Ji Jia Zhu & Yin Qing Hu
WOMEN'S AWARENESS OF REDUCING RISKS OF BREAST CANCER IN FINLAND AND CHINA

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Instructor Saara Hiltunen, MHSc	**Pages** 37 + Appendices(4)

Inspector Marja-Liisa Hiironen, MNSc, Doctor in Marketing

The study of women's breast cancer awareness was carried out in Finland and China in the year of 2010.

The purpose of this research was to assess the basic knowledge concerning awareness of breast cancer prevention or early detection and to explore women's attitudes towards reducing the risk factors. Moreover, it was also used to identify the differences in practices related to risk factors and prevention of breast cancer between Chinese and Finnish women.

The sample consisted of total 60 women, which were 30 Finnish women and 30 Chinese women. The women were selected from non medical background. The data was collected using self-designed questionnaires including 30 questions.

The findings showed the level of basic knowledge towards breast cancer as well as the comparison of awareness about breast cancer between Chinese and Finnish women. The research indicated the needs of counseling and education regarding the risks of breast cancer in order to reduce incidence of breast cancer in both countries. Apart from that, it focused on the needs of raising the women's awareness, breast self-detection abilities and improving the women's well-beings.

ABBREVIATION

BMI   Body Mass Index

CDC   Centers for Disease Control and Prevention.

GRACE   Genetic Risk Assessment in the Clinical Environment

WHO   World Health Organization

ACKNOWLEDGEMENT

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1 INTRODUCTION

According to the WHO (2004) statistics, cancer is the leading cause of death. More than 7.4 million cancer deaths annually occurred throughout the world. The main types of cancer leading to overall cancer mortality each year are: lung (1.3 million deaths/year), gastrointestinal (803 000 deaths/year), colorectal (639 000 deaths/year), liver (610 000 deaths/year), breast (519 000 deaths/year). (WHO 2004.) Breast cancer usually originates from ducts and lobules. Nearly 1.2 million women are diagnosed with breast cancer annually worldwide. (National Cancer Institute 2010.) Nowadays, breast cancer has already become number one killer among the women. (WHO 2004.)

From Finnish Cancer Registry (2008), the number of new cases is about 4317 annually. Every year around 834 women die from breast cancer. The incidence is increasing quite sharply between 35 to 55 years old. The age from 55 to 59 year old reaches the highest point of morbidity in 2008.

Breast cancer is also the most common malignancy among women in China. It occupies one-fourth portion among the whole incidences of malignant tumors in women. About 26000 women suffer from breast cancer in 2008. The ages between 45 to 50 years old have highest incidence. (Jemal et al. 2008, 106-130.)

Due to the high mortality rate of the breast cancer among women, the awareness of reducing its risks should be paid attention to. The purpose of this research was to assess the basic knowledge concerning awareness of breast cancer prevention and to explore women's attitudes towards reducing the risk factors. Apart from that, it could be used to identify the different practices related to breast cancer, risk factors and prevention between Chinese and Finnish women.

The work focused on raising the women's awareness and self-protection abilities, reducing the incidence of breast cancer and improving the women's quality of life. In addition, it would also support the health promotion of public health nursing working.

2 REVIEW OF EARLIER RESEARCH

Approximate 50 previous research articles related to the topic of breast cancer were explored in this study. They were found from electronic databases like Ovid, Ebsco and ScienceDircet as well as SpingerLink. The search was limited to years 2000-2010 in order to acquire the latest information about research. The articles met scientific and professional requirements set by the publishing companies to ensure validity of the research. Different risk factors that affect this disease such as women's awareness, family history, personal history, obesity, life style, as well as life activities were included. Most of these articles identified different risks which could cause breast cancer.

2.1 Women's awareness of breast cancer

Breast awareness is included that encouraging women to pay attention to their bodies and own breasts such as learning the appearance of breasts and recognizing any irregular changes. (National Health Service 2010.) It is a part of general body awareness. It is a process of getting to know own breasts and becoming familiar with their appearance. (National Health Service 2010.) The basic knowledge associated with breast cancer awareness is the looking and feeling of breasts as well as routine self-examination.

