

# Concepts about Diet and Cancer of Highly Educated Korean Young Parents Residing in America

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## ABSTRACT

This study examined Korean young parents' current concept about diet and cancer to plan a proper communication strategy about nutrition education for cancer risk reduction.

The naturalistic study using in-depth, open ended interviews was conducted to identify Korean young parents' concepts about diet and cancer. Fourteen Korean husbands and wives were interviewed. All interviews were tape recorded and concept maps were developed from their tape-recordings for analysis.

Most interviewees believed that certain kinds of food or diet increase or decrease cancer risk. However, some interviewees did not believe that food or diet can prevent cancer. Most interviewees believed that Korean's salty and hot diet was related to the prevalence of stomach cancer. They also believed that meat, fresh, smoked or cured, processed food, and excessive fat intake increase the risk for cancer but vegetables and fruits decrease it. They believed that grilling and barbecuing increase cancer risk. Some interviewees believed that certain nutrients (Zn, Se) and food (soybean paste, mushroom, garlic, ginseng, and so on) have cancer preventive effect. Most interviewees thought twenties or early thirties are important ages for cancer prevention. Newspapers, woman's magazines, radio, TV were the primary source of information on diet and cancer.

**KEY WORDS** : concept · diet · cancer.

## Introduction

### 1. Background

Disease patterns are different from one country to another country according to natural environment, industrialization, culture, economic status, people's lifestyle including exercise, smoking, alcohol drinking, food habits, and so on. Disease patterns also can be altered according to changes in

the above factors within the same country.

Disease patterns have changed in Korea in the recent two decades. According to several studies<sup>1-3)</sup>, infectious disease, disease of the digestive system, and tuberculosis were the main causes of death until 1970. However, malignant neoplasm has now become the second leading cause of death during the last decade. Moreover, the specific death rate for cancer among one hundred thousand people has been increasing from 34.9 in 1969 to 57.2 in 1982. The age group of 40~69 years was the most

vulnerable for cancers. Stomach and liver cancer account for 55.6% of all cancers. As for men, the three most common sites of cancer, in order, were stomach, liver, and lung, while for women, they were stomach, uterus, and liver.

Several kinds of studies about causes of cancer, for example, comparison of incidence rates between populations, variation in rates within a population over time, and migrant studies have shown that cancer risk is associated with environmental factors. According to Doll and Peto<sup>4)</sup>, 35% of cancer deaths (range 10~70%) may be diet-related. If tobacco and alcohol are included, about 70% of cancer deaths are related to diet and lifestyle. Therefore, many cancers can be prevented.

As scientific evidence for the relationship between dietary pattern and cancer prevention and development increase, nutrition education about diet and cancer has to be expanded, and better educational programs developed for the reduction of cancer risks. In order to achieve better education and develop educational programs for audiences, understanding audiences' current concept is of utmost importance.

## 2. Theoretical Framework

Two major theories guiding this study are Ausubel<sup>5)</sup> and Novak's<sup>6)</sup> Theory of Meaningful Learning and Gillespie and Yarbrough's<sup>7)</sup> conceptual model for communicating nutrition. Ausubel<sup>5)</sup> and Novak<sup>6)</sup> contend that "meaningful learning results when the learner chooses to relate new information to ideas the learner already knows ; that is, the learner must have some information that relates to the new information to be learned. Highly meaningful learning that includes novel problem solving and creativity is only possible in domains of knowledge where the learner has considerable, well-organized prior knowledge." Ausubel also states succinctly, the only way to teach meaningfully is to ascertain what the learner already knows and teach him accordi-

ngly. Novak<sup>6)</sup> also insists that concept mapping can be enormously useful to reveal learner's current concept and misconceptions they possess.

