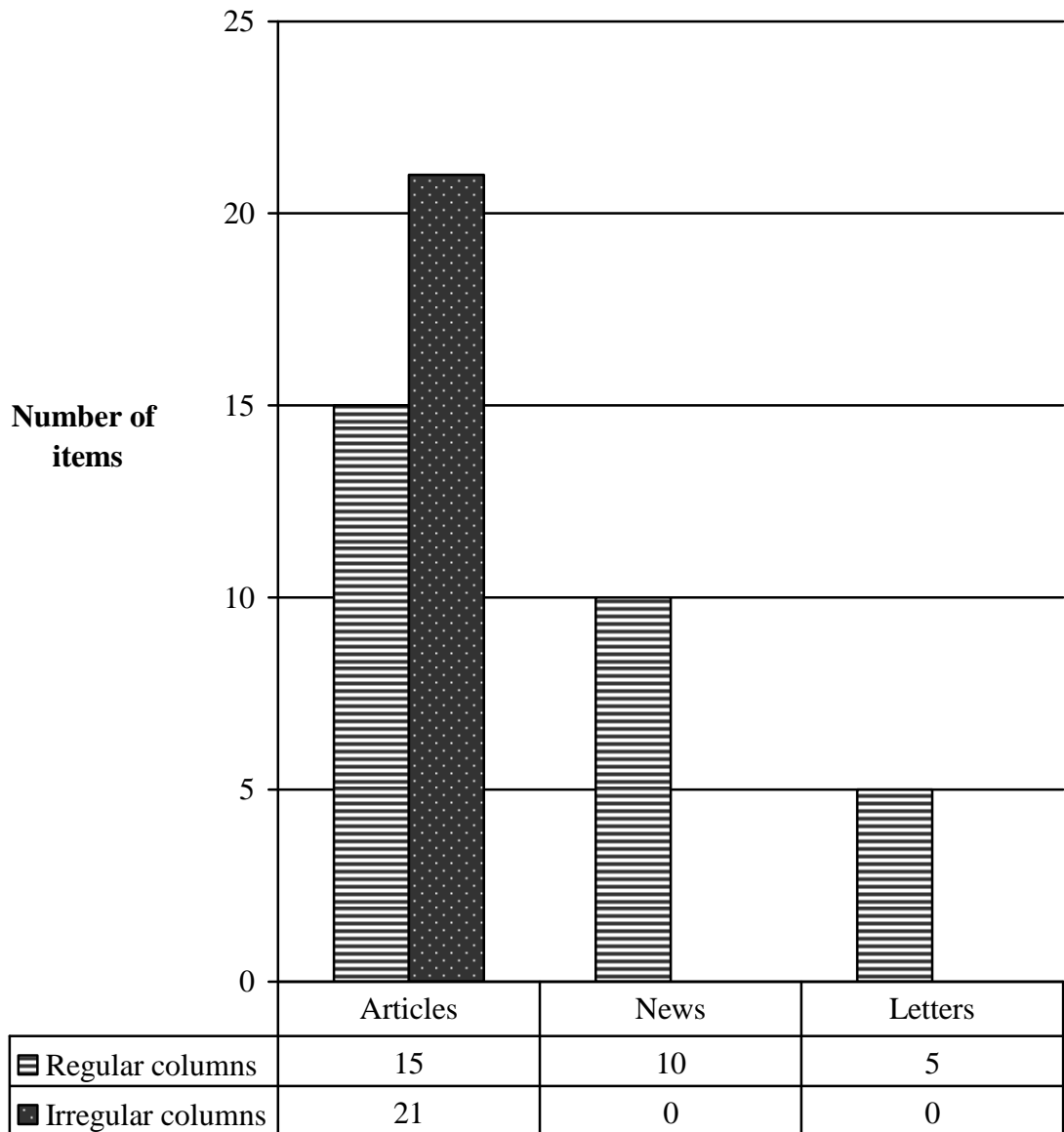


Diagram 6: Content formats

As exhibited in Diagram 6, seventy percent of food content are articles. Twenty percent is news and ten percent are letters. News and letters appear in regular columns whereas articles are both in regular and irregular columns. Articles are found more in irregular columns than in regular columns. Articles are the single content format in irregular columns as shown in Diagram 7 on the next page.



Content formats

Diagram 7: Content formats in regular and irregular columns

Although the items in irregular columns are fewer than those in regular columns, the items in irregular columns mention more about food content than those in regular columns in proportion to all the pieces of information. Nevertheless, the results of this part disclose that there is no meaningful difference because the figures shown in this study are close.

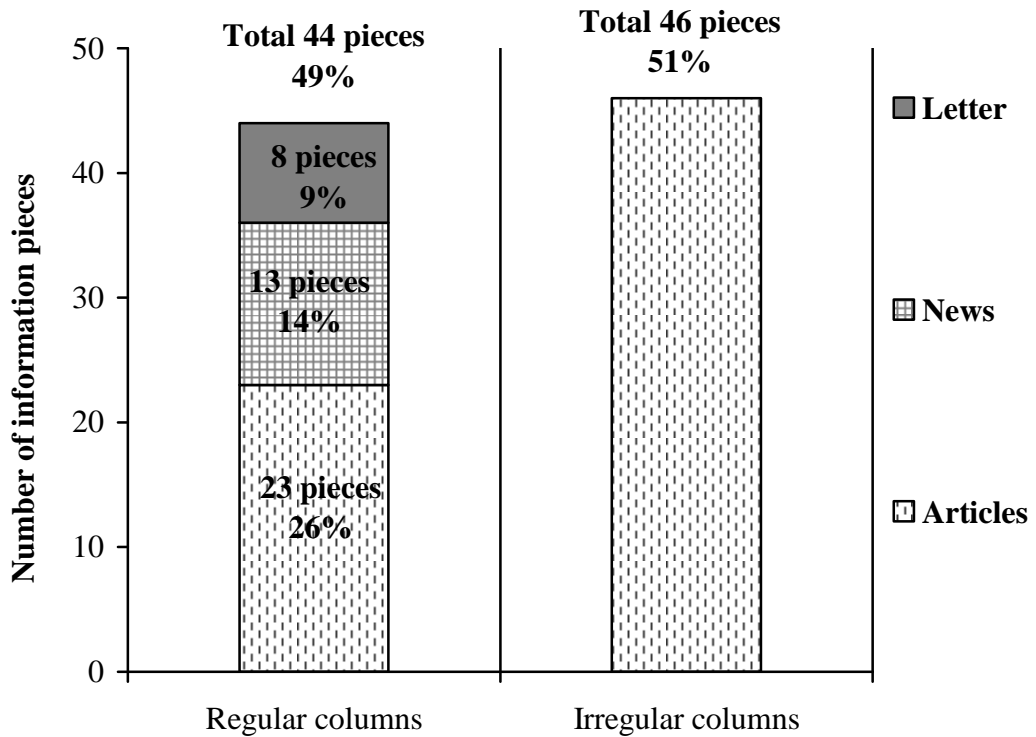


Diagram 8: Number of information pieces in regular and irregular columns

According to Diagram 8, the items in irregular columns contain forty-six pieces of information, whereas the items in regular columns contain forty-four pieces of information. The articles in irregular columns contain the most pieces of information. Overall, articles contain over seventy percent of all the pieces of information.

Concerning illustrations, the illustrations, referring to content were surveyed. Most contents are illustrated. Only ten percent of food content is not illustrated as shown in Diagram 9.

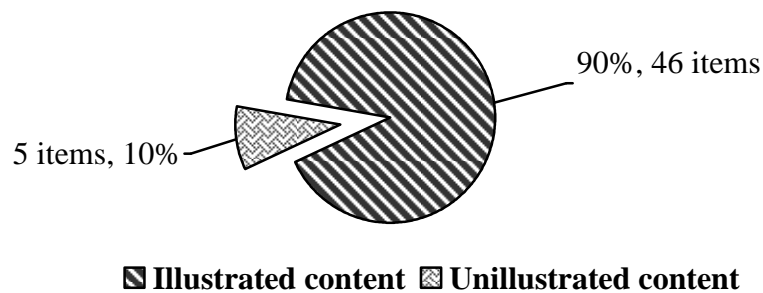


Diagram 9: Use of illustrations

Thirty-six articles, nine items of news, and one letter are illustrated; on the other hand, four letters and one item of news are not illustrated as shown in Diagram 10.

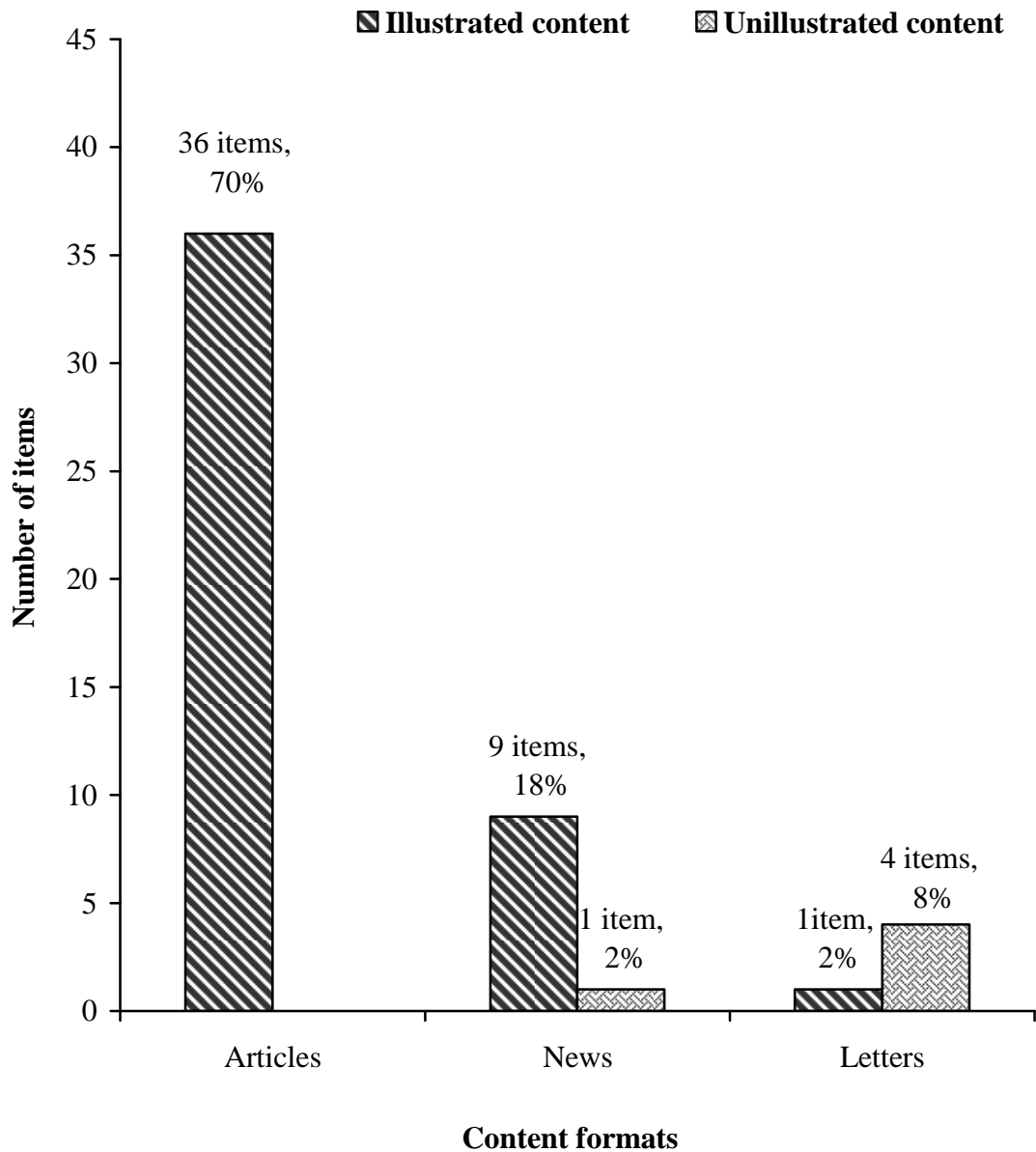


Diagram 10: Comparison of illustrated and unillustrated content formats

The results of this part reveal three format presentations—illustrated articles; illustrated and unillustrated news; and illustrated and unillustrated letters. The following part shows features of each format presentation.

4.3.1 Illustrated articles

Illustrated articles are the most popular content format. The results of this part show that sources of illustrated articles are from the content writer's knowledge; health knowledge from books, documents and websites; interviews; and researches. Concerning features of illustrated articles, thirty-six articles were scanned and the same features were grouped together. Three features of illustrated articles are found in this study. The first feature is general articles; for instance, the January issue of Moh-Chao-Baan magazine 2004 showed the information about coconut sugar from page 49 to page 51. Main ideas of this article are about the production of coconut sugar; food additives which cause health problems; and healthy food behavior for consumers. The second feature is interviews; for example, the content writer asks for an interview with Sa-nga Damapong—a health academic at Nutrition Division, Department of Health, Ministry of Public Health—to discuss how many benefits we get from drinking fruit juice. This interview information was published from page 52 to page 55 in the June issue of Moh-Chao-Baan magazine 2003. The last feature is the presentation of research results; for example, the April issue of Moh-Chao-Baan magazine 2003 showed research results about the children's obesity, caused by food habits, lifestyle, and bringing-up from page 6 to page 7.

4.3.2 Illustrated and unillustrated news

Twenty percent of food content is news. The news is between page 6 and page 12. Features of news are the concise presentation of health issues, previously published in various newspapers. The content writer of Moh-Chao-Baan magazine refers to sources of news in every item. The sources of news, found during this study, are from nine newspapers—Ban-Mueng, Naeow-Na, Khao-Sot, Kom-Chad-Luek, Ma-Ti-Chon, Thai-post, Lok-Wan-Ni, Bangkok post, and The Manager. In addition to the name of newspapers, the name of informants is also referred to. For example, the news on page 6 in the May issue of Moh-Chao-Baan magazine 2003 showed the name of the spokesperson of Ministry of Public Health—Nittaya Chanrueang Mahapon—as the informant.

4.3.3 Illustrated and unillustrated letters

The production staff of Moh-Chao-Baan magazine presents the fewest letters in proportion to any other format presentation. Features of letters are the question-answer content between magazine readers and a specialist who has knowledge to answer those questions. For example, whereas Dr. Surakiat Archananuparp answers questions about diabetes, Associate Professor Dr. Visit Javavit (a specialist from the institutes of nutrition, Mahidol University) answers questions about the nutritional value of milk.

The following part contains examples of format presentation. Illustration series are as follows:

The figure 1 is the general article.

The figure 2 is the interview.

The figure 3 is the presentation of research results.

The figure 4 is the illustrated news.

The figure 5 is the unillustrated news.

The figure 6 is the illustrated letter.

The figure 7 is the unillustrated letter.