According to Scalon's (2004) research"Breast Cancer Care", it indicated that Asian and Arabic women have poor knowledge of life styles, environment, food and age affecting breast cancer. The knowledge of breast cancer's signs and symptoms was lacking among these women. Peacy & Steptoe et al. (2006) stated that young women always have low level of awareness of breast cancer risks in Europe. As almost 1/3 research participants did not know any of the risk factors of breast cancer. Only 57% of women were aware of the genetic link. Less than 5%

women recognized alcohol, exercise and obesity influencing breast cancer. Besides these two, Park & Chang et al. (2009) mentioned that 43.8% participants of 3630 women in Asia perceived their risks of getting breast cancer were low.

A report from India, breast self exam was known by only 33% participants and of those who knew about breast self examination correct with methodology was known only to 25% respondents. Mammography option was answered by 27.3%. The findings of this study depicted that awareness of breast cancer knowledge had not reached at the community level. (Puri et al. 2009.) Peacey et al. (2006) had an international survey (2006) about breast cancer risk awareness in young women. The data from 23 countries indicated that just 57% were aware of the genetic link and fewer than one in 20 women correctly identified alcohol, exercise or obesity as factors influencing breast cancer.

2.2 Early detection

2.2.1 Screening

Screening is the examination by a single test or procedure of a population of a apparently well people for purpose of detecting those with a particular unrecognized disease or defect. (Last 2000.)

Breast cancer screening is a method to check women's breast for cancer before any signs and symptoms occurring. It is regarded as the primary prevention in Finland public healthcare. (Primary Health Care 2009.) In Finland, breast cancer screening of population-based was initiated in 1987. In 1992, all women aged from 50 to 59 years were required for screening every two years. All women until 69 years of age were invited to participate in this early detection since 2007. (Anttila, Koskela & Hakama 2002, 153.) The main method of breast cancer screening in Finland is mammography. In China, breast cancer prevention has

not reached to primary prevention because of the large population. Big efforts have already been made to promote the development of the prevention. Breast cancer screening becomes more popular and regularly in China. (China CDC 2009.)

Mammography acts as a major method in the field of breast cancer screening. Repeating mammography in regular interval is a meaningful intervention for optimal reduction of breast cancer. It has higher detecting rate of tumor in earlier stage. Current guidelines demonstrated that screening in earlier age should be recommended to those who have high risk of breast cancer. (Gross et al.2005, 158-164.)

Unfortunately, some studies suggested that only about two thirds of women who got a mammogram return for regular testing. (Barr et al. 2001, 661-667.) The research from Britain found that women held positive views on mammography but did not appear to be well informed about the potential disadvantages. These findings suggested that further attention should be given to provide information to women with family history about mammographic screening. The results from this study highlighted that some women had an overly optimistic view of the role mammography which might play in reducing breast cancer risk. (Tyndel et al. 2008, 1007 – 1012.)

2.2.2 Brest self-examination

Breast self-examination is one of the primary methods for early detection of breast cancer. However, in a study by Gasalberti (2002), a low rate for breast self-examination has been associated with not knowing how to perform, lack of awareness about breast cancer, lack of confidence in breast self-examination skills and time, fear of finding cancerous lumps and worrying about suffering illness as well as perceiving the performance as unpleasant and embarrassing. In

order to increase the women's awareness of breast cancer and breast self-examination, a helping relationship that includes social support from various sources was important. An empirical research from Korea identified spouses as important supporters for regular breast self-examination. (Park et al.2007, 78-84.)

Funke (2008) pointed out that the long term in teaching breast self-examination and breast cancer awareness in seminars had profound effects on women in carrying out this performance regularly and correctly without influence of age or education.

Young breast cancer patients have a lower rate of survival than old breast cancer patients due to being diagnosed at advanced stages. The young women should pay more attention to breast awareness. The study group from Turkey suggested the health care staffs should develop effective programme to help young women acquire information about breast cancer risks and practice of breast self-examination. (Özmen, Karayurt & Çetinkaya 2008, 359.) It could be necessary for women whose relatives with breast cancer to have breast self-examination. Charmlers (2000) indicated that health care professionals should strive to encourage women with a family history of breast cancer to perform breast self-examination and to promote women's efforts to care for themselves effectively.