On the other hand, communication theories have been applied in order to understand the process of nutrition education, to improve the ability to predict outcomes of education, and to plan proper communication strategy about nutrition education. Gillespie and Yarbrough<sup>7)</sup> presented a communication model for nutrition education. According to their model, three major components are involved in communication process : inputs, intervening process and outcomes. Inputs include the nutrition communicator(sender) inputs and receiver inputs (predisposition). Nutrition communicator inputs are sender's decisions about communication strategy such as textual organization, sources of information, and choices of medium. Receiver inputs are predispositions which the receiver brings to the communication event. Everybody participates in a communication program about nutrition with one's own previous experience, opinions, and habits that will influence response to such messages. A major part of audiences' different responses results from the receiver inputs. Communicator inputs can be controlled by the nutrition educator, however the receiver inputs and situational context(eg. money available for food expenditure, availability of food) can not. However, if the communicators understand an audiences' predisposition to respond in certain ways, they can improve the effect of their communication. Therefore, receiver inputs are important to consider in nutrition education.

Because of the importance of learner's current concepts and receiver inputs, several studies have been conducted to assess receiver inputs about diet and cancer for American<sup>8-10)</sup>. However, people's constructed concepts about diet and cancer might be different from one country to another country because of differences in food habits, lifestyle, educa-

tion, and culture. Korea has some papers which show some information about Korean's attitudes and knowledge about cancer and preventive health behaviors<sup>11-14</sup>). They investigated the relationship between non-dietary factors and cancer. There are few research papers about Korean's concepts about diet and cancer.

### 3. Purpose of Study

The present study is a preliminary one for a larger proposed study examining Korean perceptions about diet and cancer. The major goal of this study is to identify Korean young parents' concept about diet and cancer. Prohaska et al.<sup>15</sup>) pointed out that young adults are less likely to practice favorable health behaviors compared to elderly. However, young families' current lifestyle and diet are very important because cancer is a long-term illness and their health attitudes and practices will influence their health throughout the life cycle. Children's health attitudes and preventive behaviors are primarily influenced by their family. Adopted children's attitudes and preventive lifestyle from their parents may exert an influence throughout their lifetimes. Therefore, nutrition education for young parents is an important emphasis.

## Method

### 1. Characteristics of Naturalist Paradigm

The naturalist paradigm<sup>16</sup>) guided this research to begin to gain an understanding of people's concept about diet and cancer. Lincoln and Guba<sup>16</sup>) describe characteristics for operationalizing naturalistic inquiry. In naturalistic inquiry, realities are understood to be multiple and wholes that cannot be understood in isolation from their contexts. The naturalist elects to use him or herself as well as other humans as the primary data-gathering instruments and often use tacit knowledge to appreciate

nuances of multiple realities. The naturalist elects qualitative methods over quantitative because they are more adaptable to dealing with multiple realities. The naturalist is likely to prefer the case study reporting mode over scientific or technical report.

The naturalist is inclined to interpret data idiographically, because the interpretation of the data is highly dependent upon the context of each individual. The naturalist prefers inductive data analysis because that process is more likely to identify the multiple realities to be found in that data. The naturalist prefers to have the guiding substantive theory emerge from the data. The naturalist elects to allow the research design to emerge rather than to construct it preordinately. The naturalist prefers purposive or theoretical sampling. The naturalist prefers to negotiate meanings and interpretations with the human sources from which the data have chiefly been drawn. The naturalist is tentative about making broad application of the findings because realities are multiple and different.

### 2. Sample Selection

Purposeful sampling was used as a strategy to learn something and come to understanding about certain select cases without needing to generalize to all such cases. Convenience sampling was chosen as it is realistic yet consistent with the naturalistic approach. The study samples were selected from Korean families who live in Ithaca, New York, U.S. A. The interviewer chose seven families which were convenient to access. Each family consisted of a husband and wife, and at least one child less than ten years of age. Fourteen husbands and wives were interviewed.

### 3. Interview Questions

The interview questions were selected from interview questions in Greenberg<sup>8</sup>) thesis and modified somewhat for this study. The interviewer guided the interviewees to discuss their general health

views, and their beliefs related to diet and cancer. The complete list of questions asked is as follows.