Figure 1: General article

Volume 25 Issue 297 January 2004 Column: Rueng-Na-Ru

Title: Coconut sugar



ชนิดของน้ำผลไม้

น้ำผลไม้ที่เรารู้จักกันดีที่มีขายอยู่นอกห้างและในห้างสรรพสินค้า ซึ่งมีทั้งชนิดคั้นสด บรรจุกล่อง บรรจุขวด ฯลฯ หลากหลายรูปแบบนั้น ความจริงแบ่งได้เป็น ๒ ประเภทเท่านั้น คือ

๑. น้ำผลไม้สด หมายถึงน้ำผลไม้ที่คั้นสำหรับดื่มสดๆ โดยไม่เติมสารปรุงแต่งใดๆ ทั้งสิ้น อย่างเช่น น้ำส้ม หรือน้ำฝรั่ง ที่คั้นกันสดๆ หรือบรรจุขวดแช่น้ำแข็งขาย

๒. น้ำผลไม้ที่ผ่านกระบวนการ หมายถึงน้ำผลไม้ที่ผลิตขึ้นด้วยวิธีการถนอมอาหาร โดยใส่สารกันบูด หรือสารปรุงแต่งอื่นๆ เพื่อยืดอายุการเก็บให้นานขึ้น ซึ่งน้ำผลไม้ประเภทนี้ก็ยังมีหลายรูปแบบ เช่น

น้ำผลไม้ชนิด ๑๐๐ เปอร์เซ็นต์ ที่ทำจากผลไม้สดที่หาได้ง่ายในห้องกิน เช่น ส้ม ฝรั่ง สับปะรด เป็นต้น โดยไม่เติมกรด หรือน้ำตาล ซึ่งน้ำผลไม้ชนิด ๑๐๐ เปอร์เซ็นต์นี้จะมีรสชาติใกล้เคียงน้ำผลไม้คั้นสดมากที่สุด

น้ำผลไม้ผสม น้ำผลไม้ประเภทนี้อาจมีน้ำผลไม้ผสมอยู่มากกว่า ๑ ชนิด และส่วนใหญ่มักจะเติมน้ำตาล สารกันบูด สี และสารปรุงแต่งกลิ่นรสลงไปด้วย โดยมีน้ำผลไม้เป็นส่วนประกอบหลัก ๔๐ เปอร์เซ็นต์ หรือ ๖๐ เปอร์เซ็นต์

น้ำผลไม้ยูเอชที น้ำผลไม้ประเภทนี้อาจผลิตจากผลไม้สด หรือน้ำผลไม้เข้มข้น (ที่ต้องมาทำให้เจือจาง) ๒๐ เปอร์เซ็นต์ ถึง ๑๐๐ เปอร์เซ็นต์ แล้วบรรจุขวด หรือใส่ภาชนะกล่องสุญญากาศ เพื่อให้เก็บได้นานวัน

มิถุนายน ๒๕๔๖

ดื่มน้ำผลไม้ได้ประโยชน์อะไร

ในบรรดาอาหารชนิดต่างๆ ที่เรากิน ผักสด ผลไม้สด จะให้วิตามินและแร่ธาตุที่เป็นประโยชน์ต่อร่างกายมากมายหลายชนิดแล้ว ถ้าหากแปรรูปมาเป็นน้ำผักหรือน้ำผลไม้ เราจะยังได้รับคุณค่าทางสารอาหารครบถ้วนเท่าเดิม เท่าที่ควรจะได้หรือเปล่า ไปฟังคำตอบจากนักวิชาการด้านอาหารกันค่ะ อาจารย์สง่า ดามาพงษ์ นักวิชาการสาธารณสุข ๔ กองโภชนาการ กรมอนามัย กระทรวงสาธารณสุข



“คุณค่าของน้ำผลไม้ทั้ง ๒ ชนิด ถ้าเปรียบเทียบคุณค่าจะใกล้เคียงกัน แต่ถ้าเทียบระหว่างผลไม้และน้ำผลไม้สดๆ ผลไม้สดย่อมดีกว่าน้ำผลไม้แน่นอน ซึ่งได้วิตามินเต็มที่ เพราะระหว่างที่คั้นผลไม้ อาจจะมีสัมผัสกับแสงแดด และระหว่างการเก็บจะทำให้วิตามินและแร่ธาตุบางชนิดสูญหายไป

เช่น วิตามินซี หรือวิตามินเอ เมื่อโดนแสงก็สลายไปหมด

อีกประการหนึ่ง การที่คนหันมานิยมดื่มน้ำผลไม้ สิ่งที่จะขาดไปคือใยอาหาร ซึ่งคนปัจจุบันกินผักน้อยลงมาก จึงได้ไฟเบอร์หรือใยอาหารน้อย นักโภชนาการเองเคยหวังว่า เมื่อคนกินผักน้อยหรือไม่ชอบกินผัก (จะด้วยเหตุผลว่าผักไม่อร่อย หรือขี้เกียจเคี้ยวก็ตามที) ประชาชนก็จะหันมาดื่มน้ำผลไม้ให้มากขึ้น แต่กลับกลายเป็นว่าแทนที่จะกินผลไม้สดๆ กลับไปกินน้ำผลไม้แทนเพราะสะดวก สบาย ไม่ต้องเคี้ยว ผลคือทำให้ได้ใยอาหารต่ำ

ไฟเบอร์ไม่ใช่สารอาหาร แต่เป็นไฟโตเคมีคอล เป็นสารที่อยู่ในผักและผลไม้ ซึ่งมีคุณสมบัติอ่อนน้ำ แล้วขณะดื่มน้ำก็เกิดน้ำหนึบ ก็เลยไหลผ่านระบบลำไส้ กระเพาะ แล้วขณะที่ไหลมันก็จะไปกวาดเอาน้ำตาล ไขมัน โคลเลสเตอรอล หรือสารก่อมะเร็งออกไปจากร่างกายด้วย ฝรั่งจึงกล่าวว่าไฟเบอร์ที่ได้จากผัก ผลไม้ เปรียบประดุจไม้กวาด ที่กวาดเอาสิ่งที่ไม่ดีออกจากร่างกาย

ปัจจุบันนักวิชาการให้ความสำคัญกับเรื่องไฟเบอร์มาก จริงๆ ก็พูดกันมานาน แต่ไม่เป็นข่าวเหมือนทุกวันนี้ และที่เป็นข่าวมากก็เพราะคนทั่วโลกกินผัก ผลไม้ไม่เพียงพออย่างน่าตกใจ โดยเฉพาะผัก เมื่อไม่กินผักไม่กินผลไม้ โรคมะเร็งก็ตามมา เพราะฉะนั้นระยะหลังคนจึงเป็นโรคมะเร็งใช้เจ็บกันเยอะมาก”

โทร. ๐-๒๕๕๕๑-๐๐๐๐ กด ๒ กด ๑ กด ๗๐๑๑

นพ.ชาวกาน ๕๓

Figure 2: Interview

Volume 25 Issue 290 June 2003 Column: Rueng-Na-Ru

Title: How many benefits we get from drinking fruit juice



คอลัมน์นี้นำเสนอทิศทางการวิจัยและผลงาน การวิจัยปัญหาสุขภาพที่พบบ่อยในบ้านเรา เพื่อให้ ผู้อ่านรู้เท่าทันปัญหา และนำผลการวิจัยไปใช้ประโยชน์ ในวงกว้างต่อไป

ทั้งนี้ โดยความเอื้อเฟื้อจาก “สำนักงาน กองทุนสนับสนุนการวิจัย” (สกว.) และ “มูลนิธิ สาธารณสุขแห่งชาติ”



เด็กไทย กับนิสัยการกิน

ป้องกันการระบาดของโรคอ้วนจึงมีความสำคัญและ จำเป็นอย่างยิ่ง

สาเหตุสำคัญของการเกิดโรคอ้วนหรือภาวะ โภชนาการเกิน นอกจากจะเกี่ยวข้องกับปัจจัยทาง พันธุกรรมแล้ว สิ่งแวดล้อมก็นับว่ามีส่วนสำคัญไม่ น้อย คำนิยมของพ่อแม่ที่คิดว่าเด็กอ้วนสมบูรณ์เป็น เด็กแข็งแรง และนำรักนำเอ็นดู รวมทั้งการสนับสนุน และต้องการให้ลูกเจริญอาหาร กินให้มากและกิน ให้หมด ก็มีส่วนสนับสนุนให้เด็กอ้วนด้วย นอกจากนี้ ลักษณะอาหารที่เด็กและครอบครัวเลือกกิน ตลอดจน รูปแบบการดำเนินชีวิตและกิจกรรมที่ปฏิบัติในชีวิต ประจำวัน ก็มีผลสำคัญอย่างมากในการส่งเสริมให้ เด็กอ้วนมากขึ้น

จากการศึกษาและทบทวนเอกสารวิชาการ สามารถสรุปลักษณะพฤติกรรมกระบริโภคน และวิถี ชีวิต ตลอดจนลักษณะการเลี้ยงดูที่ส่งเสริมให้เด็ก อ้วนหรือมีภาวะโภชนาการเกิน ได้ดังนี้

วัยทารก (๐-๑ ปี) เด็กที่ได้รับนมผสมจะมี โอกาสเกิดภาวะโภชนาการเกินมากกว่าเด็กที่ได้รับ นมแม่ถึงร้อยละ ๒๐ มารดาที่เลี้ยงทารกด้วยนม ผสม มักให้ทารกดูดนมบ่อยและปริมาณมากเกินไป ความต้องการ ซึ่งพบว่าเด็กที่ได้รับขวดนมใส่ปาก ทุกครั้งที่ร้องให้หรือโยเย มีแนวโน้มที่จะมีภาวะ โภชนาการเกิน นอกจากนี้ มีรายงานว่าลักษณะการ ดูดนมของทารกมีความสัมพันธ์กับปริมาณไขมันที่ สะสมในร่างกาย ทารกที่ดูดนมแรง เร็ว และแต่ละ

โรคอ้วนหรือภาวะโภชนาการเกิน กลายเป็น โรคที่กำลังระบาดอยู่ทั่วโลก ทั้งในประเทศที่พัฒนา แล้วและที่กำลังพัฒนา มีรายงานว่าประมาณร้อยละ ๕๕ ของประชากรผู้ใหญ่ในประเทศสหรัฐอเมริกา มีภาวะโภชนาการเกิน นอกจากนี้ยังพบว่าในเด็กทุก ๔ คน จะเป็นเด็กที่มีภาวะโภชนาการเกิน ๑ คน สำหรับประเทศไทยเองก็พบว่า มีประชากรที่เป็นโรค อ้วนเพิ่มมากขึ้นในทุกกลุ่มอายุ

โรคอ้วนเมื่อเกิดขึ้นกับใครมักทำให้เกิดผลเสีย ต่อสุขภาพทั้งร่างกายและจิตใจได้ เช่น ปวดข้อ ข้อ อักเสบ ขาโก่ง เหนื่อยง่าย ขาดความมั่นใจในตนเอง เครียด หรือมีปัญหาทางอารมณ์ และซึมเศร้า นอกจากนี้ ในเด็กที่เป็นโรคอ้วนยังมีโอกาสเสี่ยงต่อการ เป็นโรคอื่นๆ เช่น โรคเบาหวานชนิดที่ ๒ โรคความดันเลือดสูง โรคหลอดเลือดหัวใจ โรคไขมันในเลือด สูง ดังนั้น โรคอ้วนจึงมีผลกระทบต่อบุคคล ครอบครัว และสังคม ซึ่งนับเป็นมหันตภัยเงียบที่น่ากลัว การ

Figure 3: Presentation of research results

Volume 24 Issue 288 April 2003 Column: Na-Tang-Wi-Chai

Title: Thai children and their eating habits

กินผลไม้สร้างภูมิคุ้มกันทางไกล : ชาวสด

นางนิตยา จันทรเรือง : ทานผลไม้ชุกชุมจะช่วยให้ร่างกายแข็งแรง สุขสบาย ป้องกันโรคภัยไข้เจ็บได้เป็นอย่างดี และยังช่วยให้ร่างกายรับวิตามินจากธรรมชาติ โดยเฉพาะวิตามินซี จะเพิ่มประสิทธิภาพของเม็ดเลือดขาว ทำให้ภูมิคุ้มกันทางไกลในร่างกายแข็งแรงขึ้น ช่วยลดการแพ้จากอากาศ อดระยะเวลาการเป็นหวัดลงร้อยละ ๓๗ ลดความรุนแรงของหวัดลง ๒ เท่า และลดอาการไอลง ๓ เท่า วิตามินซีพบมากในพืช ผลไม้ แต่เสื่อมสลายง่าย เช่น วิตามินซี ๑๐๐ มิลลิกรัม หากเก็บไว้นานกว่า ๑ สัปดาห์



วิตามินซีในส้มจะเหลือเพียง ๑ มิลลิกรัมเท่านั้น ส่วนในผักจะสลายไปร้อยละ ๙๐ ภายใน ๑๐ วัน การปรุงด้วยความร้อนเพียง ๑๕ นาที วิตามินซีจะสลายไปถึงร้อยละ ๒๕ หากปรุงนาน ๙๐ นาที จะสลายไปถึงร้อยละ ๗๕ และจากการศึกษาพบว่า คนไข้กลุ่มที่เป็นมะเร็งร้อยละ ๗๐ จะขาดวิตามินซี...✠

๖ หมอชาวบ้าน วิธีการส่งตัวอย่างอาหารกระป๋องเพื่อขอหนังสือรับรองคุณภาพ

Figure 4: Illustrated news

Volume 25 Issue 291 July 2003 Column: Kep-Khao-Ma-Fak

Title: Eating fruits produces antibodies to counteract disease (source: Khao-Sot)

ดื่มแอลกอฮอล์ ผิวพรรณ เหี่ยวห่อ่น

แอลกอฮอล์ทำให้เปลือกตาบวม ผิวพรรณซีด
เหี่ยวแห้ง หย่อนยาน เป็นสิ่ว และไฟแดง รวม
ถึงการขาดวิตามินบี

นายแพทย์ประวิตร พิศาลบุตร แพทย์ผิวหนัง
เปิดเผยถึงผลเสียของแอลกอฮอล์ต่อผิวหนังว่า ขณะนี้
หลายคนเข้าใจว่าการสูบบุหรี่ทำให้แก่ก่อนวัย เพราะกระทรวง
สาธารณสุขได้กำหนดให้บริษัทบุหรี่เขียนคำเตือนชัดเจนที่ซอง
บุหรี่ว่า การสูบบุหรี่ทำให้แก่เร็ว เนื่องจากนิโคตินในบุหรี่ทำให้
การไหลเวียนของเลือดช้าลง ทำให้ผิวบาง ผิวหย่อนยานและ
ผิวแห้ง เกิดมะเร็งผิวหนังได้ง่ายขึ้น เวลาเกิดแผลจะหายช้า
หลายคนจึงเลิกสูบบุหรี่แต่หันมาดื่มเครื่องดื่มแอลกอฮอล์แทน

แอลกอฮอล์ส่งผลเสียต่อสุขภาพ ทำให้เป็นโรคตับ โรค
กล้ามเนื้อหัวใจ หลอดเลือดหัวใจอุดตัน หัวใจเต้นผิดปกติ
หลอดเลือดในสมองแตก ทารกในครรภ์พิการ มะเร็งเต้านม
กล้ามเนื้ออ่อนแรง และอาจเกิดอุบัติเหตุเมื่อขับรถ

นอกจากผลต่อสุขภาพกายทั่วไปแล้ว การดื่มแอลกอฮอล์
ทำให้เกิดผลเสียต่อสุขภาพผิวหนัง ทำให้เปลือกตาบวม ผู้ที่
ดื่มจัดร่างกายจะขาดวิตามินบี ซึ่งผิวหนังต้องอาศัยวิตามินบี
ทำให้ผิวหนังซีด เหี่ยวแห้ง หย่อนยาน เป็นสิ่ว และไฟแดง
และยังทำให้อาการของโรคสะเก็ดเงิน ซึ่งมักเป็นปื้นนูนแดง
มีสะเก็ดสีเงินปกคลุม พบบ่อยที่ข้อศอก หัวเข่า ลำตัว และ
แนวไรผม โรคสะเก็ดเงินจะมีอาการกำเริบรุนแรงเมื่อดื่ม
แอลกอฮอล์... ❀

ข้อมูล : หนังสือพิมพ์ผู้จัดการ

Figure 5: Unillustrated news

Volume 25 Issue 295 November 2003 Column: Kep-Khao-Ma-Fak

Title: Drinking alcohol; wrinkled skin (source: The manager)

? ประโยชน์การดื่มนมสำหรับผู้สูงอายุ

ผู้ถาม : ช่างาน/กรุงเทพฯ

ผมอายุ ๘๓ ปี อยากทราบว่า
๑. นมเปรี้ยว โยเกิร์ต ยา-
คูลท์ มีประโยชน์มาก-น้อยแค่ไหน
(ผู้สูงอายุตั้งแต่ ๖๐ ปีขึ้นไป กิน
ได้หรือไม่)

๒. นมผง นมผงขาดมันเนย
หรือนมพร่องไขมันคืออะไร
แตกต่างกันอย่างไร

๓. ทางนมผงคืออะไร มีประ-
โยชน์มาก-น้อยแค่ไหน

๔. ข้อแตกต่างและประโยชน์
ของเนยอ่อน เนยเทียม เนยแข็ง
คืออะไร

กรุณาช่วยตอบด้วยนะครับ

ผู้ตอบ : สก.อส.วิสิฐ จว.สิด

๑. นมเปรี้ยว โยเกิร์ต ยา-
คูลท์ มีประโยชน์มาก-น้อยดังนี้
ประโยชน์ของโยเกิร์ตชนิดครีม คือ

- ให้โปรตีน ไขมัน และแคล-
เซียมเท่ากับนมสดในปริมาณเท่ากัน

- มีปริมาณน้ำตาลนม (น้ำ-
ตาลแล็กโทส) ลดลง และมีน้ำย่อย
จากจุลินทรีย์ จึงช่วยลดอาการท้องอืด
ท้องเฟ้อ และท้องเสียจากการบริโภค
นมในคนบางกลุ่ม