On the other hand, McGready, Littlewood and Jenkinson (2004) investigated that evidence on breast self-examination was clear. Therefore, there was no benefit to breast cancer mortality.

2.3 Contributing factors

2.3.1 Life style factors

Several studies indicated that alcohol, smoking, diet habits, physical activity and stress had the moderate association with breast cancer. Changing the unhealthy and inappropriate life styles could reduce the risk of breast cancer.

Numerous early researches revealed a relation of alcohol drinking to an increased risk of breast cancer. Women who had alcohol consuming history got the risk of breast cancer almost 1.2 times greater than women who never drank alcohol. (Lash et al. 2002, 396-399.) From Willet (2002), the relative of breast cancer risk of women with no drinking was significant lower than who usually use alcohol.

A genetic predisposition may play an evidently role although the exact mechanism which alcohol makes the cocarcinogenic effects on breast was not so clear until now. Through the metabolism of alcohol in human's body, two hormones are involved in this process. One of them is Alcohol dehydrogenase. It can break the alcohol into acetaldehyde. The elevated values of active acetaldehyde could lead high risk of various cancers including in breast tissue. (Seitz & Maurer 2007, 42-43.) In addition, alcohol could influence the concentration of estradiol, the increased amount of bioavailable of estrogen and total estrogen level and could be resulted from that. The risk of breast cancer would be raised especially in postmenopausal women. (Lash et al. 2002, 396-399.)

According to Young et al. (2009), some evidence linked between usage of tobacco and breast cancer. It stated that mammary tissue might have increased possibility to carcinogenic exposures during the puberty and first full term

pregnancy. Moreover, a comparison also had done among women who were nonsmoker, active smoker and passive smoker. The result was so obvious that active or passive smoker got more possibility to increase the risk of getting breast cancer. Women who began smoking before 26 years old or had more than five years of smoking history had more risks of breast cancer.

Physical inactivity commonly was regarded as one of the risk factors for breast cancer. Several studies revealed that enough physical activity cause the reduction in the risk of breast cancer. Donville & Brien (2000) stated that physical activity could improve the hormone balance, strengthened the immune system by raising the T cells and decrease the body fat. As a result, total estrogen levels could decrease to prevent the breast cancer.

The intensity, duration and timing also had close relationship with the reduction of the risk. For postmenopausal women, moderate or vigorous exercises during the adolescence and adulthood had the remarkable reduction. When it came to premenopausal women, only vigorous exercise could help to decrease the risk when it happened in adolescence and early adulthood. Moderate activities did not have such consequently marked function. (Kruk 2010, 311-319.)

Ronco and Fabra's (2003) study showed that the relationship between breast cancer and white meat intake appears slightly protective. On the other hand, high fat food produced the negative effect in the prevention of breast cancer. High fat might raise the value of circulating estrogen which can stimulate the growth of malignant cells in breast tissue. Saturated fat consuming could increase the risk through many processes, such as by elevating the expansion of genes promoting inflammatory responses and blocking apoptosis or increasing the level of low density lipid and cholesterol which could lead to development of carcinogenic cells. (Sandin 2007, 1570-1576.) Avoiding diet which was high in meat consumption, fast food, starches and diary fat should be a key point to be away

from fatty food. Healthy eating pattern should consist of vegetables, fruits, olive oil and sea food as well. (Ruault 2010, 7-8.)

Soybeans also referred as soy or soya, are plants of Asian origin that produce beans used in a variety of food products. (Biology Online 2009.) Soybeans and soy products are a major source of phytoestrogen, an estrogen like substance also referred to as plant estrogen. (Medline Plus 2010.) Isoflavones, one class of phytoestrogens, are structurally similar to mammalian estrogens which have estrogenic properties and potential anticarcinogens. (Peeters et al. 2003, 171-183.)

According to Wu (2008), there was an approximately 16% risk reduction per 10 mg of Isoflavones intake per day. A study from Singapore also stated that high soy intake was associated with a significant 18% reduction in breast cancer risk. It suggested that soy food may have lasting beneficial effect against breast cancer development. (Wu et al. 2008, 196-200.) Murkies et al. (2000) found that higher urinary excretion of the specific isoflavones was found in women without breast cancer compared to patients with breast cancer during menopausal time. The Japanese research showed that a higher dietary intake of miso soup which was one of specific soy food had been associated with reduced breast cancer risk. (Yamamoto et al. 2003, 906-903.)