Interview questions for Korean concepts  
about diet and cancer

- 1) What do you think about your overall health ?
- 2) What do you do to stay healthy ?
- 3) What kinds of cancer occur to you when you think of cancer ?
- 4) What do you think of connection between lifestyle and cancer ?
- 5) Can you explain what lifestyle you think may increase or decrease your chance of getting cancer ?
- 6) Have you ever done anything to reduce your chances of getting cancer ?
- 7) What do you think about the relationship between diet and cancer ?
  - a. Which food or diet does increase your risk ?
  - b. Which food or diet does decrease your risk ?
  - c. Which cooking method does increase or decrease your risk ?
- 8) What age do you think is important for prevention of cancer ?
- 9) Where do you get information about diet and cancer ?
- 10) How often do you talk about diet and cancer with your spouse ?

#### 4. Interview Procedure

Before the interview, phone calls were made to the one of spouses in families to explain the purpose and topic of interview and ask whether they would accept the interview or not. If they accepted the interview, interview appointments were made. Phone calls were made to seven families and they were all accepted. Interviews were held at interviewees' house. Before starting the interview, one of

spouses was asked to fill out a questionnaire for demographic information. Husbands and wives were interviewed separately. Interview questions were asked in same order for both husbands and wives. All interviews were tape recorded and concept maps were developed from their tape-recordings (Fig. 1 is an example of a concept map).

## Results and Discussion

### 1. The Demographic Characteristics of the Sample

Six of seven families consisted of both spouses and one child and one family had two children. Average age of the husband was 30.9 years old (27.8-35.0) and for the wife was 28.6 (27.3-31.7). Husbands and wives were highly educated : all husbands had postgraduate degree and all wives had a 4-year college degree. Six husbands were graduate students and one was visiting professor. All wives did not have a job outside home. The average period of marital status was 4.2 years (1.5-8.2) and the average period of residence in U.S.A. was 2.7 years (0.3-5.3). Two families have \$ 10,000-15,000 annual income and five families have \$ 15,000-20,000. Interviewees' majors in college were varied. Four of fourteen interviewees majored in Food Science or Food and Nutrition. Other interviewees' majors were Music, Pharmacology, Animal Science, English, Business, Interior Design, History, Chemistry, and Engineering.

### 2. Overall Health

Most interviewees judged they were healthy. Four interviewees said they got tired easily and had some trouble with the digestive system. Several persons were doing exercise such as swimming, tennis or golf, to stay healthy. Two participants were taking vitamin supplements for health. One was taking ginseng everyday. Most interviewees believed that the



and all husbands drank moderate alcohol. All husbands except S7H(S7H means husband in sample family number 7) also knew well that smoking and excessive drinking cause lung and stomach cancer. S4H explained nicotine in cigarette acts as carcinogen in lung, so it starts to act to cause lung cancer. S1H said that alcohol might cause kidney cancer.

### 3. Industrialization and Air Pollution

On the contrary, two wives mentioned that air pollution increases the risk for cancer, three husbands talked a lot about environmental factors and cancer. S1H said that pollution gas comes from cars and destroys the ozone layer and radioactive wastes from industry and foam cups having fluorescent material increase risk factors. He also explained that chemicals in polluted air reacts with elements of food and they synthesize carcinogens in the body. S3H said that chemicals used in chemical industry have carcinogens such as DMSO which might cause abnormal structures in cells.

### 4. Medical Examination

Most interviewees were not aware of the importance of a regular medical examination. Such results were shown in other study<sup>11,12)</sup>. Three interviewees said that regular medical checks can detect cancer early and decrease death rate from cancer, but only one wife had a checkup once. S6W said that "I think regular medical checkups are important for breast and uterine cancer. I had a checkup once and want to continue regularly. I heard about self examination for breast cancer, but I don't know how."