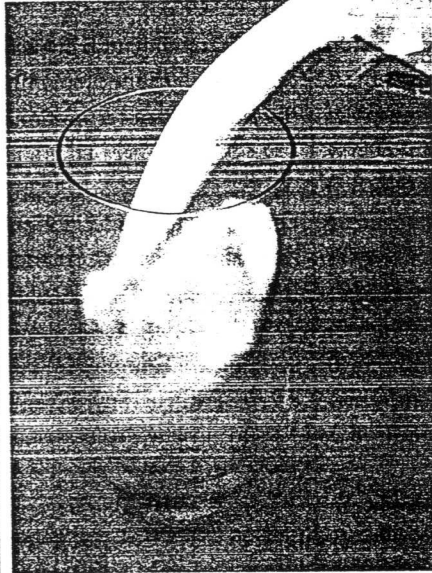
- มีเชื่อที่เป็นประโยชน์ต่อ
ทางเดินอาหาร ลดการท้องเสีย

ประโยชน์ของนมเปรี้ยวชนิดดื่ม คือ

- ให้โปรตีน ไขมัน แคลเซียม

แต่ไม่สูงเท่านมสด เพราะถูกเจือจาง
โดยน้ำเชื่อมใสและกลั่น

๓๘ หมอชาวบ้าน



ควรเลือก ชนิดที่
ยังมีจุลินทรีย์ที่มี
ชีวิตอยู่

๒. นมผง
นมผงขาดมันเนย
หรือนมพร่องไขมัน
คือ

- นมผง
ธรรมดา (Whole
milk powder) :
คือนมโคที่ถูกนำ
ไประเหยน้ำออก
ด้วยกระบวนการ
สเปรย์ดรายจน
แห้งเป็นผง จึงให้
คุณค่าทางโภชนา-
การใกล้เคียงกับ

- มีปริมาณน้ำตาลนม (น้ำ-
ตาลแล็กโทส) ลดลง และมีน้ำย่อย
จากจุลินทรีย์ จึงช่วยลดอาการท้อง
อืด ท้องเฟ้อ และท้องเสียจากการ
บริโภคนมในคนบางกลุ่ม

- มีเชื่อที่เป็นประโยชน์ต่อ
ทางเดินอาหาร ลดการท้องเสีย
ยกเว้นในกรณีที่นมเปรี้ยวถูกนำไป
พาสเจอร์ไรส์ หรือบรรจุกล่องยูเอชที
ก็จะมีประโยชน์ในข้อนี้

ประโยชน์ของยาคูลท์ คือ

- มีเชื่อที่เป็นประโยชน์ต่อ
ทางเดินอาหาร ลดการท้องเสีย

ในผู้สูงอายุควรเลือกบริโภค
ชนิดที่ไม่หวาน หากเลือกชนิด
หวานก็ดื่มไม่ได้มาก นอกจากนี้

จำเพาะเชิญ : บังเอิญ แมอิญ

นมสดชนิดธรรมดา หลังจากนำไป
ละลายน้ำแล้ว

- นมผงขาดมันเนย (Skim
milk powder) : คือนมโคที่ถูกนำ
ไปแยกไขมันออกไปหมด (เหลือไม่
เกินร้อยละ ๑) แล้วจึงนำนมดังกล่าว
ไประเหยน้ำออกด้วยกระบวนการ
สเปรย์ดรายจนแห้งเป็นผง นมผง
ชนิดนี้เมื่อนำไปละลายน้ำจะมีคุณค่า
โภชนาการคล้ายนมสดชนิดธรรมดา
แต่ไม่มีไขมัน นมที่ขาดมันเนย บาง
ครั้งเรียกว่าทางนม นมชนิดนี้เหมาะ
สำหรับผู้สูงอายุ ผู้ที่ควบคุมน้ำหนัก
และระดับโคเลสเตอรอล


- นมพร่องมันเนย (Low
fat milk) : คือนมโคที่ถูกแยก

ปีที่ ๒๕ ฉบับที่ ๒๕๗

Figure 6: Illustrated letter

Volume 25 Issue 297 January 2004 Column: Tam-Top-Pan-Ha-Suk-Kha-Phap

Title: Benefits of drinking milk for elderly people

ถาม-ตอบ  ปัญหาสุขภาพ

การกินอาหารและข้อปฏิบัติสำหรับคนเป็นโรคเบาหวาน

ถาม : กกดี/อุรสาบี
 ผมมีปัญหาลดน้ำหนักลงจนหมด
 ให้ความกระจ่างผมด้วย
 ผมอายุ ๔๗ ปี ไปตรวจ
 เบาหวานครั้งแรก โดยอดอาหาร
 หลังเที่ยงคืน เพราะต้องตรวจตอน
 ๘ โมงเช้า ผลตรวจเลือดได้ ๑๒๖
 mg/dl หมอบอกให้งดของหวาน
 และอาหารจำพวกแป้ง
 ครั้งที่ ๒ อีก ๑ เดือนก็หนักให้
 มาตรวจอีก ผลเลือดได้ ๔๕ mg/dl
 ครั้งที่ ๓ อีก ๒-๓ เดือน
 ก็มาตรวจผลเลือด จะได้ (๘๕-๙๐-
 ๑๐๒-๙๕ บ้าง)
 ผมเคยถามคุณหมอมือที่คลินิก
 แถวบ้านหลายท่านจะตอบไม่ตรง
 กัน บางท่านก็บอกว่าให้หลีกเลี่ยง
 ของหวานจัด บางท่านก็บอกว่ากิน
 ได้ปกติ และผมก็ยิ่งเคยถามคนที่
 เป็นเบาหวานที่ตรวจได้ ๑๕๐ mg/
 dl เขาก็บอกว่าเขากินอาหารตาม
 ปกติ (ผมเคยสู่มตรวจเลือดโดยกิน
 อาหาร ๒ ชั่วโมง ผลตรวจที่ได้
 ๑๒๐ mg/dl)
 ผมจึงอยากทราบว่
 - ผลเลือดที่ตรวจได้ ผม
 ปกติไหม
 - แล้วจะกินอาหารได้อย่างไร
 คนปกติได้หรือเปล่า
 - และผมควรจะปฏิบัติตัว
 อย่างไร
 ขอความกรุณาคุณหมอสช่วย
 ตอบด้วยนะครับ


ตอบ : พว.สุรเกียรติ์ อาษาบุญภาพ
 ตามที่เล่ามา เข้าใจว่าคุณไม่ได้
 มีอาการผิดปกติอะไร (เช่น กระหาย
 น้ำบ่อย ปัสสาวะบ่อย ซึ่งเป็นอาการ
 ของโรคเบาหวาน) แต่บังเอิญไป
 ตรวจเช็คสุขภาพ พบว่ามีระดับ
 น้ำตาลในเลือด (หลังอดอาหาร ๖
 ชั่วโมง) ๑๒๖ มก./ดล. (หรือ มก.
 ต่อเลือด ๑๐๐ มล.) ตัวเลขนี้
 ทางแพทย์ถือว่าสูงผิดปกติ แต่
 การตรวจเช็คเพียงครั้งเดียว ยังไม่
 วินิจฉัยว่าเป็นเบาหวาน จะต้องตรวจ
 เลือดซ้ำอีกซักครั้ง ถ้ายังพบว่ามีค่า
 ตั้งแต่ ๑๒๖ มก./ดล. ขึ้นไป ก็
 จะวินิจฉัยว่าเป็นเบาหวานระยะแรก
 หรือระยะไม่มีอาการแสดง แต่ก็
 ถือว่าเป็นโรคที่ต้องควบคุม หาก
 ปล่อยทิ้งไว้ระยะยาวก็อาจมีโรคต่างๆ
 แทรกซ้อนตามมาได้
 แต่ผลการตรวจครั้งที่ ๒ และ
 ครั้งต่อๆ มา ระดับน้ำตาลในเลือด
 อยู่ในเกณฑ์ปกติตลอด เช่นนี้ก็ยิ่ง
 ถือว่าไม่ได้เป็นเบาหวาน
 หากคุณมีกรรมพันธุ์เป็นเบา-
 หวาน หรือมีน้ำหนักตัวมาก ก็ควร
 จะระมัดระวังอย่ากินของหวานมาก
 และควรลดน้ำหนักตัวถ้าอ้วน โดย
 หลีกเลี่ยงอาหารที่ให้แคลอรีสูง (ของ
 มันๆ เช่น กะทิ) และออกกำลังกาย
 สม่ำเสมอ และควรตรวจน้ำตาล
 ในเลือดทุก ๓-๖ เดือน หรือตาม
 คำแนะนำของแพทย์ที่ตรวจ
 แต่ถ้าหากไม่มีกรรมพันธุ์เป็น
 เบาหวาน และน้ำหนักตัวไม่มาก ก็
 สามารถกินอาหารได้ตามปกติ (ก็
 คงหมายถึงว่า ไม่กินอาหารหวาน
 จัดในปริมาณมากกว่าคนปกติทั่วไป)
 และควรตรวจน้ำตาลในเลือดทุก ๑-
 ๓ ปี ตามที่แพทย์จะเห็นสมควร
 สรุปก็คือถ้าตรวจพบว่า มีระดับ
 น้ำตาลในเลือดสูงเล็กน้อยเพียงครั้ง
 เดียว ไม่ได้บ่งชี้ว่าเป็นเบาหวานแต่
 อย่งใด แต่ควรดูแลสุขภาพตนเอง
 ตามหลักทั่วไปคือ ระวังเรื่องอาหาร
 การกิน ออกกำลังกาย และควบคุม
 น้ำหนักตัว และควรจะติดตามตรวจ
 เลือดเป็นช่วงๆ ต่อไป 

Figure 7: Unillustrated letter

Volume 25 Issue 296 December 2004 Column: Tam-Top-Pan-Ha-Suk-Kha-Phap

Title: Eating and practices for diabetics

4.4 Health Communication Objectives

Health communication objectives include disease prevention, health promotion, treatment, and rehabilitation. Based on the quantitative data of this study, almost fifty percent of food content is for disease prevention. For this reason, disease prevention is the main objective during this study. The second objective is health promotion which includes twenty-five percent of food content. Treatment is the third objective which includes twenty percent, whereas rehabilitation—the fourth objective—includes six percent as shown in Diagram 11.

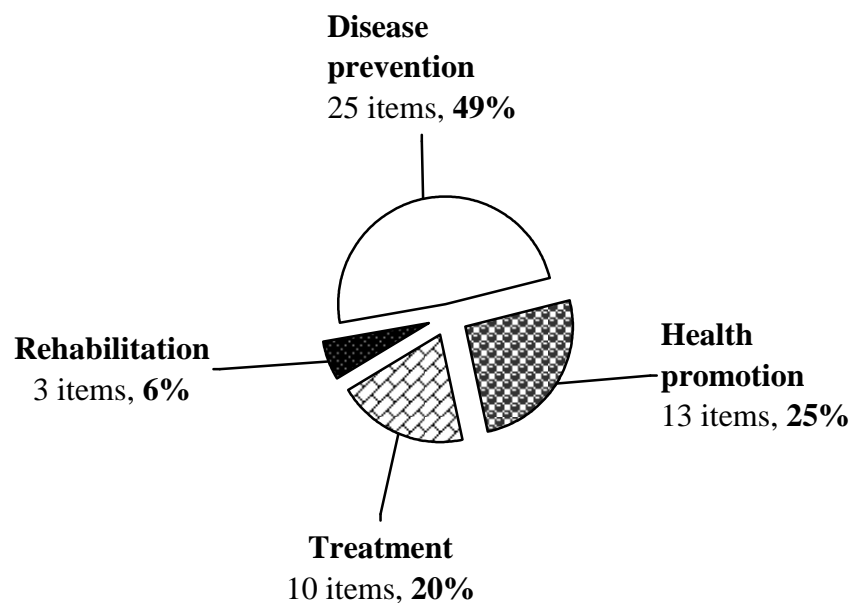


Diagram 11: Health communication objectives

Concerning the qualitative results, features of food content manifest health communication objectives. In addition, the titles of fifty-one items, showing the name of diseases or sorts of food are taken into consideration. Based on this study, thirty-two titles show some diseases and some sorts of food. For this reason, the name of diseases and the sorts of food shown in titles are significant. These titles reveal the name of diseases and the sorts of food which get media attention during this study. The following part is the details of qualitative results. The presentation is put in order according to quantitative results.

4.4.1 Disease prevention

As mentioned above, disease prevention is the main objective. Four topics of food content— consumer's eating and drinking, food preparation, food selection, and food storage—show the health communication objective for disease prevention. Considering the titles, the sorts of food leading to disease prevention are chicken; Pla-ra (a condiment of fermented fish); eggs; green beans; starch; palm sugar; fruits; reused cooking oil; vegetable oil; children's sweet; and alcohol. For example, avian influenza (Bird Flu) is preventable by eating cooked chicken. Obesity is preventable by eating little sweet. Eating eggs decreases the risk of Alzheimer disease. Avoiding eating starches with carcinogens—the substance that produces cancer—and avoiding drinking alcohol decrease some risks of cancer. Paying attention to selecting coconut sugar carefully decreases health risks, caused by food contamination. The production staff of Moh-Chao-Baan magazine shows the importance of disease prevention. The following presentation is of health practices for disease prevention. The health practices are divided into five parts according to the name of diseases—cancer; heart and vascular disease; diabetes; erectile dysfunction; and hearing loss.

1) The prevention of cancer

Cancer is preventable. One way to prevent cancer is a decrease of some risk factors; for example, do not eat Pla-ra (a condiment of fermented fish); decrease risk factors. Consumers who like to eat Pla-ra should beware of gall-bladder cancer, especially consumers in the 40-50 age-bracket. They should stop eating raw Pla-ra and eat other sorts of food instead; otherwise, they should eat cooked and clean Pla-ra. They should not eat the same dish repeatedly and should not eat Pla-ra more than once or twice a week. They might eat Pla-ra more often if they add Pla-ra as fish sauce or other sauces. As another example, reused cooking oil contains carcinogens—the substance that produces cancer. Some food services cook by using reused cooking oil; therefore, consumers should select food carefully from the mentioned food services. In addition, eating fruits is another way to prevent cancer. According to research results, seventy percent of cancer patients lack vitamin C. Eating fruits can prevent cancer because fruits are rich in vitamins, especially vitamin C that produces antibodies to

counteract diseases. However, vitamin C easily diminishes. For example, 100 mg. of vitamin C in oranges reduces to 1 mg. of vitamin C after stored over a week.

Sources: The news on page 12 in the April issue 2003

The news on page 9 and the article on page 31 in the May issue 2003

The news on page 6 in the July issue 2003

2) The prevention of heart and vascular disease

The right sorts of food are essential to long term disease prevention. Consumers should eat less fatty meats, salty food, and food with trans-fatty acid such as fried food and margarine. Furthermore, regularly eating over saturated fat can cause artery stenosis (a narrowing or blockage of the artery that supplies blood to the body). Food should be cooked by using only a little vegetable oil. Only three tablespoons a day is enough for normal weight consumers. In addition, they should increase the proportion of healthy foods such as vegetables, fruits, fish and grains. An example of grains is green beans which can decrease the risk of vascular disease.

Sources: The article on page 51 in the June issue 2003

The article on page 20 and 23 in the July issue 2003

The article on page 11 in the January issue 2004

3) The prevention of diabetes

The right eating habits should be taken into focus. Consumers who have the heredity factors in diabetes or overweight consumers should beware of eating sweet. They should avoid eating high-calories food such as coconut milk. On the other hand, consumers who do not have the heredity factors in diabetes and normal weight consumers can eat food normally. However, they should not eat too much sweet food.

Source: The letter on page 38 in the December issue 2003

4) The prevention of erectile dysfunction

Due to the health information that good physical health creates good sexual health, consumers should eat healthy food or a variety of food according to nutrition.

Source: The article on page 24 in the August issue 2003

5) The prevention of hearing loss

Consumers should avoid drinking alcohol because it is a cause of hearing loss.

Source: The news on page 8 in the August issue 2003

4.4.2 Health promotion

As with disease prevention, the results of this part identified four topics of food content which show health promotion. Considering the titles of thirty-two items, these titles do not show the name of diseases. Nevertheless, these titles show the sorts of food leading to health promotion—eggs, fish meat, Khao-Rad-Kaeng-Khiao-Wan, Miang-Kham, Khao-Tang-Miang-Laos, Pan-Sip-Pla-Nueng, fruit juice, and milk. Overall, the content writer of Moh-Chao-Baan magazine recommends healthy food and health practices for consumer health promotion. The next part is three topics of health practices for consumer health promotion—fresh food, Thai dishes, and beverages.