Women with major life events stress of daily activity or depression had 3.7 times higher risk compared to those which did not experience such stress. Those who reported having stress in her work had 16% higher risk for breast cancer than those who had no stress. (Kruk &Hassan 2004.)

The immune system is the major defense mechanism against tumor insult. The American study group stated that objective and subjective breast cancer risk were associated with impaired immune responses in healthy women especially in

women with family history of breast cancer. Increased psychological distress could contribute further to negative immune responses by increasing the breast cancer from developing. (Park & Kang 2006, 1152.)

2.3.2 Family history

Approximately from 15% to 20% of women who developed breast cancer had a family history of the disease. (Offitet et al. 2004.) A fivefold breast cancer risk existed when two first degree relatives were diagnosed with the disease. (American Cancer Society 2010.) The women with family history should be referred for genetic counseling and consideration for some testing. The women with history of breast cancer have different levels of psychological distress and functioning. The nurses should make efforts on education and training for nurse practitioners' knowledge on family history and breast cancer risk assessment for breast cancer reduction. (Edwards et al. 2009, 270-277.)

Women with a family history of breast cancer have a high risk of breast cancer. From Bartels, Tilanus-Linthorst, Obdeijn and Oudkerk (2000) research, the women with family history should have physical examination and mammography. Starting screening before the youngest age of onset can result in higher detection rates. (Bartels, Tilanus-Linthorst, Obdeijn &Oudkerk 2000, 514-519.) Sauven (2004) pointed that the majority of women who have a relative with breast cancer were not at significantly increased risk. They should be aware of their breast changes in daily life.

A USA group developed a computerized tool that analyzes breast cancer risk, Genetic Risk Assessment in the Clinical Environment (GRACE). The women with a family history could learn about the disease and have counseling. (Braithwaite et al.2005, 433-439.) The group from UK discovered that screening programme should be provided to women at moderate breast cancer risk and the largest

patient group with family history. (Gui, Kadayaprath& Darhouse et al.2006, 719-724.) According to Edwards and Palomares (2008), the nurse could play a significant role in primary and secondary preventive measures to reduce breast cancer in their patients with family history.

In addition, nurse must be familiar with risk factors assessment in order to provide appropriate counseling, cancer screening and risk reduction recommendations when needed referral for genetic counseling and testing. (Edwards and Palomares 2008, 361-369.)

2.3.3 Pregnancy

The later age at first full-term childbirth (older than 30 year-old) and nullparity are common factors for breast cancer. The collaborative team from Britain (2002) reported that a woman's risk of developing breast cancer decreased by 7.0% for each birth and decreased by an additional 4.3% for every 12 months of breastfeeding. The protective effects of early age at first full-term pregnancy, parity and lactation are important factors which can contribute to reducing breast cancer risk. (Okobia 2005, 34-42).

2.3.4 Oral contraceptives

Oral contraceptive is the most popular type of birth control. It stops ovulation and prevents the ovaries from releasing eggs. The pill also thickens cervical mucus and makes it harder for sperm to enter the uterus. (Feminist Women's Health Center 2010.)

Oral contraceptives are used to prevent pregnancy. Estrogen and progestin are two female sex hormones. Combinations of estrogen and progestin work by preventing ovulation. (Medline Plus 2010.) Oral contraceptives are extremely

effective in preventing pregnancy when used correctly. Estrogen use is associated with increasing the risk of breast cancer. It can indirectly stimulate cell division by instructing a target cell to make estrogen receptors for other hormones that stimulate breast cells to divide. (Cornell University 2001.)