### 5. Food and Diet Connection

Most interviewees had significant knowledge about diet and cancer. They believed that certain kinds of food or diet increase or decrease cancer risk. However, some interviewees didn't think that food or diet is considerably related to cancer. S2H

said that "I think food and diet can cause cancer but I don't believe that they can prevent cancer". S1H and S7W said that "I doubt that careful regard for food can decrease cancer risk." S6H said that to get cancer depends on one's own fate.

#### 1) Korean diet

Most interviewees believed that Korean food is hot and salty. They also knew that prevalence of stomach cancer in Korean was caused from hot and salty Korean diet. The main salty and hot food which interviewees mentioned were Kimchi, red pepper, red pepper paste, hot stew, soy sauce, salt preserved fish, soybean paste. However, S4H said that although the Korean diet is hot and salty, it is better than the western diet because the Korean diet has rice, Kimchi and less meat compared with a western diet. S5W also thought Kimchi doesn't increase cancer risk.

#### 2) Meats

Many interviewees mentioned meat in relationship to cancer risk. Both S7W and S7H talked about animal fat and cancer. The husband thought that fat in beef, fat-layered pork meat, and the skin of chicken increase cancer risk. His wife said that "When I make soup with tailbone and shankbone, I always remove the fat after boiling and cooling soup because they have much fat which increases cancer risk." S1H and S4H said that consuming less meat decreases risk. However, S2H shared different opinion about meat intake. He insisted that the amount of meat which Koreans are consuming is adequate.

#### 3) Smoked or cured meat and Processed Food

Like other American data<sup>8-10)</sup>, most interviewees had negative opinions about smoked food and processed food. They thought that smoked meats such as sausage and ham, processed food, or instant food, and microwavable food have preservatives, artificial

color, MSG, and a lot of spices. They believed that these additives increase risk for cancer. However, they didn't know that smoked foods and salt preserved food contain high nitrates which cause cancer. S5H was also concerned about possibility of contamination of water which is used in food processing. S1W and S7W said that they tried to prepare meals with raw foods rather than half or totally processed foods.

#### 4) Vegetables and Fruits

All interviewees believed that fresh vegetables and fruits decrease risk for cancer. Several interviewees thought vegetables and fruits have vitamin C and this decreases the risk. S3W explained that vegetables have vitamins, Zn, and Se. She believed that especially, zinc and selenium have cancer preventive effect. The National Research Council<sup>17)</sup> reviewed cancer preventive effect of zinc and selenium. They reported that epidemiologic and clinical studies did not provide evidence that zinc intake play an important role in the etiology of cancer. They also reported that animal studies showed that zinc enhances tumor growth at some levels and inhibits at others. Even though epidemiologic studies showed that low selenium intakes or decreased selenium concentrations in blood or tissues are associated with increased risk of cancer in human, they reported that the role of selenium in human cancer risk is not justified because of inconsistencies in findings and lack of studies based on direct dietary assessment. Some animal studies showed that selenium deficiency enhances susceptibility to cancer, others showed that deficiency inhibits it.

S2W explained that vegetables are alkaline food, so they regulate pH of blood. Therefore, vegetables prevent blood from becoming acidic and viscous. S4W and S7W explained that vegetables eliminate waste products from the blood. S7H thought that a strict vegetarian diet can prevent cancer as well

as other diseases. However, S4H was concerned about contamination of vegetables and fruits from chemicals during cultivation. All interviewees thought that the major cancer preventive role of vegetables and fruits is due to its vitamins, unlike interviewees in Greenberg's study who believed fiber in vegetables and fruits has preventive effects.