1) Fresh food: fish meat and eggs

Consumers should pay attention to selecting fish meat. Unless clearly know fish types, consumers should not buy packed fish meat. As another advice, eggs are healthy food. Consumers should eat eggs; however, they should eat the right quantity of eggs for their age. For example, children should eat one egg a day whereas consumers over forty years should not eat more than three eggs a week.

Sources: The news on page 11 in the April issue 2003

The letter on page 42 in the May issue 2003

2) Thai dishes—Khao-Rad-Kaeng-Khiao-Wan (rice and green curry with fish ball); Miang-Kham (raw ingredients topping with sauce and wrapped in a green leaf); Khao-Tang-Miang-Laos (rice crackers with ground peanut and minced pork, wrapped in leaves of pickled mustard green); and Pan-Sip-Pla-Nueng (steamed flour, stuffed with fish meat).

Thai dishes have balanced nutrition and are healthy. Consumers should eat Thai dishes. For instance, Miang-Kham is healthy because it provides nutritional benefit for the body. Also, it contains some medicinal vegetables such as ginger, fresh lime, and red onion.

Sources: The article on page 81 in the April issue 2003

The article on page 87 in the May issue 2003

The article on page 83 in the July issue 2003

The article on page 81 in the August issue 2003

3) Beverages: milk and fruit juice

Consumers should drink the right types of milk; for instance, elderly consumers should drink unsweetened yakult and skim milk whereas consumers over twenty-five years should drink low fat milk. In addition to milk types, consumers should consider the right amount of milk for their age. As another advice, vitamins in fruit juice are diminished in sunlight so should be stored correctly. Consumers should squeeze juice themselves and drink fresh fruit juice straight away.

Sources: The letter on page 42 in the May issue 2003

The article on page 53 and page 55 in the June issue 2003

The letter on page 38-39 in the January issue 2004

4.4.3 Treatment

Eating and drinking, and food preparation are two topics of food content related to treatment. Features of content are recommendations about treatment or a decrease of some risks of intervening diseases. Considering the titles, honey and torch ginger are the sorts of food leading to treatment. For instance, people who live in the southern provinces of Thailand eat petals of torch ginger as food such as spicy petals of torch ginger salad. Flower of torch ginger according to herbal remedies can help to relieve headache and hypertension. As another example, when patients have stomachache, drinking two to three tablespoons of honey can relieve the symptom. The results of this part reveal that the production staff of Moh-Chao-Baan magazine shows the importance of the treatment of heart disease, diabetes, gout, and chronic renal failure. The next part is recommendations for heart patients, diabetics, gout patients, and patients of chronic renal failure.

1) Heart disease treatment

Heart patients who get too full might get worse; therefore, they should beware of overeating.

Source: The news on page 10 in the April issue 2003

2) Diabetes treatment

As with heart patients, diabetics might get worse if they overeat. They should give regard to eating only as much as they need. Furthermore, they should avoid very salty food because diabetics risk possible renal failure, caused by eating too much salt. They should flavor food with lime juice, garlic, onion, or other spices instead of salt, fish sauce, soy sauce, or oyster sauce. Overall, paying attention to eating and food preparation properly decreases the intensity of diabetes and intervening diseases.

Source: The news on page 10 in the April issue 2003

The article on page 41 and page 43 in the November issue 2003

3) Gout treatment

The content writer of Moh-Chao-Baan magazine advises gout patients to avoid the sorts of food which aggravate gout. For example, when gout patients drink alcohol, they suffer from joint pain. They should drink a lot of water and eat whole food. Furthermore, they should select diuretic foods which assist urination such as pineapples and watermelons instead. Moreover, they should eat a good breakfast; eat less for dinner.

Source: The article on page 45 and page 47 in the August issue 2003

4) Chronic renal failure treatment

Chronic renal failure is an intervening disease of diabetes and gout. Doctors consider the patient's age; a cause of renal failure; the condition of arteries; personality; and mental health. Then, the doctor recommends patients proper treatment. The chronic renal failure can be treated with diet. Due to the medical advice that eating too much high-protein food—meats and peanut—is a risk factor of renal failure, patients can reduce the risk of renal failure by limiting proteins at the early stage of disease. Nevertheless, diet consideration at the final stage of this disease has no effect on patients of chronic renal failure.

Source: The article on page 19 and page 21-22 in the November issue 2003

4.4.4 Rehabilitation

Eating and drinking is the single topic related to rehabilitation. Features of content are recommendations about patient care after treatment. Considering the titles, the content writer of Moh-Chao-Baan magazine advises on recovery of heart disease and the liver disease caused by hepatitis C virus (HCV). Fish oil is the sort of food

assisting the recovery of heart patients. The following part is recommendations for rehabilitation. The first part deals with heart patient care after treatment. The second part concerns patient care after the treatment of liver disease, caused by hepatitis C virus (HCV).

1) Heart patient care after treatment

After three month treatment, heart patients should eat fish high in fish oil at least two meals a week.

Source: The news on page 12 in the May issue 2003

2) Patient care after the treatment of liver disease, caused by hepatitis C virus (HCV)

Proper eating contributes to recovery of liver disease patients. Liver disease patients need a number of carbohydrates. The best sorts of food are high-fiber carbohydrates (for example, brown rice, whole wheat bread, taro, and pumpkin) and a variety of fruits. In addition, liver disease patients should eat several small meals and they should eat approximately four to five meals a day.

Source: The article on page 20 in the September issue 2003

Overall, the important objectives during this study are disease prevention and health promotion because all the topics of food content manifest these two objectives. Nevertheless, the most important objective according to quantitative results is disease prevention. In consideration of the name of diseases, the production staff of Moh-Chao-Baan magazine emphasizes information on non-communicable diseases. The information on non-communicable diseases appears in all the topics of food content. The production staff emphasizes consumer eating and drinking topic because it is the single topic, showing four health communication objectives. For this reason, eating and drinking properly are essential to good health. Most contents are recommendations on the sorts and amount of food, leading to disease prevention, health promotion, treatment and rehabilitation.

CHAPTER V

ANALYSIS

The food content analysis in Moh-Chao-Baan magazine comprises three main parts. The first part is the result analysis. The second part is the correspondence analysis of results and concepts. Food content is analyzed according to consumer guides to food sanitation. Content format presentation is analyzed according to concepts of magazines. Health communication objectives are analyzed according to concepts of health communication. The final part is the analysis according to communication science. The following part provides the details.

5.1 Result Analysis

The result analysis comprises three main parts—food content, content format presentation, and health communication objectives.

5.1.1 Food content

The results of this part reveal the features and topics of food content, received attention during this study. Firstly, an item in Moh-Chao-Baan magazine shows either multiple pieces of information or a single piece of information. There is no meaningful difference between two features of content because the production staff of Moh-Chao-Baan magazine selects any topic of food behavior, referring to fixed topics. As a result, the more the fixed topics relate to, the more the food content is presented.

Secondly, two topics of food content, received attention during this study are consumer's eating and drinking, and food preparation because these topics answer health communication objectives of Moh-Chao-Baan magazine during this study more than any other topic. As the connection between food content and health communication objectives is implied, consumer eating and drinking topic answers all health communication objectives. Consumer food preparation topic answers three out of four objectives whereas consumer food selection and food storage topic answer two out of four objectives. Another reason is that these topics relate to a cause of many diseases, especially non-communicable diseases. Non-communicable diseases—for example, cancer, heart and vascular disease, diabetes and chronic renal failure—get attention during this study. Considering the mentioned reasons, two important topics of food content during this study are consumer's eating and drinking, and food preparation. Nevertheless, the most important topic is consumer eating and drinking because this topic arouses reader interest. Eating and drinking are food intake into the body and are an everyday routine. As a result, consumer eating and drinking has a greater effect on health.

5.1.2 Content format presentation

The analysis in this part includes three issues. Firstly, the results of this part show that items showing food content are more in regular columns than in irregular columns—thirty items and Twenty-one items, respectively. The first reason is that regular columns catch reader attention. Based on concepts of magazines, readers are familiar with regular columns. They discern regular columns in every issue of Moh-Chao-Baan magazine. Consequently, the content presentation in regular columns creates column's fans of Moh-Chao-Baan magazine. As another reason, effective communication relies on continuity. The content presentation in regular columns produces a positive effect of communication on Moh-Chao-Baan magazine. For this reason, most items appear in regular columns.

Secondly, the results of this part disclose that there are fewer pieces of information in regular columns than in irregular columns in proportion to all the

pieces of information—forty-four pieces and forty-six pieces, respectively. Nevertheless, there is no meaningful difference because the figures are close. This mentioned result implies that the fixed topics in irregular columns refer to food content more than those in regular columns. Consequently, irregular columns contain more pieces of information than regular columns. In addition to this mentioned connection, illustrated articles are found more in irregular columns than in regular columns—twenty-one items and fifteen items, respectively. Illustrated articles contain detailed explanations. News is a concise presentation, whereas letters are explanations, answering reader questions. Considering discernible features, illustrated articles contain more pieces of information because of less limitation of topic broadening. Overall, the production staff of Moh-Chao-Baan magazine presents any piece of information, referring to the fixed topics of each item. There is no meaningful difference according to the quantitative data.

Lastly, the results of this part disclose that almost fifty percent of food content is illustrated articles whereas each of the rest includes ten to twenty percent. The reason is that illustrated articles are appropriate for detailed descriptions or explanations of health issues or medical issues. Content features of Moh-Chao-Baan magazine contain many health issues or many medical issues. Medical terms are inserted in items. The medical terms or technical terms on medicine and diseases are not easily understandable by readers who do not have medical knowledge. Therefore, an explicit explanation in details and use of illustrations are essential to creating understanding. These reasons are explained according to discernible features of content and format presentation.

5.1.3 Health communication objectives

The results of this part disclose that disease prevention is the main objective during this study. The first reason refers to one of the objectives of Moh-Chao-Baan magazine—health education on self-care. This objective is one of the preventive measures and includes a content presentation for disease prevention. The advice of content writers helps consumers to reach the right decision on their health; to prevent

or to lower health risks; and to create their good quality of life. For instance, “Prevention is better for cure; live to a great age without diseases and sleep peacefully” was the statement on page 31 in the May issue of Moh-Chao-Baan magazine 2003. Considering the mentioned example, disease prevention is essential. As another reason, the content presentation for disease prevention attracts more attention. Owing to the fact that nobody wants to be sick and disease prevention is a way out, names of diseases and methods of disease prevention are shown in the content of Moh-Chao-Baan magazine for effective communication. Both names of diseases and methods of disease prevention are one of the persuasive techniques according to communication concepts—fear appeals. In summary, the food content during this study manifests disease prevention due to the connection with the objective of Moh-Chao-Baan magazine; its importance; and a degree of persuasion. The next part is the correspondence analysis of results and concepts.

5.2 Correspondence Analysis of Results and Concepts

The correspondence analysis comprises three main parts. The first analysis is the correspondence analysis of food content and consumer guides to food sanitation. The second analysis is the correspondence analysis of content format presentation and concepts of magazines. The final analysis is the correspondence analysis of health communication objectives and concepts of health communication.

5.2.1 Correspondence analysis of food content and consumer guides to food sanitation

The term “food” in this study means food and beverages, while the food content includes consumer’s eating and drinking, food preparation, food selection, and food storage. The correspondence analysis of this part is divided into four parts and is put in order of quantitative meaning. The first part is the correspondence analysis of healthy eating and drinking advice for consumers and dietary guidelines, announced by Ministry of Public Health. The second part is the correspondence analysis of

healthy food preparation advice for consumers and food preparation practices, announced by Ministry of Public Health. The third part is the correspondence analysis of healthy food selection advice for consumers and food selection practices, announced by Ministry of Public Health. The fourth part is the correspondence analysis of healthy food storage advice for consumers and food storage practices, announced by Ministry of Public Health.

5.2.1.1 Correspondence analysis of healthy eating and drinking advice for consumers and dietary guidelines, announced by Ministry of Public Health

The results of this part show seven topics of healthy eating and drinking advice for consumers—food safety; whole food; healthy and nutritious food choices; right sorts of food; a variety of foods; balanced diet; and medicinal food. The correspondence analysis of healthy eating and drinking advice for consumers and Food Based Dietary Guidelines for Thai reveals that the advice in Moh-Chao-Baan magazine corresponds with some of Food Based Dietary Guidelines for Thai as shown in Table 14.

Table 14: Correspondence of healthy eating and drinking advice for consumers and Food Based Dietary Guidelines for Thai

Order	Advice in Moh-Chao-Baan magazine	Food Based Dietary Guidelines
1)	Food safety (eat cooked clean and uncontaminated food)	Eat clean and safe food.
2)	Whole food (eat foods that are unprocessed and unrefined, or processed and of course refined as little as possible before being consumed)	None
3)	Healthy and nutritious food choices (eat foods which provide high nutritional benefit and avoid unhealthy food)	Eat plenty of vegetables. Avoid or reduce the consumption of alcoholic beverages.

Table 14: Correspondence of healthy eating and drinking advice for consumers and Food Based Dietary Guidelines for Thai (continued)

Order	Advice in Moh-Chao-Baan magazine	Food Based Dietary Guidelines
4)	Right sorts of food (both consumers of different age groups and patients with different diseases need different sorts of food)	Drink milk in appropriate quality for one's age.
5)	A variety of foods (eat a variety of foods from each of five food groups)	Eat a variety of foods from each of five food groups.
6)	Balanced diet (eat in the right amount of food from each of food groups)	Eat eggs regularly and drink milk in appropriate quantity for one's age.
7)	Medicinal food (If possible, eat vegetables, fruits, or other foods which contain medicinal substances instead of taking medicine or supplementary diet)	None

Besides that, the correspondence of healthy eating and drinking advice for consumers and the advice on how to eat to meet one's needs is analyzed in this part. From this content analysis, most features of content do not reveal the consumer's age. Therefore, the food content with an explicit age of consumers is taken into consideration. Furthermore, it is acceptable to find either a single piece of information or multiple pieces of information in one item. Pieces of information in accordance with this analysis are collected and are divided into three groups:

- 1) Health information for pregnant women and breastfeeding mothers
- 2) Health information for children

Based on the advice on how to eat to meet one's needs, pieces of information of this group are for babies in the 0-12 month age-bracket, preschool children in the 1-

5 age-bracket, school age in the 6-19 bracket, and young adults in the 10-24 age-brackets.

3) Health information for adults

Based on the advice on how to eat to meet one’s needs, pieces of information of this group are for working-age people in the 15-59 bracket, menopausal men in the 40-59 age-bracket, menopausal women in the 45-59 age-bracket, and elderly people over sixty.

The correspondence analysis of healthy eating and drinking advice for consumers and the advice on how to eat to meet one’s needs discloses that pieces of information are for all groups of consumers—pregnant women and breastfeeding mothers; children; and adults. The advice in Moh-Chao-Baan magazine corresponds with some of the advice on how to eat to meet one’s needs as shown in Table 15.

Table 15: Correspondence of healthy eating and drinking advice for consumers and the advice on how to eat to meet one’s needs

Groups of consumers	Risks of diseases	Right sorts of food	Unhealthy food
pregnant women and breastfeeding mothers	Iron deficiency anemia	Iron-rich food	Tea and coffee
Children	Deficiency diseases, iron deficiency anemia, and fat	Five food groups and iron-rich food	Snacks and sweet
Adults	Iron deficiency anemia; diabetes; heart and vascular disease; gout; osteoporosis; and cancer	Five food groups, iron-rich food, and low-fat milk	Coconut milk, sweet food, tea, coffee, and alcohol beverages

5.2.1.2 Correspondence analysis of healthy food preparation advice for consumers and food preparation practices, announced by Ministry of Public Health

The results of this part show three topics of healthy food preparation advice for consumers—food safety; nutritious and healthy food choices; and balanced diet. The correspondence analysis of this part unfolds that the advice in Moh-Chao-Baan magazine corresponds with some of the advice, announced by Ministry of Public Health as shown in Table 16.