Three articles identified associations between oral contraceptives use and increased risk of breast cancer among specific population groups of women or women who had used oral contraceptives during certain time periods. The risk of breast cancer had been reported to be particularly high among oral contraceptives users with a family history of breast cancer in first-degree relatives compared with women with no such history but this was noted only in 1975 when estrogen doses were higher. (Grabrick et al. 2000, 1791-1798.) A meta-analysis study suggested that oral contraceptives were associated with an increase in premenopausal breast cancer risk. (Kahlenborn et al. 2006, 1290-1302.) Cerhan (2006) identified that oral contraceptives use before first full-term pregnancy associated with breast cancer risk in later life. Meanwhile , some evidence suggested that oral contraceptives did not play a clinically important role in the risk of breast cancer. (Petra et al. 2008, 86-91.)

2.3.5 Obesity

"Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in meters (kg/m^2)." The normal range is from 18.50-24.99 (kg/m^2). Underweight is less than 18.50 (kg/m^2). Overweight is more than 25 (kg/m^2).   (WHO 2010.)

Body mass index is a static measurement. It is always used to justify obesity. Increased Body Mass Index has association with increased breast cancer risk. It

could be a clear indicator to show the metabolic role of obesity in altering the glucose metabolism, ovarian hormone and growth factor which could stimulate the mammary carcinogenesis. (Torio et al.2010, 146-150.)

From Cui et al. (2002), obesity is an established risk factor for breast cancer in postmenopausal women but not in premenopausal. Avoiding adult weight gain and maintaining a healthy body weight as well as normal Body mass index might contribute importantly to decreasing breast cancer risk and mortality especially in postmenopausal women. (Barnett 2003, 73-76.) Both Hensen, Overvad (2000) and Kuhl (2005) also stated that obesity or overweight has the association with breast cancer especially in post menopause women. For obese women, they have the high risk to develop the metabolic problem including insulin resistance and hyperinsulinemia. Therefore, the risk of getting breast cancer could be increased. Postmenopausal women should pay attention to the weight control in order to prevent breast cancer risks.

2.3.6 Medical history

Fibroadenoma is a common breast lesion occurring in women. Ei Wakeel and Umpleby (2003) stated that the relative risk of developing breast cancer in patients who had surgically excised fibroadenomas increases in the presence of atypical hyperplasia or a family history of breast cancer. (Ei Wakeel and Umpleby 2003, 302-307.)

Epithelial hyperplasia is an overgrowth in the lining of the terminal duct lobular unit which results in general lumpiness, a lump or nipple discharge. If cytology shows atypical features, the condition is called atypical hyperplasia which needs to be kept under surveillance as it can be a risk factor for breast cancer. (National Cancer Institute 2010.)

3 PURPOSE AND RESEARCH QUESTIONS

The purpose of this research was to assess the basic knowledge concerning awareness of breast cancer prevention and to explore women's attitudes towards reducing the risk factors. Apart from that, it was still used to identify the different manners related to breast cancer, risk factors and prevention between Chinese and Finnish women.

1. What kind of knowledge do the women have concerning the breast cancer both in Finland and China?
2. What are differences concerning knowledge and awareness of breast cancer between Finnish and Chinese women?

4 METHODS OF RESEARCH

This research was done as quantitative research using structured questionnaires to Finnish and Chinese women. In quantitative research, numerical or statistical language is always used to express the scientific properties, phenomena and their relationships. (Parahoo 2006, 48-49.)

In Webb's (2003) analysis of all papers published in the Journal of Clinical Nursing in 2001 and 2002, she found that questionnaires were most frequently used by researchers.

4.1 Data Collection

The data was collected using self-designed questionnaires. The questionnaires included 30 questions. All the questions were related to their daily life and they were easy to understand. 30 questionnaires were carried out in Finland and distributed randomly. In addition, the others were sent to China. Healthcare providers had been avoided to participate in this investigation.

Data collection was carried on form the beginning of June to the end of July in 2010. The total of 62 women participated in this survey. However, only 60 questionnaires were returned. All the questionnaires had been translated to Chinese and Finnish in order to help the women understand these questions. They were distributed randomly both in Finland and in China. In Finland, 16 participants were from community of Kokkola. Four respondents were found in Kokkola market place. The rest of 10 women were met in South-Savo area. In China, 20 participants were from community of Shanghai. Ten respondents were researchers' friends from different provinces of China. The final answers

were translated back to English.