#### 5) Specific Food

Several interviewees believed that some specific foods have cancer preventive effects. Three interviewees believed that soybean paste has a preventive effect although most interviewees think excessive consumption of soybean paste increases risk because it is salty. The National Research Council's report about diet and health<sup>17)</sup> showed that fermented food can cause stomach cancer. Such a misconception may come from easily accepting information read in a newspaper article. S2H and S4W said that mushrooms have preventive effect even though they don't know the reason. S3W and S7H mentioned garlic and soybean sprouts, respectively without any explanation. S5W and S3H believed ginseng has a preventive effect. S3H mentioned that the preventive effect of ginseng was proved by animal experiments although the exact mechanism was not understood. S3H also explained that ginseng has several kinds of minerals and organic substances, such as saponin which can protect against cancer. S3H and S5W believed that ginseng has also a placebo effect for prevention of cancer. They insisted that taking ginseng with faith of preventive effect might influence one's psychological status. S5W also said that seaweed eliminates waste products from blood which can cause cancer.

#### 6) Cooking Method

Grilling and barbecuing were significantly pointed out as a cancer promoters. Most respondents did not know how grilling might produce carcino-

gens. S2W, S3H, and S5H explained that when animal protein is burned, a nitrogen compound is oxidized and produces nitroamine. Two wives mentioned that less use of fat and more use of water, e.g. boiling and steaming rather than deep oil frying and pan broiling might decrease cancer risk.

#### 7) Food Habit

Many participants emphasized food habits. Like Greenberg's finding<sup>8)</sup>, many participants believed that a balanced diet was related to prevention of cancer. They believed that an unbalanced diet increases cancer risk. S6W said that a balanced diet is more important for cancer prevention than any specific food. Many interviewees also believed that irregular food habits such as skipping meals, over-eating, increases cancer risk. They also mentioned food temperature, e.g. high temperature food might cause esophagus and stomach cancer. They thought that small size of meals and mild food might decrease cancer risk.

#### 8) Others

None of the participants were concerned about weight. It might be because none of them were overweight, so, weight is not a serious problem for them. Only two interviewees mentioned obesity. S7W said that obesity might increase risk. S3H said that being overweight shows harmful effects slowly but it's a definite cause for cancer.

#### 6. Source of Information of Diet and Cancer

Like other Korean data<sup>11,13)</sup>, the primary source of information on diet and cancer in Korea were newspapers, woman's magazines, TV, health magazines. Many interviewees also get considerable information from friends, relatives, neighbors and family. Several interviewees said that they got the some information from high school and college education.

#### 7. Age for Cancer Prevention

Most interviewees thought twenties or early thirties are important ages for cancer prevention. S6H and S5H said that adolescence is important for cancer prevention and S5H said that therefore, nutrition education has to be given to teenagers. S2W said that early twenties is a transitional period from regular high school life to liberal college life, so, rapid change of lifestyle influences their health. S1W said that the mid twenties is important for women because many women in this age give birth to a baby, so it might influence their health. Most interviewees knew that cancer appears as disease after age forty. S2H said that men usually get cancer after forty because most of them have worked hard in order to stabilize their family life and job until late thirties. During this period, men got tired physically and also were under stress from their job.

#### 8. Conversation about Diet and Cancer

Most frequent topics discussed by husbands and wives about food in this sample were their food preference and taste of food. Only S3H said that he talked with his wife about health topic, e.g. obesity, avoiding salty food and artificially colored food.

### Conclusion

Interviewees with Korean young parents about diet and cancer showed significant concept held by them. Major findings are as follows.

- 1) Korean young families believed that mental stress is the most important risk factor for cancer.
- 2) Interviewees believed that drinking alcohol and smoking are related to cancer in liver, lung, stomach.
- 3) Most interviewees believed that food or diet is related to cancer, but some interviewees did not.



4) It was believed that prevalence of stomach cancer in Korea was related to Koreans' salty and hot diet in this sample.

5) Most interviewees believed that meat, smoked or cured meat, processed food, and fat increase the risk but vegetables and fruits decrease it.

6) Some interviewees mentioned that some nutrients such as vitamin C, zinc, and selenium have cancer preventive effect.

7) Some interviewees believed that some specific food such as, soybean paste and sprouts, mushroom, garlic, and ginseng, have cancer preventive effect.

8) Grilling and barbecuing were identified as a cancer promoters.