Table 16: Correspondence of healthy food preparation advice for consumers and food preparation practices, announced by Ministry of Public Health

Order	Advice in Moh-Chao-Baan magazine	Advice of the Ministry of Public Health
1)	Food safety (food should be cooked, clean, and uncontaminated by chemicals)	Always cook food thoroughly to wipe out contaminated diseases, and prepare food with cleanliness and safety
2)	Healthy and nutritious food choices (the chosen ingredients add nutritional benefit)	Prepare food by retaining maximum nutrients
3)	Balanced diet (Prepare the right amount of food)	None

5.2.1.3 Correspondence analysis of healthy food selection advice for consumers and food selection practices, announced by Ministry of Public Health

The single topic of healthy food selection advice for consumers—food safety—is shown in the results of this part. The correspondence analysis of this part discloses that this topic of healthy food selection advice for consumers is in accordance with the advice, announced by Ministry of Public Health. The corresponding advice is that consumers should select food with the safety standard or buy food from credible sources.

5.2.1.4 Correspondence analysis of healthy food storage advice for consumers and food storage practices, announced by Ministry of Public Health

Based on the content analysis this time, two topics of healthy food storage advice for consumers—food safety; and nutritious and healthy food choices—are discernible. The correspondence analysis of this part shows that the advice in Moh-Chao-Baan magazine corresponds with some of the advice, announced by Ministry of Public Health as shown in Table 17.

Table 17: Correspondence of healthy food storage advice and food storage practices, announced by Ministry of Public Health

Order	Advice of Moh-Chao-Baan magazine	Advice of the Ministry of Public Health
1)	Food safety (keep food away from animals and diseases)	Keep food in a clean and safe container
2)	Healthy and nutritious food choices (Store food in a place with proper degree of humidity and temperature.)	Store food at the proper temperature and moisture

Overall, the correspondence analysis of food content and consumer guides to food sanitation unfolds that the advice on consumer food behavior in Moh-Chao-Baan magazine corresponds with some of consumer guides to food sanitation. A reason is because the given definitions of some consumer food behavior are different. For instance, the Ministry of Public Health recommends that consumers should examine the quality and standard of produce before buying. The ministry places this issue under the topic of consumer food preparation. On the other hand, this issue in this study is placed under the topic of consumer food selection according to the term “buying.” As another example, the Ministry of Public Health recommends that consumers should select a variety of foods which contain adequate nutritional value. The ministry places this issue under the topic of consumer food selection. However, this issue is placed under the topic of consumer food preparation in this study because

the chosen ingredients add nutritional benefit. The following analysis is the correspondence analysis of content format presentation and concepts of magazines.

5.2.2 Correspondence analysis of content format presentation and concepts of magazines

The correspondence analysis in this part shows that Moh-Chao-Baan magazine is a monthly specialized magazine for readers who are interested in health issues. The food content presentation in Moh-Chao-Baan magazine is part of descriptions or explanations of many health issues or many medical issues. According to the interview with the managing editor of Moh-Chao-Baan magazine, the content writers of this health magazine consist of editorial staffs and outside writers. According to concepts of magazines, the magazine content is from editorial department and outside writers. The outcome of this interview corresponds with concepts of magazines.

Based on the content analysis this time, the formula for food content presentation during the period of this study includes two types of columns, three content formats and many types of illustrations with three functions as shown in Table 18.

Table 18: Formula for food content presentation

Columns	Content formats	Illustrations	Functions of illustrations
Regular columns	Illustrated and unillustrated news	Cartoons	Making up magazine layout
	Illustrated articles (general articles and interviews)	Photographs, drawings, and cartoons	Content supplement, catching reader attention, and making up magazine layout
	Illustrated and unillustrated letters	Photographs	Making up magazine layout

Table 18: Formula for food content presentation (continued)

Columns	Content formats	Illustrations	Functions of illustrations
Irregular columns	Illustrated articles (general articles, and presentation of research results)	Photographs, drawings, and cartoons	Content supplement, catching reader attention, and making up magazine layout

The format presentations in this formula correspond with concepts of magazines because the formula for food content presentation of Moh-Chao-Baan magazine contains elements of magazines according to concepts of magazines.

Firstly, the separation of content of this health magazine into various columns corresponds with concepts of magazines. Two types of columns are regular columns and irregular columns as exhibited in Table 18. Eight regular columns and six irregular columns are found in Moh-Chao-Baan magazine. Content formats in regular columns are more various than those in irregular columns. As shown in Table 19, content formats in regular columns are general articles, interviews, news, and a letter. Overall, most contents in regular columns concern subjects of food, health practices, and diseases.

Table 19: Regular columns

Order	Regular columns	Content formats	Topics of discussion
1	Kep-Khao-Ma-Fak	News	Healthy food, health risk factors
2	Rueang-Den-Chak-Pok	Articles (general articles and interviews)	Diseases, food, health practices
3	Tam-Top-Pan-Ha-Suk-Kha-Phap	Letter	Nutritional value of food, sickness, health practices

Table 19: Regular columns (continued)

Order	Regular columns	Content formats	Topics of discussion
4	Chi-Wit-Ngan-Tat-Sa-Na	Articles (interviews)	Stories about people
5	Rian-Ru-Rueang-Ped	Articles (general articles)	Guidelines on an infant gender selection
6	Suk-Kha-Phap-Di	Articles (general articles)	Unhealthy food
7	Bok-Lao-Kao-Sip	Articles (general articles)	Health practices
8	Ton-Mai-Bai-Ya	Articles (general articles)	Torch ginger

The next presentation provides the details of irregular columns. Content formats in irregular columns are general articles, and the presentation of research results. Overall, most contents in irregular columns concern subjects of food, health practices, and diseases as shown in Table 20.

Table 20: Irregular columns

Order	Irregular columns	Content formats	Topics of discussion
1	Rueang-Na-Ru	Articles (general articles, and the presentation of research results)	Healthy food, nutritional value of food, food additives, food hazards, food behavior
2	Suk-Kha-Phap-Pen-Rueang-Ngai	Articles (general articles)	Health practices, diseases
3	Khao-Krua	Articles (general articles)	Nutritional value of Thai dishes
4	Na-Tang-Wi-Chai	Articles (the presentation of research results)	Food behavior resulted in obesity; lifestyle resulted in heart and vascular disease

Table 20: Irregular columns (continued)

Order	Irregular columns	Content formats	Topics of discussion
5	Ru-Mai-Ya-A-Rai- Aoei	Articles (general articles)	Herbs and treatment
6	Ban-Tuek-Chak- Phu-An	Articles (general articles)	Reader experiences about health-care

From the details in Table 19 and Table 20, most topics of discussion in regular and irregular columns correspond.

Secondly, it was found that results about articles correspond with concepts of magazines. The reason is because articles are one of the content formats in magazines. Moreover, articles are an important content format of Moh-Chao-Baan magazine. All articles during this study are illustrated. Features of illustrated articles are various. Illustrated articles appear in regular and irregular columns.

Thirdly, results about news correspond with concepts of magazines. According to concepts of magazines, news is a content format in a regular column of magazines. The news column of Moh-Chao-Baan magazine is the regular column, Kep-Khao-Ma-Fak. This news column is at the beginning of every issue of Moh-Chao-Baan magazine—Issue 288 April 2003 to Issue 299 March 2004. The news presentation of this health magazine focuses on a presentation of health risks factors, resulted in sickness.

Fourthly, results about letters correspond with concepts of magazines. Based on concepts of magazines, letters is a content format in a regular column of magazines. The letter column of Moh-Chao-Baan magazine is the regular column—Tam-Top-Pan-Ha-Suk-Kha-Phap.

Finally, illustrations, referring to the content are taken into focus. Illustrations in focus comprise many features. For instance, photographs appear in illustrated articles and illustrated news. Cartoons appear in illustrated news. Drawings appear in

illustrated articles. According to concepts of magazine, functions of illustrations are various. The correspondence analysis of this part shows three functions of illustrations in Moh-Chao-Baan magazine.

1) Function to supplement the content

The liver drawing on page 19 in the September issue of Moh-Chao-Baan magazine 2003 is an example of this part. A liver drawing was chosen to manifest the position of digestive tract and liver in the body. This liver drawing supplements explanations of liver disease, caused by hepatitis C virus (HCV).

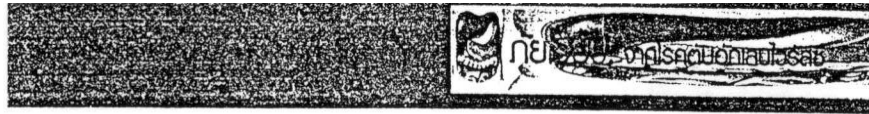
2) Function to catch reader attention

The large pink torch ginger photograph on page 74 in the December issue of Moh-Chao-Baan magazine 2003 is exemplified. The production staff of this health magazine catches reader attention by placing a large pink torch ginger photograph at the center of a page. Features of the photograph relate to the title and content.

3) Function to make up a magazine layout

The small spice illustrations on page 80 in the April issue of Moh-Chao-Baan magazine 2003 are examples of this part. Small spice illustrations are supplemented to this page layout to reduce the dense lettering.

To support this correspondence analysis, examples of illustrations are exhibited in the next part.



อาการของโรคตับ-
อักเสบไวรัสซี

โรคตับอักเสบ
จากเชื้อไวรัสจะมี
อาการคล้ายๆ กัน
คือ ตีขาน ตัวเหลือง
ตาเหลือง ปัสสาวะ
สีเข้ม เบื่ออาหาร น้ำ
หนักลด อ่อนเพลีย
ไม่มีแรง บวม มีน้ำ
ในช่องท้อง การที่
จะแยกอาการว่าเกิด
จากเชื้อไวรัสชนิด
ใดกันนั้น ต้องใช้
วิธีการตรวจทางห้อง
ปฏิบัติการจึงจะทราบ

แต่ที่น่าสังเกตคือโรคตับอักเสบ
จากไวรัสชนิดอื่นๆ มักจะเป็น
แบบเฉียบพลัน และควรจะหาย
ได้ภายในเวลา ๖ เดือน ถ้าหาก
มีอาการของโรคตับอักเสบเรื้อรัง
ก็มักจะเกิดจากไวรัสตับอักเสบบ
ชนิดบีหรือซี

โรคตับแข็ง แล้วผู้ป่วยจำนวน
หนึ่งก็จะเป็นมะเร็งตับ
เรียกว่ากว่าจะแสดงอาการ
ก็ใช้เวลาหลายสิบปี โดยที่โรค
จะดำเนินไปอย่างช้าๆ ผู้ป่วยจะ
ไม่รู้ตัวเลยว่า มีโรคอันตรายซ่อน
แฝงอยู่ ถ้าไม่ได้ตรวจเลือด ผู้ที่

และมี ดังนั้น พื้นฐานการรักษา
ทั่วไป ก็คือ การทำร่างกายให้
แข็งแรง กินอาหารที่มีประโยชน์
ออกกำลังกายได้บ้างตามสมควร
ตามแต่ระยะของโรค ไม่วิตก
กังวลหรือเครียดกับอาการเจ็บ
ป่วยจนเกินไป เพราะบางครั้ง

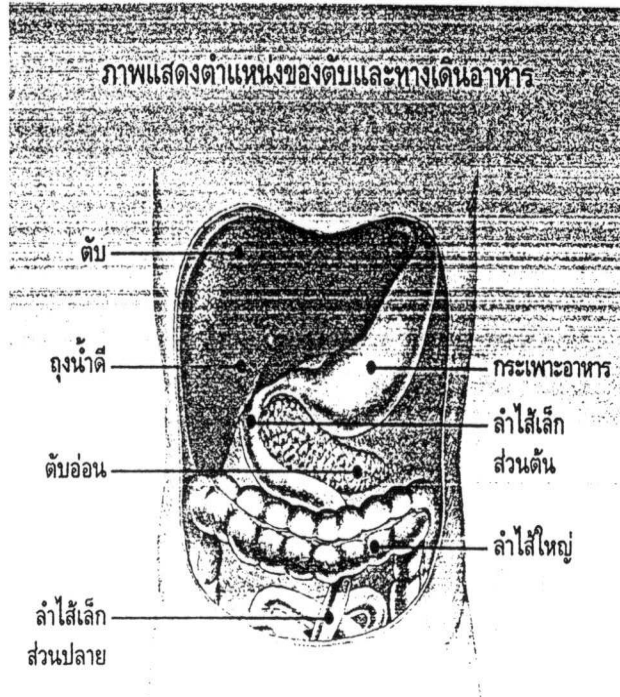


Figure 8: Content supplement

Volume 25 Issue 293 September 2003 Column: Rueang-Den-Chak-Pok

Title: The silent threat, the liver disease caused by hepatitis C virus (HCV)



Figure 9: Catching reader attention

Volume 25 Issue 296 December 2004 Column: Ton-Mai-Bai-Ya

Title: graceful, lasting, and beautiful torch ginger

ข้าวราดแกงเขียวหวาน

ลูกชิ้นปลากราย

จานนี้ได้อะไร





ปริมาณอาหารต่อ ๑ จาน	๓๖๐ กรัม	ใยอาหาร	๓.๙ กรัม
พลังงาน	๕๒๕ กิโลแคลอรี	โคเลสเตอรอล	๒๘ มิลลิกรัม
โปรตีน	๑๘.๔ กรัม	โซเดียม	๖๑๕ มิลลิกรัม
ไขมัน	๑๘.๖ กรัม	แคลเซียม	๖๑ มิลลิกรัม
คาร์โบไฮเดรต	๘๔.๓ กรัม	เหล็ก	๓.๘ มิลลิกรัม

ที่มาของข้อมูล : จากรายงานการวิจัย "คุณค่าอาหารไทยเพื่อสุขภาพ" โดยทีมวิจัยของสถาบันวิจัยโภชนาการ มหาวิทยาลัยมหิดล

ในบรรดาอาหารไทยประเภทแกงเผ็ดที่ใส่กะทิ ซึ่งมีทั้งแกงแดงคือ แกงเผ็ดที่ใช้พริกแห้งสีแดงทำเครื่องแกง กับแกงเขียวหรือแกงเขียวหวานแกงจะมีสีเหลืองเขียวเนื่องจากใช้พริกสดสีเขียวทำเครื่องแกง แกงทั้ง ๒ ประเภทสามารถแกงกับเนื้อสัตว์ได้หลายชนิด โดยเฉพาะแกงเขียวหวานนั้น มักจะมีการใช้ไก่ เนื้อวัว กุ้ง และลูกชิ้นปลากราย แต่ที่นิยมทำกันแพร่หลาย เป็นอาหารเมนูประจำในร้านข้าวราดแกง ตามภัตตาคาร ร้านอาหาร สวนอาหารต่างๆ มักจะเป็นแกงเขียวหวานไก่

แกงเขียวหวาน ลูกชิ้นปลากรายเป็นส่วนใหญ่ บางร้านอาจมีการดัดแปลงออกไปบ้าง อาทิ แกงเขียวหวานลูกชิ้นปลากรายใส่ไข่เค็ม เป็นต้น แต่ที่จะนำเสนอคุณค่าโภชนาการของจานนี้ได้อะไรจะเป็นข้าวราดแกงเขียวหวานลูกชิ้นปลากราย ซึ่งบางท่านอาจจะกินเป็นอาหารมื้อเช้าก่อนไปทำงาน หรือเป็นมื้อกลางวันก็ได้ทั้งนั้น หรือจะกินเป็นอาหารเย็นก็ไม่แปลก กินได้ทุกเวลา บางท่านอาจจะกินแกงเขียวหวานลูกชิ้นปลากรายราดขนมจีน

ก็ได้เช่นกัน

ก่อนที่จะอธิบายถึงคุณค่าโภชนาการของอาหารจานนี้ ผมอยากขอเล่ารายละเอียดถึงกรรมวิธีการทำตั้งแต่เครื่องแกงเขียวหวานเลย เพราะก่อนจะเป็นเครื่องแกงนั้นต้องใช้เวลา ใช้ส่วนประกอบเครื่องเทศสมุนไพรหลายชนิดเลยทีเดียว ตามที่ทีมวิจัยเรื่องอาหารไทยของสถาบันวิจัยโภชนาการ มหาวิทยาลัยมหิดลได้รวบรวมมา เครื่องแกงเขียวหวานจะประกอบด้วยลูกผักชี ยี่ห่วย พริกไทย รากผักชี ข่า ผิวมะกรูด ตะไคร้ พริกขี้หนู พริกขี้ฟ้า พริกเหลือง กระชาย หอมแดง กระเทียม รวมทั้งใส่กะปิและเกลือป่นด้วย เมื่อโขลกเครื่องแกงให้ละเอียดแล้วก็ให้นำมาใช้แกงต่อไป ในปัจจุบันเครื่องแกงเขียวหวานสำเร็จรูปก็มีขายกันแพร่หลาย สูตรเครื่องแกงอาจจะเหมือนหรือ

Figure 10: Making up magazine layout

Volume 24 Issue 288 April 2003 Column: Khao-Krua

Title: How much nutritional value do we get from eating rice and green curry?