4.2 Sample population

The samplings were collected in China and Finland. 30 Finnish participants were form south and west area. At same time, 30 survey papers were sent to three different provinces in China. They were Shanghai, Jiangsu and Zhejiang Province. The ages of women answering were from 25 to 55 years old. The women enrolled in this study had different education background. Women with health related professional backgrounds like nurses were not selected purposefully as they knew a lot about breast cancer.

4.3 Methods of analysis

In this research, quantitative analysis was used to analyze the data and identify factors that influenced women awareness of breast cancer.

Analysis of data is conducted to reduce, organize and give meaning to the data. Computer is used to describe most analysis in quantitative research. (Burns & Grove 2005, 43.)

The data from questionnaires was collected according to same categories. The demographic data was counted by percentage and mode as well as ratio. The graphs were developed by Microsoft Office Excel 2007. Comparison between Finnish and Chinese women was done by calculating the percentages and making the graphs according to data. The graph showed the phenomena visually and clearly.

5 FINDINGS OF RESEARCH

The results of the questionnaires regarding women's awareness of breast cancer were analyzed accordingly. The participants were divided into two groups which were 30 Finnish women and 30 Chinese women. 62 women filled this questionnaire attached in Appendix 1. However, 60 survey paper was returned. The information was collected from Finland and China since June to the end of July 2010.

5.1 Background information

Age

In total, 60 women constituted the research population. In Graph 1, majority of participants were the age group 25-34 year-old (n=32, 53%) followed by the age group 45-55 year-old (n=19, 32%). Obviously, the age group 35-44 year-old occupied least portion (n=9, 15%). In these three groups, the number of Finnish and Chinese women was almost equal except the age group of 35-44 year-old.
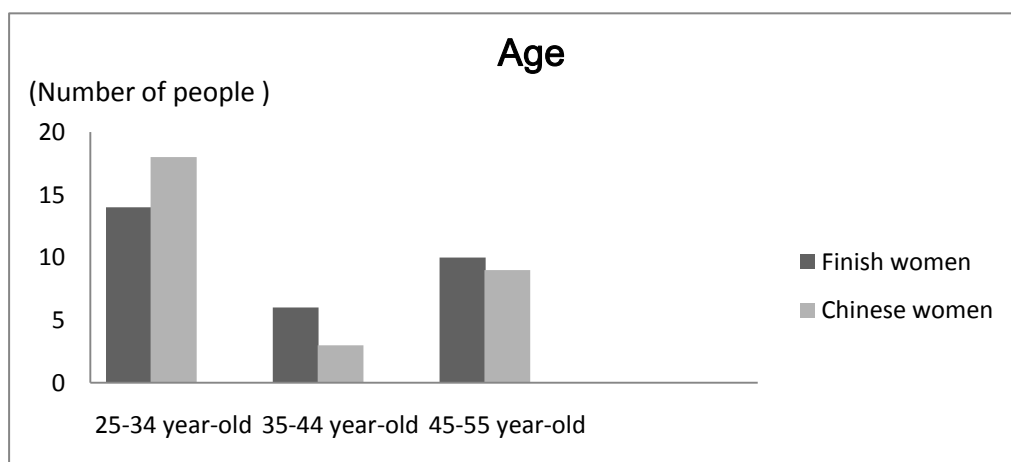
GRAPH 1. Age group

Educational background of participants

Table 1 describes the education background distribution of respondents. The percentage of high school or technology school peaked at 50% of the total population. On the contrary, the amount of women who had Master or PhD reached bottom (n=4, 7%).

As shown in the Table 1, it is clear that the number of Finnish women with middle school background (n=6, 20%) was six times more than Chinese women (n=1, 3%). Furthermore, the percentage of Chinese women who had bachelor degree (n=14) was 30% which is more than Finnish women (n=5).

TABLE 1. Distribution of education background

Education level	Finish women (N=30)	Chinese women (N=30)
Middle school	20%	3%
High school or technology school	53%	47%
Bachelor	17%	47%
Master or PhD	10%	3%

Body mass index

Personal height and weight were provided by each participate in survey paper. Body mass index is defined as the weight in kilograms divided by the square of the height in meters (kg/m^2). The normal range is from 18.50-24.99 (kg/m^2). Underweight is less than 18.50 (kg/m^2). Overweight is more than 25 (kg/m^2). (WHO 2010.)