9) Most interviewees thought twenties or early thirties is an important age for cancer prevention.

10) The major sources of health and nutrition information were newspapers, magazines, radio, and TV.

11) The major topic of conversation about food and nutrition was families' food preference.

Based on these findings, nutrition education should emphasize that the diet and lifestyle can decrease cancer risk. It has to suggest new cooking methods to avoid too much salt and hot spices, and adequate amount of meat for cancer prevention. Nutrition education should emphasize balanced diet for cancer prevention, because there are many controversial findings about a certain diet or nutrient and cancer. Because articles in newspapers and magazines usually report the result of one study and one person's opinion, so many readers may accept those as justified results. Therefore, it will be more helpful for audiences to inform controversial findings or results review about relationship between a certain food or nutrients and cancer. Nutrition education should emphasize the importance of self-examination for breast cancer should

be accessible to the public. Both mass media and interpersonal channels should be used for the sample group to get information about diet and cancer. Nutrition education in high schools and colleges should be emphasized.

The research of communication<sup>18)</sup> demonstrated that the media had relatively limited effects upon the beliefs, attitudes, and behaviors of their audiences. The messages are received and interpreted selectively by the individual. Lazarsfeld and his associates at Columbia University considered an important basis of this selectivity to be the social statuses occupied by the individual. They contend that people who occupy similar social status roles will evolve similar folkways (orientations and modes of behavior). The similar folkways result from the processes of role socialization which are relatively uniform for a given role, even in a complex, industrial society. Thus, people who are the same age, sex, level of education, occupation and wealth will select and respond to communication content in a fairly uniform fashion.

Interviewees of this study were in their late twenties and early thirties. They were highly educated. It is believed that most of their concepts about diet and cancer were established in Korea because all interviewees went to America after finishing college or graduate levels of education. Most interviewees had been in America less than four years, and they still had a Korean diet because of easy access to Korean food. Sanjur<sup>19)</sup> insists immigrants change their clothes and their language first because they do not want to be conspicuous. But eating is a private affair; therefore, food habits are changed last. With this in mind, their concept can refer to that of Korean young parents and the result of this study can be applied to develop educational programs for cancer risk reduction for young parents with high educational levels in Korea.

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## 미국에 거주하는 젊은 한국인 부모의 식사와 암에 대한 개념 조사

박 동 연

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본 연구는 암의 예방에 관한 효과적인 영양교육 프로그램을 계획하기 위해 한국의 젊은 부모들이 현재 가지고 있는 식사와 암에 대한 개념들을 조사하였다. 10살 미만의 자녀를 1명 이상 가진 부모 14명을 In-depth 인터뷰 하였다. 모든 인터뷰 내용을 녹음하였고 분석을 위해 녹음된 내용을 근거로 concept maps을 작성하였다. 대부분 조사대상자들은 식사 또는 식품이 암의 발병에 연관 있음을 인식하고 있었으나 몇몇 조사대상자들은 식사 또는 식품이 암의 발병 위험을 감소 시킬 수 있다고 믿지 않았다. 대부분의 조사대상자들의 한국의 짜고 매운 음식이 위암의 발병과 관련이 있다고 믿고 있었다. 그들은 또한 육류, Smoked meat, Cured meat, Processed food, 지방은 발병 위험을 증가시키고 채소와 과일은 감소시킨다고 믿고 있었다. 조리법 중 grilling 또는 barbecuing은 암의 발병 위험을 증가 시키는 요인으로 인식되었다. 몇몇 조사대상자들은 특정한 영양소(Zn, Se) 또는 식품들(된장, 버섯, 마늘, 인삼 등)이 발병률을 감소시킨다고 믿고 있었다. 대부분 조사대상자들은 20대와 30대가 암의 예방을 위해 중요한 시기라고 인식하고 있었으며 신문, 잡지, 라디오, TV가 건강과 영양에 대한 정보를 얻는 주요 매체이었다.