5.2.3 Correspondence analysis of health communication objectives and concepts of health communication

Based on this content analysis, health communication objectives include four objectives—disease prevention, health promotion, treatment, and rehabilitation. Meanings of these objectives are given according to elements of health education. Firstly, health communication objectives correspond with elements of health education. Furthermore, the correspondence analysis of this part reveals that disease prevention is connected with health promotion. This is because recommendations on disease prevention and health promotion are for normal consumers. On the other hand, treatment is connected with rehabilitation. This is because recommendations on treatment and rehabilitation are for patients.

Secondly, health communication objectives refer to health education, whereas health education is one of seven domains of health promotion. Consequently, health communication objectives relate to health promotion. The correspondence analysis of this part uncovers that health promotion during this study is individual health promotion. Examples of the promotion of individual health factors are healthy food behavior, exercise, and good mental health. The outcome of this content analysis reveals healthy food behavior for consumers. The promotion of environmental factors, social factors, or policy factors does not appear in this content analysis.

Thirdly, the correspondence analysis of this part shows that results of this content analysis do not correspond with four domains of health promotion, introduced by J. Thomas Butler (2001: 30-31). This is because these domains are connected with policy factors, not individual health factors. Four domains are preventive policies, policy maker education, health protection, and policy support. The details of each domain are stated in the second chapter on page 15-16. However, the correspondence analysis of this part unfolds that results of this study fall within three domains of health promotion, introduced by J. Thomas Butler (2001: 30-31). Three domains are as follows:

- 1) Health prevention is the first domain

2) Lifestyle is the second domain

3) Health education is the fifth domain

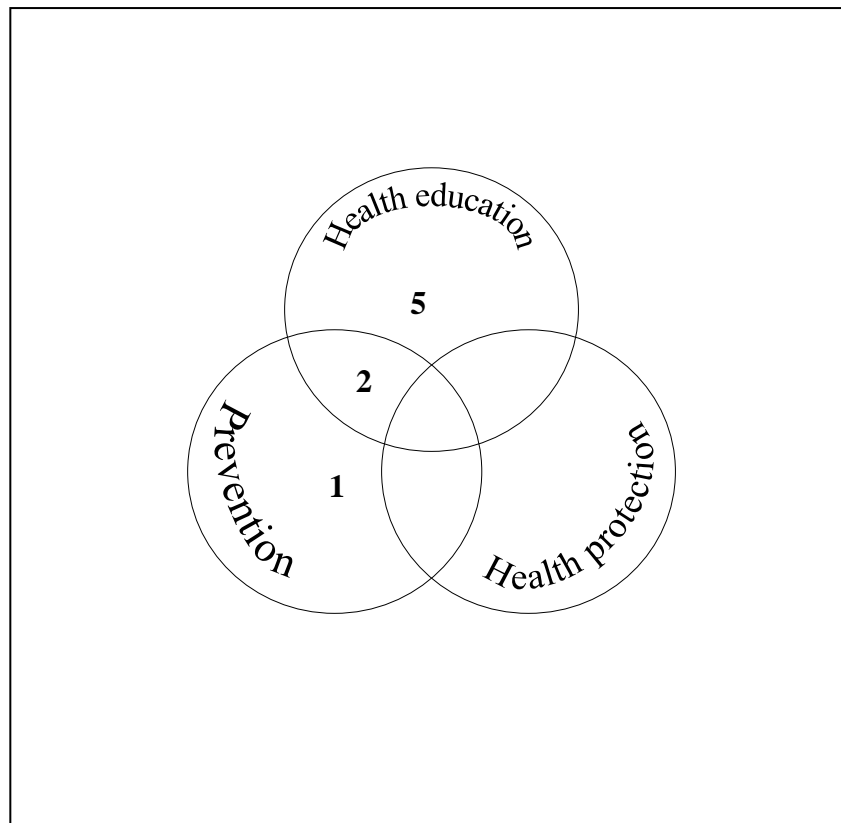


Diagram 12: Overlap of health education and health prevention

Health promotion in three domains is the overlap of two activities—health education and health prevention. As exhibited in Diagram 12, interlocking spheres of three activities, depicted by Tannahill (1985) and introduced by J. Thomas Butler (2001: 30-31) show that two activities—health education and health prevention—link three domains—health prevention, lifestyle, and health education together. The first domain or number one in Diagram 12 is health prevention. The second domain or number two in Diagram 12 is lifestyle. The fifth domain or number five in Diagram 12 is health education. Health protection does not contain any domain.

The connection among health promotion, health education, and health prevention is that health promotion refers to health prevention and health education.

One of the elements of health education is health education on disease prevention. This element of health education relates to health prevention. Moreover, health education includes health education on individual healthy lifestyle for sickness prevention. Consequently, health education on healthy lifestyle for consumers is one of preventive measures. Lifestyle—the second domain in Diagram 12—is a composite of health prevention and health education. The following part provides the details.

1) Health prevention

The correspondence analysis of this part and descriptions of health prevention shows that the presentation of healthy food behavior for consumers is part of primary preventive measures. The reason is because the production of health contents of Moh-Chao-Baan magazine contributes to the consumer's right decision making on self health. Consumers can take good care of their health and reduce risks of diseases or sickness.

2) Lifestyle

The correspondence analysis of this part and descriptions of lifestyle discloses that the presentation of healthy lifestyle for consumers prevents diseases or sickness. For example, the content on page 11 in the January issue of Moh-Chao-Baan magazine 2004 showed that a change in lifestyle lowers risks of heart and vascular disease. Eating properly is essential to long term heart and vascular disease prevention.

3) Health education

Based on the content analysis this time, health education is a major subject. All of its elements are discernible during the period of this study. The first important element is health education on disease prevention. The production staff of Moh-Chao-Baan magazine emphasizes health education on non-communicable disease prevention. The second element is health education on health promotion for consumers or individual health promotion. From the results of this study, healthy food behavior is in focus. Most of the food contents in Moh-Chao-Baan magazine are

recommendations on eating with complete nutritional value for consumer health promotion. The third element is health education on treatment. The fourth element is health education on rehabilitation. As with health education on disease prevention, the production staff of Moh-Chao-Baan magazine emphasizes recommendations on treatment and recovery of non-communicable diseases.

Overall, results unfold that three subjects of health education are taken into focus.

- 1) Diet and nutrition
- 2) Consumer self-care, especially healthy food behavior
- 3) Non-communicable diseases

The objectives of health education during this study cover three objectives as Apiwan Kaowwannarat (2003: 2, 16-17) stated—the creation of health knowledge; the promotion of positive attitude to health issues; and the promotion of suitable healthy practices.

- 1) Creation of health knowledge

The production staff of Moh-Chao-Baan magazine disseminates self-care information or knowledge for consumer health promotion.

- 2) Promotion of positive attitude to health issues

An example is that the content writer of the May issue of Moh-Chao-Baan magazine 2003 realized that rumors of cancer produce negative attitude to a medical treatment for cancer. Although cancer is preventable and some types of cancer are curable, cancer patients depress by their sickness. Therefore, the content writer of Moh-Chao-Baan magazine improves right understanding of cancer by the content presentation about cancer on page 26 of the May issue.

- 3) Promotion of suitable healthy practices

The production staff of Moh-Chao-Baan magazine advises consumers not to eat medicine or supplementary diet as food. For example, the content on page 44 in the April issue of Moh-Chao-Baan magazine 2003 showed that if possible; when they

are sick, they should eat vegetables, fruits, or other foods which contain medicinal substances instead of taking medicine or supplementary diet.

In summary, health education on disease prevention is the important subject during the period of this study. Health education, health prevention, and health promotion overlap. Three activities—health education, health prevention, and health promotion—are elements of health communication. The next part is the analysis according to communication science.

5.3 Analysis According to Communication Science

Overall, communication science relates to public health issues and is entitled “Health Communication.” Health communication covers many elements and activities. Two elements of health communication are shown in this analysis. The first element is health education. The second element is the presentation of consumer self-care in mass media. This is because Moh-Chao-Baan magazine is part of mass media. One of its objectives is health education on self-care. To create effective health communication process, health communicators take communication science into focus. Effective health communication aims at the improvement of health knowledge, health attitudes and health practices.

The analysis of this part covers four parts. The first part is objectives of communication. The second part is elements of health communication process. The third part is effective ways of communication. The final part is functions of Moh-Chao-Baan magazine as mass media.

5.3.1 Objectives of communication

Two communication objectives are discernible in this content analysis. The first objective is to inform and to educate, whereas the second objective is to persuade. Overall, the first objective of communication—to inform and to educate—is in focus during the period of this study. The reason is because all items present consumer health information or knowledge. Some items manifest the second objective of communication—to persuade. For instance, the content on page 3 in the May issue of

Moh-Chao-Baan magazine 2003 showed that if whoever fears cancer, he or she should remember this saying “prevention is better than cure.” According to this saying, readers are persuaded by fear appeal. Nevertheless, that readers are persuaded or not and whether health communication of Moh-Chao-Baan magazine is effective or ineffective is a question. This is because this content analysis does not reveal effects of health communication.

5.3.2 Elements of health communication process

This content analysis shows four elements of health communication process of Moh-Chao-Baan magazine.

- 1) Communicator or sender (S)
- 2) Message (M)
- 3) Channel of communication (C)
- 4) Receiver (R)

Effects of communication (E) are not shown in this content analysis. The following part is Table 21. Table 21 shows relevant results or details of each element. The information in Table 21 is evidences in the support of the analysis of effective ways of communication and functions of Moh-Chao-Baan magazine in the next part.

Table 21: Elements of health communication process

Elements	S SENDER OR COMMUNICATOR	M MESSAGE	C CHANNEL OF COMMUNICATION	R RECEIVER
<p>Relevant results</p> <ul style="list-style-type: none"> • Most of the production staffs of Moh-Chao-Baan magazine are health professionals. • The important objective during the period of this study is health education on consumer self-care for non-communicable disease prevention. 	<ul style="list-style-type: none"> • Health information or knowledge of healthy food behavior for consumers. • Consumer eating and drinking topic gets the most attention during the period of this study. 	<ul style="list-style-type: none"> • Mass communication; a printed medium; a health magazine 	<ul style="list-style-type: none"> • A number of anonymous readers—literate receivers—who are interested in health or medical issues 	

Table 21: Elements of health communication process (continued)

Elements	S SENDER OR COMMUNICATOR	M MESSAGE	C CHANNEL OF COMMUNICATION	R RECEIVER
Relevant results		<ul style="list-style-type: none"> • Food safety is an important topic during the period of this study. • Most contents are illustrated. Illustrated articles are the important format presentation during the period of this study. • The advice on consumer food behavior is for everyone—pregnant women and breastfeeding mothers; children; and adults. 		

5.3.3 Effective ways of communication

From the information in Table 21, the information on communicator (S) and message (M) shows three effective ways of communication in Moh-Chao-Baan magazine. Three effective ways of communication are credibility; clarity; and continuity and consistency.

1) Credibility

The interview with the managing editor of Moh-Chao-Baan magazine reveals that most of the production staffs of Moh-Chao-Baan magazine are health professionals. Based on descriptions of effective ways of communication, health professionals are reliable communicators. The reason is that not all people can explain health issues or medical issues by themselves and readers place their reliance on their advice. The reliability of health communicators and their competence in explaining health issues are essential. Health professionals disseminate health information or knowledge according to their competence. For instance, doctors disseminate medical issues or diseases. A pharmacist disseminates issues of phytopharmaceuticals and health. Specialists from the institutes of nutrition disseminate issues of diet, nutrition, and health. The health professional's content presentation according to their knowledge creates credible messages. In summary, health professionals or reliable communicators are a key to effective health communication during this study.

2) Clarity

Most of the format presentations during this study are illustrated content formats, especially illustrated articles. One of the functions of illustrations in Moh-Chao-Baan magazine is content supplement. The use of illustrations to supplement the content creates explicit messages. In addition, the content presentation in details increases understanding of messages. These ways of content presentation create the clarity of messages according to descriptions of effective ways of communication.

3) Continuity and consistency

The evidence to support the use of this effective way of communication—continuity and consistency—is the presentation of cancer in the April issue, the May issue and the June issue of Moh-Chao-Baan magazine 2003. Firstly, subjects of cancer were shown on page 12 in the April issue of Moh-Chao-Baan magazine 2003. Secondly, subjects of cancer were shown on page 9 and page 25-31 in the May issue of Moh-Chao-Baan magazine 2003. Thirdly, subjects of cancer were shown on page 7 in the June issue of Moh-Chao-Baan magazine 2003. According to these mentioned examples, the continual presentation of cancer reminds readers of the need for self-care in cancer prevention. Also, the repetitive presentation of cancer reinforces the clarity of messages.

This content analysis does not show four effective ways of communication—content, context, channel, and capability of receivers—because these effective ways of communication are connected with the audience analysis.

5.3.4 Functions of Moh-Chao-Baan magazine as mass media

As exhibited in Table 21, the channel of communication in Moh-Chao-Baan magazine is mass communication. The functions of Moh-Chao-Baan magazine as mass media can be divided into two functions—a gatekeeper and an agenda setter.

1) Gatekeeper

Moh-Chao-Baan magazine as a gatekeeper has a role in health information or knowledge dissemination to everyone. Most of chosen information and knowledge are about healthy food behavior for disease prevention, health promotion, treatment, and rehabilitation, respectively. In addition, the important topics during this study are consumer eating and drinking; and food safety.

2) Agenda setter

Moh-Chao-Baan magazine as an agenda setter sets the agenda on health issues. The agenda during this study is the agenda on disease prevention, especially self-care for non-communicable disease prevention.

Based on the agenda setting theory, introduced by Mcquail Denis & Windahl Sven (1981: 62-63), when mass media shows an importance of the agenda on any health issue, readers get the most information or knowledge of that health issue.

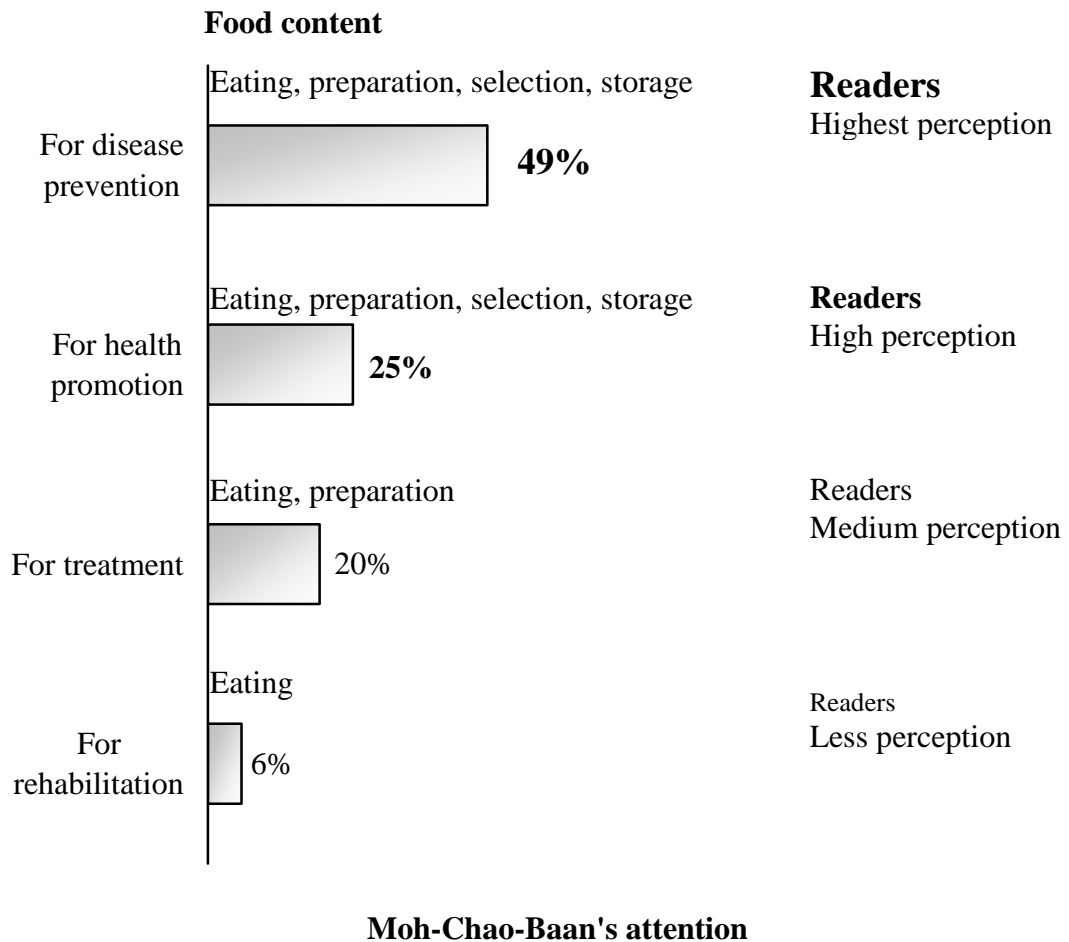


Diagram 13: Agenda setting in Moh-Chao-Baan magazine

As exhibited in Diagram 13, adapted from the agenda setting model, introduced by Mcquail Denis & Windahl Sven (1981: 62-63), the production staff of Moh-Chao-Baan magazine focuses on the disease prevention agenda. Readers are familiar with food content or consumer food behavior for disease prevention. They get the most health information or knowledge of disease prevention. However, it was found that this explanation is only an assumption according to the agenda setting theory. The reason is because the food content analysis in Moh-Chao-Baan magazine is not the audience analysis and does not manifest effects of communication.