From Graph 2, 33 women had normal range of body mass index. Among the data in range, the figure of Chinese women (n=22) was almost double compared with Finnish women (n=11). Finnish respondents occupied two-thirds distribution in overweight group (≥25 kg/㎡). Furthermore, the amount of underweight women was almost in the same level between two countries.

Body mass index

(Number of people)

- Finnish women
- Chinese women

< 18.5kg/m2. 18.5-24.9kg/m2 ≥25kg/m2.
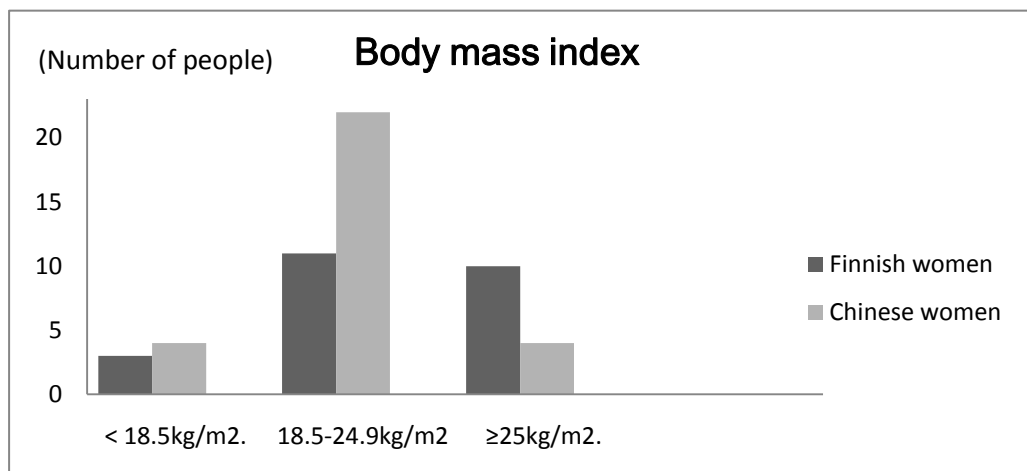
GRAPH 2. Body mass index group

Sources of information concerning the breast cancer

All women in this investigation knew something about the breast cancer. Most Finnish women (n=21, 70%) read about the breast cancer though books and magazines. Meanwhile, most Chinese women (n=20, 67%) heard about breast cancer from media (television, radio, Internet).

Menstruation background

There was significant difference between Finnish and Chinese women when it came to the age of menarche. 11 Finnish women had their first menstruation

before 12 year-old but only four Chinese women had menarche in this age group. The amount of women with menopause (n=11, 18%) comprised small part of the total number. Among these groups, only one Finnish woman and two Chinese women increased their weights 5-10 kg.

Pregnancy

40% Finnish women (n=12) and 60% Chinese women (n=18) had no pregnancy history. Finnish respondents (n=12, 67%) had first child in the age of group 18-25 year-old. Nevertheless, Chinese respondents (n=7, 58%) had first child later in the age group of 26-30 year-old.

5.2 Family history

According to Graph 3, the number of Finnish women (n=2, 6%) whose first-degree relatives with breast cancer was the same as Chinese women (n=2, 6%). The graph provides interesting data regarding the number of second-degree relatives with breast cancer among Finnish and Chinese women. The ratio was 9: 0 (30%: 0%).
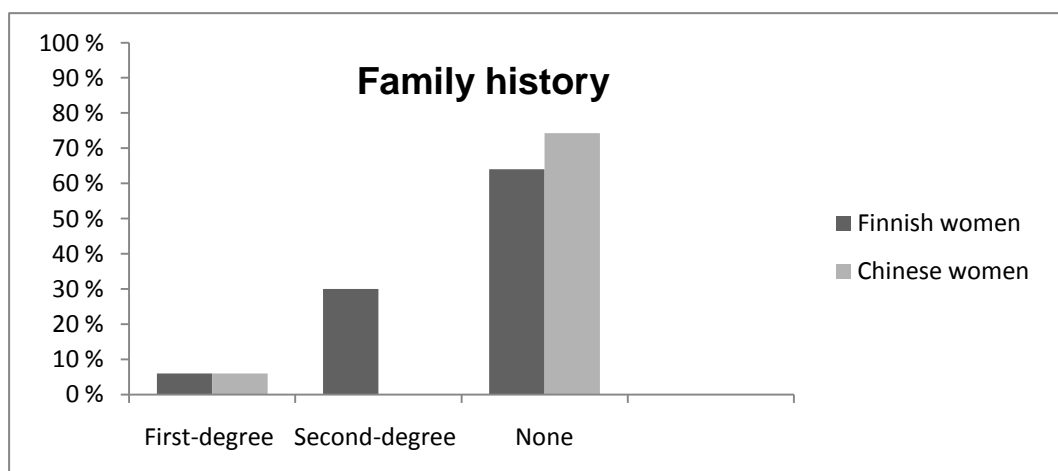
GRAPH 3. Family history of breast cancer