CHAPTER VI

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Overall, the food content analysis in Moh-Chao-Baan magazine is to study food content, content format presentation, and health communication objectives. Five concepts used in this study refer to communication, health communication, consumer guide to food sanitation, magazines, and content analysis, respectively. In addition to the mentioned five concepts, six relevant researches on food behavior and the health communication of mass media are used. The results of this study comprise four parts—the background of Moh-Chao-Baan magazine; food content; content format presentation; and health communication objective. The analysis comprises three parts—result analysis; the correspondence analysis of results and relevant concepts; and the analysis according to communication science. The conclusion, discussion, and recommendations are shown in this chapter. The following part is the details.

6.1 Conclusion

The conclusion includes the conclusion of results and analysis.

6.1.1 Conclusion of results

The results of this study comprise four parts. The first part is the background of Moh-Chao-Baan magazine. The second part is food content. The third part is content format presentation. The final part is health communication objectives.

6.1.1.1 The background of Moh-Chao-Baan magazine

According to the interview with the managing editor of Moh-Chao-Baan magazine on 27th March 2007, Moh-Chao-Baan magazine was first launched in May 1979 and has been published continuously for twenty-eight years. Its objective is to disseminate knowledge of life, health, and environment; self-prevention; and self-care. Production staffs comprise Copy Department; Art Department; regular and irregular writers out of Moh-Chao-Baan office; and an executive team. Most production staffs are health professionals such as doctors, pharmacists, nurses, physical therapists, and instructors of medical schools at Mahidol, Chulalongkorn, Thammasat, Chiang Mai, and Konkaen University. Overall, health professionals work for the following positions.

- 1) Professor Emeritus Dr. Pravet Vasee, Editor, Publisher and Advertiser
- 2) Professor Emeritus Dr. Sant Hatthirat, Director-editor
- 3) Associate Professor Dr. Surakiat Archananuparp, Executive editor
- 4) Executive team and regular writers—most of them are public health and medical personnel at medical schools in many universities.

The production staff intends to create Moh-Chao-Baan magazine as an inexpensive publication for disseminating health knowledge to the public. Moh-Chao-Baan magazine is distributed all around Thailand. This health magazine catches most of all types of readers—men and women of all ages, education levels, and occupation. The production staff expected that there will be readers all around Thailand. Most readers will live in upcountry. They will be interested in their health and their neighbor health.

In fact, the expected readership is current Moh-Chao-Baan magazine readers. Most readers are local buyers more than regular members. Most members are middle-age women who live in upcountry more than those who live in Bangkok. They graduated and have been employees in government or government enterprises. Their

income is more than ten thousand Baht. Although the managing editor of Moh-Chao-Baan magazine did not expect that school boys, teen-age boys, and young men read Moh-Chao-Baan magazine. However, these groups are Moh-Chao-Baan magazine readers. They live in Bangkok and suburban areas. Most of them finished high school and worked for private companies. Their income is more than ten thousand Baht. The managing editor of Moh-Chao-Baan magazine further disclosed that young and working age readers pay more attention to health issues.

Concerning the content presentation in Moh-Chao-Baan magazine, content issues are set up by the Copy Department, the Executive editor, and executive team. They select shared content issues in each issue of Moh-Chao-Baan magazine. Content issues are from interviews with specialists; the executive editor and executive team's advice; and news in mass media. Factors that influence the content setting in Moh-Chao-Baan magazine are social trends, current health problems, public health personnel advice, reader needs, new issues, and research results that affect health, quality of life, and lifestyle of target readers or people.

Now the production staff focuses on a reduction of important health problems, food, mental health, community environmental management, and exercise, respectively. The objectives of production staffs are to offer readers the right knowledge, attitude, and health behavior for prevention, health promotion, treatment, and rehabilitation. Furthermore, the managing editor of Moh-Chao-Baan magazine indicated that the content presentation in Moh-Chao-Baan magazine should be balanced. However, the production staff has to share content presentation because paper space is limited. All content issues can not be put into one issue of Moh-Chao-Baan magazine. Content writers of this health magazine comprise editorial staffs and outside writers. Outside writers are regular writers who have a writing contract with Moh-Chao-Baan magazine; and writers who send interesting articles to the production staff. Overall, content writers are doctors; pharmacists; nurses; nutrition and public health academics; and lawyers from the law office of Thongbai Thongpao.

The managing editor is very satisfied with the result of his work. He informed that Moh-Chao-Baan magazine has been published continuously for a long time because this health magazine is an inexpensive intellectual medium, supported by professors and has a presentation of familiar and easily understandable content. This health magazine has a role in knowledge dissemination to the public; consumer protection; exercise promotion for disease prevention; and a campaign to create a social trend.

6.1.1.2 Food content

The production staff of Moh-Chao-Baan magazine presents consumer eating and drinking topic more than other topics in proportion to all the pieces of information. Considering the monthly presentation of food content, the production staff of Moh-Chao-Baan magazine presents consumer's eating and drinking, and food preparation in every issue of Moh-Chao-Baan magazine—Issue 288 April 2003 to Issue 299 March 2004. Consumer's food selection and food storage are presented in some issues. The production staff of Moh-Chao-Baan magazine presents consumer eating and drinking topic more than other topics almost monthly.

The results of this part show that the content writer of Moh-Chao-Baan magazine gives advice on consumer food behavior. Seven topics of healthy eating and drinking advice for consumers are food safety; whole food; healthy and nutritious food choices; right sorts of food; a variety of foods; balanced diet; and medicinal food. Three topics of healthy food preparation advice for consumers are food safety; nutritious and healthy food choices; and balanced diet. The single topic of healthy food selection advice for consumers is food safety. Two topics of healthy food storage advice for consumers are food safety; and nutritious and healthy food choices. Overall, food safety is the only one which related to consumer's eating and drinking, food preparation, food selection, and food storage.

6.1.1.3 Content format presentation

The results of this part show that news and letters appear in regular columns whereas articles are both in regular and irregular columns. Articles are found more in

irregular columns than in regular columns. Articles are the single content format in irregular columns. Although the items in irregular columns are fewer than those in regular columns, the items in irregular columns mention more about food content than those in regular columns in proportion to all the pieces of information. Nevertheless, the results of this part disclose that there is no meaningful difference because the figures shown in this study are close.

Most contents are illustrated. Three format presentations are illustrated articles; illustrated and unillustrated news; and illustrated and unillustrated letters. Illustrated articles are the most popular content format. Based on the study this time, three features of illustrated articles are general articles; interviews; and the presentation of research results. Features of news are the concise presentation of health issues, previously published in various newspapers, while features of letters are the question-answer content between magazine readers and a specialist who has knowledge to answer those questions.

6.1.1.4 Health communication objectives

The important objectives during this study are disease prevention and health promotion because all the topics of food content manifest these two objectives. Nevertheless, the most important objective according to quantitative results is disease prevention. In consideration of the name of diseases, the production staff of Moh-Chao-Baan magazine emphasizes the information on non-communicable diseases. Furthermore, the production staff emphasizes consumer eating and drinking topic because it is the single topic, showing four health communication objectives. Most contents are recommendations on the sorts and amount of food, leading to disease prevention, health promotion, treatment, and rehabilitation.

6.1.2 Conclusion of analysis

The conclusion of analysis comprises three parts—result analysis; the correspondence analysis of results and concepts; and the analysis according to communication science.

6.1.2.1 Result analysis

Firstly, the results about food content reveal that an item in Moh-Chao-Baan magazine shows either multiple pieces of information or a single piece of information. There is no meaningful difference between two features of content because the quantitative data are close. The reason is because the production staff of Moh-Chao-Baan magazine selects any topic of food behavior, referring to fixed topics. As a result, the more the fixed topics relate to, the more the food content is presented. Based on the study this time, two topics of food content, received attention during the period of this study are consumer's eating and drinking, and food preparation because these topics answer health communication objectives of Moh-Chao-Baan magazine during the period of this study more than any other topic. As another reason, these topics relate to a cause of many diseases especially non-communicable diseases. Non-communicable diseases get attention during the period of this study. Nevertheless, the most important topic is consumer eating and drinking because this topic arouses reader interest owing to the fact that eating and drinking are food intake into the body and are an everyday routine. Consequently, consumer eating and drinking has a greater effect on health.

Secondly, the results about content format presentation unfold that items showing food content are more in regular columns than in irregular columns. This is because regular columns catch reader attention and effective communication relies on continuity. The content presentation in regular columns produces a positive effect of communication on Moh-Chao-Baan magazine. In addition, the results of this part disclose that there are fewer pieces of information in regular columns than in irregular columns in proportion to all the pieces of information. Nevertheless, there is no meaningful difference because the figures are close. This mentioned result implies that the fixed topics in irregular columns refer to food content more than those in regular columns. According to this content analysis, illustrated articles contain more pieces of information because of less limitation of topic broadening. The results of this part disclose that illustrated articles are an important format during the period of this study. The reason is that illustrated articles are appropriate for detailed descriptions or explanations of health issues or medical issues. The medical terms or technical terms

on medicine and diseases are not easily understandable by readers who do not have medical knowledge. An explicit explanation in details and use of illustrations are essential to creating understanding.

Finally, the results about health communication objectives show that disease prevention is the main objective during this study due to the connection with the objective of Moh-Chao-Baan magazine; its importance; and a degree of persuasion. One of the objectives of Moh-Chao-Baan magazine—health education on self-care—is one of the preventive measures and includes a content presentation for disease prevention. The advice of content writers helps consumers to reach the right decision on their health; to prevent or to lower health risks; and to create their good quality of life. The content presentation for disease prevention attracts more attention. Owing to the fact that nobody wants to be sick and disease prevention is a way out, names of diseases and methods of disease prevention are shown in the content of Moh-Chao-Baan magazine for effective communication. Both names of diseases and methods of disease prevention are one of the persuasive techniques according to communication concepts—fear appeals.

6.1.2.2 Correspondence analysis of results and concepts

Firstly, the correspondence analysis of food content and consumer guides to food sanitation uncovers that the advice on consumer food behavior in Moh-Chao-Baan magazine corresponds with some of consumer guides to food sanitation. A reason is because the given definitions of some consumer food behavior are different. For instance, the Ministry of Public Health recommends that consumers should examine the quality and standard of produce before buying and places this issue under the topic of consumer food preparation. On the other hand, this issue is placed under the topic of consumer food selection according to the term “buying.” As another example, the Ministry of Public Health recommends that consumers should select a variety of foods which contain adequate nutritional value and places this issue under the topic of consumer food selection. However, this issue is placed under the topic of

consumer food preparation in this study because the chosen ingredients add nutritional benefit.

Secondly, the correspondence analysis of content format presentation and concepts of magazines discloses that Moh-Chao-Baan magazine is a monthly specialized magazine for readers who are interested in health issues. Based on the interview with the managing editor of Moh-Chao-Baan magazine, the content writers of this health magazine consist of editorial staffs and outside writers. The outcome of this interview corresponds with concepts of magazines.

Based on the content analysis this time, the formula for food content presentation during the period of this study includes two types of columns, three content formats and many types of illustrations with three functions as shown in Table 18.

Table 18: Formula for food content presentation

Columns	Content formats	Illustrations	Functions of illustrations
Regular columns	Illustrated and unillustrated news	Cartoons	Making up magazine layout
	Illustrated articles (general articles and interviews)	Photographs, drawings, and cartoons	Content supplement, catching reader attention, and making up magazine layout
	Illustrated and unillustrated letters	Photographs	Making up magazine layout
Irregular columns	Illustrated articles (general articles, and presentation of research results)	Photographs, drawings, and cartoons	Content supplement, catching reader attention, and making up magazine layout

The format presentations in this formula correspond with concepts of magazines because the formula for food content presentation of Moh-Chao-Baan

magazine contains elements of magazines according to concepts of magazines. Illustrations in focus comprise many features. For instance, photographs appear in illustrated articles and illustrated news. Cartoons appear in illustrated news. Drawings appear in illustrated articles. The correspondence analysis of this part shows three functions of illustrations in Moh-Chao-Baan magazine.

- 1) Function to supplement the content
- 2) Function to catch reader attention
- 3) Function to make up a magazine layout

Finally, the correspondence analysis of health communication objectives and concepts of health communication reveals that health communication objectives correspond with elements of health education. In addition, disease prevention is connected with health promotion because recommendations on disease prevention and health promotion are for normal consumers. On the other hand, treatment is connected with rehabilitation because recommendations on treatment and rehabilitation are for patients.

The correspondence analysis of this part shows that health communication objectives relate to health promotion because health communication objectives refer to health education, whereas health education is one of seven domains of health promotion. Health promotion during this study is individual health promotion—healthy food behavior for consumers. The promotion of environmental factors, social factors or policy factors does not appear in this content analysis. The correspondence analysis of this part unfolds that results of this study fall within three domains of health promotion, introduced by J. Thomas Butler (2001: 30-31). Three domains are health prevention, lifestyle, and health education. Health promotion in three domains is the overlap of two activities—health education and health prevention.

Based on the content analysis this time, health education is a major subject. Health education on disease prevention is the important subject during the period of

this study. Overall, results of this part unfold that three subjects of health education are taken into focus.

- 1) Diet and nutrition
- 2) Consumer self-care, especially healthy food behavior
- 3) Non-communicable diseases

The objectives of health education during this study cover three objectives—the creation of health knowledge; the promotion of positive attitude to health issues; and the promotion of suitable healthy practices.

6.1.2.3 Analysis according to communication science

Overall, two elements of health communication are shown in this analysis. The first element is health education. The second element is the presentation of consumer self-care in mass media. This is because Moh-Chao-Baan magazine is part of mass media. One of its objectives is health education on self-care. To create effective health communication process, health communicators take communication science into focus.

Firstly, two communication objectives are discernible in this content analysis. The first objective is to inform and to educate, whereas the second objective is to persuade. Overall, the first objective of communication—to inform and to educate—is in focus during this study. The reason is because all items present consumer health information or knowledge. Some items manifest the second objective of communication—to persuade. Readers are persuaded or not and whether health communication of Moh-Chao-Baan magazine is effective or ineffective is a question. This is because this content analysis does not reveal effects of health communication.

Secondly, this content analysis shows four elements of health communication process of Moh-Chao-Baan magazine.

- 1) Communicator or sender (S)—most of the production staffs of Moh-Chao-Baan magazine are health professionals

2) Message (M)—health information or knowledge of healthy food behavior for consumers

3) Channel of communication (C)—mass communication

4) Receiver (R)—a number of anonymous readers (literate receivers) who are interested in health or medical issues

Thirdly, three effective ways of communication are credibility; clarity; and continuity and consistency.

Finally, the functions of Moh-Chao-Baan magazine as mass media can be divided into two functions—a gatekeeper and an agenda setter. Moh-Chao-Baan magazine as a gatekeeper has a role in health information or knowledge dissemination to everyone. Most of chosen information and knowledge are about healthy food behavior for disease prevention, health promotion, treatment, and rehabilitation, respectively. In addition, the important topics during the period of this study are consumer eating and drinking; and food safety. Moh-Chao-Baan magazine as an agenda setter sets the agenda on health issues. The agenda during this study is the agenda on disease prevention, especially self-care for non-communicable disease prevention. Based on the agenda setting theory, Readers are familiar with food content or consumer food behavior for disease prevention. They get the most health information or knowledge of disease prevention. However, it was found that this explanation is only an assumption according to the agenda setting theory. The reason is because the food content analysis in Moh-Chao-Baan magazine does not show effects of communication.

6.2 Discussion

The discussion is divided into two parts. The first part is the comparison of the results of this study and relevant researches. The second part is opinion on health communication in Moh-Chao-Baan magazine.

6.2.1 Comparison of the results of this study and relevant researches

The comparison is divided into three main parts. The first part is the comparison of the results about food content. The second part is the comparison of the results about content format presentation. The third presentation is the comparison of the results about health communication objectives.

6.2.1.1 Food content

The food content includes consumers' eating and drinking, food preparation, food selection, and food storage. The results of this part and four relevant researches are comparable. The following part describes four relevant researches.

- 1) Suwit Wiboonpolprasert et al (2001-2004: 122, 124) wrote the report on Thai public health 2001-2004. They introduced risk factors of diseases and Thai people's food selection.
- 2) Duangdao Panpikul (2001) studied health education on national health recommendations in television programs. Duangdao indicated important issues of health education in television programs.
- 3) Nut Nakasuwan (2004) did the content analysis on nutrition knowledge in Thai newspapers—Thai-Rath, Dailynews, Kom-Chad-Luek, and Khao-Sot—and Thai magazines—Brand Health, Health and Cuisine, Mae-Lae-Dek, Che-Va-Jit, and Moh-Chao-Baan. Nut showed the correspondence analysis of the nutrition knowledge in Thai newspapers and nutrition practices, announced by Ministry of Public Health.
- 4) Piriyaorn Waewjinda (2004) studied the public relation strategies and effectiveness of Food Safety Campaign, announced by the Ministry of Public Health. Piriyaorn showed public relation strategies of Food Safety Campaign.

The results of this study correspond with research results of Suwit Wiboonpolprasert et al., Duangdao Panpikul, and Nut Nakasuwan.

Firstly, Suwit Wiboonpolprasert et al. introduced many risk factors of diseases. According to this study, the corresponding risk factors of diseases relate to food behavior. For example, the content on page 7 in the June issue of Moh-Chao-Baan magazine 2003 showed that drinking alcohol increases the risk of cancer. The content

on page 19 in the February issue of Moh-Chao-Baan magazine 2004 showed that iron deficiency causes anemia. The content on page 6 in the April issue of Moh-Chao-Baan magazine 2003 showed that obesity increases risks of diseases—the type II diabetes, hypertension, cardiovascular disease, and a high cholesterol level in blood.

Secondly, the survey of the national statistics office in 2001 by Suwit Wiboonpolprasert et al. disclosed that sixty percent of Thai people give regard to clean food selection, whereas the production staff of Moh-Chao-Baan magazine advises consumers to select clean food as well.

Thirdly, the results about food safety advice—cooked, clean, and uncontaminated food—in Moh-Chao-Baan magazine corresponds with the research result of Duangdao Panpikul.

Finally, Nut Nakasuwan (2004) indicated that magazines publish some nutrition practices, announced by Ministry of Public Health. Moh-Chao-Baan magazine is one of Thai magazine, studied by Nut Nakasuwan. This research result of Nut Nakasuwan corresponds with the result of this study.

In addition, the study of Piriyaoporn Waewjinda (2004) has no information to support that magazines are the principal strategy for public relations in Food Safety Campaign. However, the production staff of Moh-Chao-Baan magazine presents the food safety advice during the period of study when Food Safety Campaign is in operation. For this reason, Moh-Chao-Baan magazine takes part in food safety communication in Food Safety Campaign period.

6.2.1.2 Content format presentation

The study of content format presentation includes the study of content format, and illustrations referring to the content. The results of this part and three relevant researches are comparable. The following presentation is of three relevant researches.

1) Tatinut Luxchaigul (2001) did the content analysis of health in health magazines—Klai-Moh, Che-Va-Jit, and Moh-Chao-Baan. Tatinut showed presentation formats, and sources of information in health magazines.

2) Nut Nakasuwan (2004) did the content analysis on nutrition knowledge in Thai newspapers—Thai-Rath, Dailynews, Kom-Chad-Luke, and Kow-Sod—and Thai magazines—Brand Health, Health and Cuisine, Mae-Lae-Dek, Che-Va-Jit, and Moh-Chao-Baan. Nut presented presentation formats in Thai newspapers and Thai magazines.

3) Tanawan Kummarnjesadakul (2004) did the content analysis on health in Thai newspapers—Thai-Rath, Dailynews, Khao-Sot, and Ma-Ti-Chon. Tanawan showed presentation formats, and sources of information in Thai newspapers.

The correspondence analysis of the results of this study and three relevant researches unfolds that there is no meaningful difference. Overall, the results of this study correspond with all the research results stated above.

Firstly, articles are discernible in every study stated. In addition, the results of this study correspond with research results of Tatinut Luxchaigul and Tanawan Kummarnjesadakul. It was found that health professionals are part of the sources of health content. Most contents in health magazines are illustrated. General articles are mostly discernible. Furthermore, the analysis of this part uncovers that the content formats and sources of health content in Thai daily newspapers and health magazines have something in common. The corresponding format presentation comprises articles; regular columns in every issue; and health professionals as the important sources of health contents. This is because both Thai daily newspapers and health magazines are printed media.

6.2.1.3 Health communication objectives

Health communication objectives during the period of study comprise disease prevention, health promotion, treatment, and rehabilitation. The results of this study and three relevant researches are comparable. The following part describes three relevant researches.

1) Tatinut Luxchaigul (2001) did the content analysis of health in health magazines: Klai-Moh, Che-Va-Jit, and Moh-Chao-Baan. Tatinut showed the presentation of health concepts in health magazines.

2) Duangdao Panpikul (2001) studied the health education on national health recommendations in television programs. Duangdao disclosed the presentation of health concepts in television programs.

3) Tanawan Kummarnjesadakul (2004) did the content analysis on health in Thai newspapers—Thai-Rath, Dailynews, Kow-Sod, and Ma-Ti-Chon. Tanawan introduced the health content and role of Thai daily newspapers.

The correspondence analysis of the results of this study and three relevant researches reveals that the results of this study correspond with the research results stated above.

Firstly, this study refers to elements of health education; on the other hand, the study of Tatinut Luxchaigul refers to concepts of health promotion. Nevertheless, the results of this study correspond with research results of Tatinut Luxchaigul. A reason is because Moh-Chao-Baan magazine is one of three health magazines, studied by Tatinut Luxchaigul. The first corresponding issue is that Moh-Chao-Baan magazine provides knowledge about self care. Self-care includes for people and patients. The second corresponding issue is that the content presentation for disease prevention, health promotion, treatment and rehabilitation are discernible in both of the study.

Secondly, the result of this study corresponds with the research result of Tanawan Kummarnjesadakul and Duangdao Panpikul. The corresponding result is that disease prevention is an important objective. In summary, mass media—Moh-Chao-Baan magazine, Thai daily newspapers, and television—show the importance of health education. Health education on disease prevention is an important topic of content presentation in mass media.

Overall, the correspondence analysis of this part shows that the results of this study correspond with other relevant research results. Most results of this study correspond with research results of Tatinut Luxchaigul and Nut Nakasuwan because of the corresponding research methodology—the content analysis in health magazines. The content of Moh-Chao-Baan magazine is studied in the different period of study and by different details of research methodology. Nevertheless, results of three study

stated are close. The researcher assumed that the content presentation in Moh-Chao-Baan magazine is stable.

6.2.2 Opinion on health communication in Moh-Chao-Baan magazine

The opinion presentation covers four issues. The first presentation is of characteristics of health communication in Moh-Chao-Baan magazine. The second presentation is of roles of Moh-Chao-Baan magazine and food safety communication. The third presentation is of health education on non-communicable diseases as an important health issue during the period of study. The final presentation is of three important issues in Moh-Chao-Baan magazine.

6.2.2.1 Characteristics of health communication in Moh-Chao-Baan magazine

Based on the study this time, three characteristics of health communication in Moh-Chao-Baan magazine are communication with a wide diversity of informative sources; transmission of steady and reliable messages; and far-reaching communication.

1) Communication with a wide diversity of informative sources

As discerned in food content and the interview with the managing editor of Moh-Chao-Baan magazine, the communication in Moh-Chao-Baan magazine refers to many sources of information—health professionals; interviews with specialists; informants from many institutes; books; research results; leaflets; newspapers; magazines; online media; and readers. The content writer of Moh-Chao-Baan magazine gathers the information from various sources before writing items. Furthermore, many informants take an opportunity to give their opinion. For instance, both Professor Dr. Pattanapong Nawejareon, a gastrointestinal and vascular surgeon at King Chulalongkorn Memorial Hospital and Sa-nga Damapong, the president of the Nutrition Association of Thailand take an opportunity to give their opinions on eating Pla-ra—a condiment of fermented fish—which causes health problem in the news column on page 12 in the April issue of Moh-Chao-Baan magazine 2003.

Features of messages in the health communication process are varied. Messages during the period of study are both one-sided and two-sided messages. Features of two-sided messages are the presentation of two different recommendations. Readers can decide for themselves. As discerned on page 12 in the April issue of Moh-Chao-Baan magazine 2003, one informant advises consumers to eat other sorts of food instead of raw Pla-ra (a condiment of fermented fish). On the other hand, another informant advises that Pla-ra is high-calcium and rich-protein food. However, consumers should eat clean and cooked Pla-ra. Concerning features of one-sided messages, an informant presents good points of his/her advice and advise consumers to follow his/her advice. For example, he/she shows the advantages of eating green beans and advises consumers to eat green beans for good health on page 51 in the June issue of Moh-Chao-Baan magazine 2003. According to this content analysis, features of messages are one-sided messages more than two-sided messages.

2) Transmission of steady and reliable messages

This typical feature—the transmission of steady and reliable messages—refers to a feature of printed media and the creation of efficient messages according to effective ways of communication. Moh-Chao-Baan magazine is one of the printed media and contains stable messages. This is because messages in printed media are not rewritten after publication. As a result, readers can read messages repeatedly to create understanding. Also, the presentation of informative sources or references creates reliable messages.

3) Far-reaching communication

As with the communication process in newspapers, television, and radio, the communication process in Moh-Chao-Baan magazine is mass communication. The production team of Moh-Chao-Baan magazine disseminates health information or knowledge to a large number of anonymous readers. For this reason, the communication in Moh-Chao-Baan magazine is far-reaching. However, the communication process in Moh-Chao-Baan magazine is limited because it is written

medium. The literacy of receiver is essential. Only literate receivers can understand messages.

6.2.2.2 Roles of Moh-Chao-Baan magazine and food safety communication

Overall, the roles of Moh-Chao-Baan magazine in health communication are health educator, health informant, and friend. Moh-Chao-Baan magazine as health informant and educator informs everyone to promote healthy practices. Everyone includes adults, mother and children. Moh-Chao-Baan magazine as friend is a medical consultant. Readers consult health professionals about their health problems. They write questions and send a letter to health professionals of Moh-Chao-Baan magazine. Health professionals answer reader questions according to their competence. Considering these roles, Moh-Chao-Baan magazine sustains the role of medium in health education on consumer self-care.

In consideration of the interview information, Moh-Chao-Baan magazine has a role in several campaigns. The Moh-Chao-Baan magazine in the past partook in many campaigns such as Anti-Drink Campaign and Non-Smoking Campaign. This study is the content analysis of Moh-Chao-Baan magazine in Food Safety Campaign period. Food Safety Campaign is a government project, operated by the Ministry of Public Health. Government departments, private sectors, and mass media participate in this campaign. Food Safety Campaign period is between April 2003 to September 2007. Although there is no information to support that Moh-Chao-Baan magazine partakes in Food Safety Campaign, the interview information disclosed that social trends influence the content setting in Moh-Chao-Baan magazine. Also, the results of this study showed that the production team of Moh-Chao-Baan magazine presents food safety advice. As a result, the production team creates a social trend and has a role in food safety communication during Food Safety Campaign period. Furthermore, Moh-Chao-Baan magazine readers are all over the country, especially in an upcountry. The food safety communication enables a large number of readers to find out about food safety advice.

On the other hand, the results of this study show that thirteen percent of total content—fifty-one items out of three hundred and eighty-two items—in Moh-Chao-Baan magazine concerns food. Food safety advice is a part of food content during this study period. According to communication concepts, a presentation of little message less affects on reader health behaviors. If the production team of Moh-Chao-Baan magazine emphasizes more food content presentation, the food safety communication in Food Safety Campaign period will be more effective; or in other words, Moh-Chao-Baan magazine will have a greater role in a health behavior change.

6.2.2.3 Health education on non-communicable diseases as an important health issue during the period of study

The production staff of Moh-Chao-Baan magazine places emphasis on health education on non-communicable diseases. As discerned in food content, most titles show the name of non-communicable diseases. Non-communicable diseases include both chronic diseases and non-infectious diseases. Chronic diseases are such as diabetes and chronic renal failure. Non-infectious diseases are such as cancer. Health education on non-communicable diseases is an important health issue. A reason is that non-communicable diseases are a leading cause of death among Thais today. As another reason is that some non-communicable diseases are incurable such as incurable cancer. Of all the leading causes of death today, cancer; and heart and cardiovascular disease are at the top of the list. Considering the content presentation during the period of study, topics for discussion include cancer; and heart and cardiovascular disease as well. As with a discernible cause of any other non-communicable disease, a cause of cancer; and heart and cardiovascular disease is connected with unhealthy food behavior. Health education on healthy food behavior in Moh-Chao-Baan magazine is essential and helps consumers to keep healthy.

6.2.2.4 Three important issues in Moh-Chao-Baan magazine

Three important issues during this study are healthy food behavior, exercise, and good mental health.

1) Healthy food behavior

Most content writers of Moh-Chao-Baan magazine advise about sorts and quantities for healthy eating. In consideration of the overall advice about healthy food behavior, sorts and quantities of food are equally important. The reason is that the unhealthy types and wrong quantities of food can cause health problems. For example, the content on page 26 in the May issue of Moh-Chao-Baan magazine 2003 showed that a cause of cancer relates to eating high-fatty food, or very salty food; and unbalanced eating. Therefore, paying attention to both healthy sorts and right quantities of foods are essential.

2) Exercise

Doing exercise also leads to good health. The production staff of Moh-Chao-Baan magazine advises consumers to regularly do exercise. The form of exercise should be appropriate for their physical state. For instance, the content on page 47 in the August issue of Moh-Chao-Baan magazine 2003 showed that gout patients should do light exercise such as swimming, etc.

3) Good mental health

The content writers of Moh-Chao-Baan magazine advise consumers not to get stressed because good mental health is one of the ways to limit health problems.

In conclusion, communication science is a key to effective health communication in Moh-Chao-Baan magazine. Three characteristics of health communication are communication with a wide diversity of informative sources; transmission of steady and reliable messages; and far-reaching communication. Moh-Chao-Baan magazine sustains the role of medium in health education on consumer self-care. Furthermore, Moh-Chao-Baan magazine has a role in food safety communication because Moh-Chao-Baan magazine presents the food safety advice in the Food Safety Campaign period. In addition, an important health topic during the period of study is health education on non-communicable diseases due to the reason that non-communicable diseases are a leading cause of death, and some non-

communicable diseases are incurable. Health education is essential and helps consumers to get healthy. Finally, three important issues in Moh-Chao-Baan magazine are healthy food behavior, exercise, and good mental health. These issues are the key to reduce health problems.

6.3 Recommendations

Recommendations comprise general recommendations and the recommendations for an additional study.

6.3.1 General recommendations

Mass media is one of the campaign media. Mass media can transmit information, create social trends and arouse reader perception. This study is of the food content analysis in Moh-Chao-Baan magazine, published at the beginning of Food Safety Campaign. The results of this study disclose that the production team of Moh-Chao-Baan magazine does not present much about food safety advice. If the production team of Moh-Chao-Baan magazine presents content more relevant to the Food Safety Campaign, Moh-Chao-Baan magazine will have a greater role in public health promotion during the Food Safety Campaign period.

6.3.2 Recommendations for an additional study

6.3.2.1 The study of the overall communication process is an interesting issue because the outcome of the study shows positive and negative factors in the communication process. The results encourage the development of effective communication process in media.

6.3.2.2 Moh-Chao-Baan magazine is both printed medium and online medium (<http://www.doctor.or.th>). Other researchers can make a comparison of the health communication style of printed medium and online media.

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