5.3 Medical history

Five Finnish women and four Chinese women expressed having breast changes. The main changes were lumps. Two Finnish women and all four of the Chinese women had this problem in this group. Only one Finnish woman had skin changes in her breast and another two had wounds in the breasts.

5.4 Breast self-examination

11 Finnish women and 19 Chinese women did not perform breast self-examination regularly which is 50% of women in total sample. Five Finnish women and three Chinese women did this examination every month. In additional, 14 Finnish women and eight Chinese women did breast self-examination at least three months. The reasons for not doing breast self-examination were also investigated. The option that "I know about it but I do not have time" occupied one-fourth (n=15) in total sample. Ten Finnish women and five Chinese women chose this opinion. Only one Finnish woman (8%) chose the reason that "I would like to do but I do not know how to do it". However, 12 Chinese women (92%) chose this answer. Furthermore, two Chinese women (100%) and no Finnish women (0%) chose the option that "I do not know why I should do it."
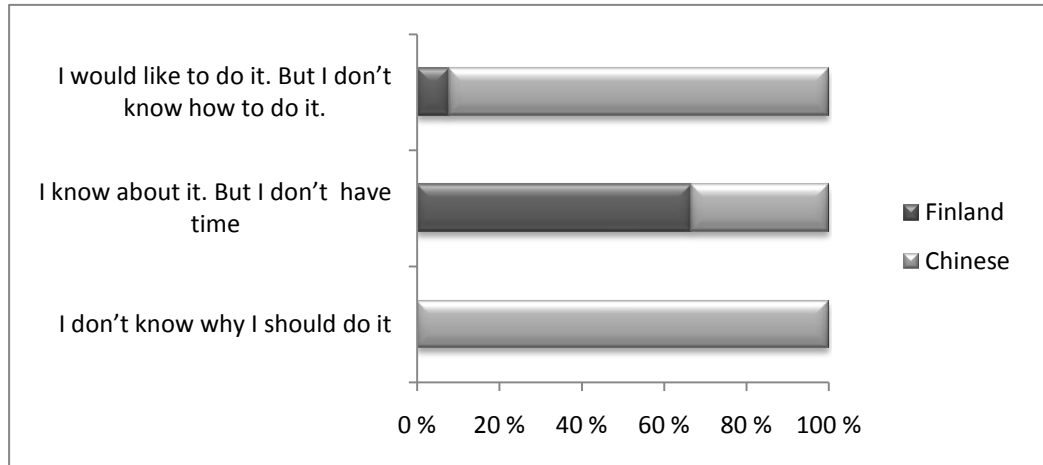
GRAPH 4. Reasons for not doing breast self-examination

5.5 Mammography

11 Finnish women and 13 Chinese women had done mammography which was 40% women of the total number among respondents. No Finnish women and four Chinese women did mammography once a year. Five Finnish women and seven Chinese women did mammography once in two years. Six Finnish and two Chinese women did mammography once in five years.

The reasons for not doing mammography were investigated as well. The option that "It is not for my age group" occupied 61%, which was 18 Finnish women (50%) and four Chinese women (11%). Only one Finnish woman and 11 Chinese women expressed that "I do not have enough information about it". However, two Chinese women (100%) and no Finnish women (0%) chose the reason that "I know about it, but I do not have time."
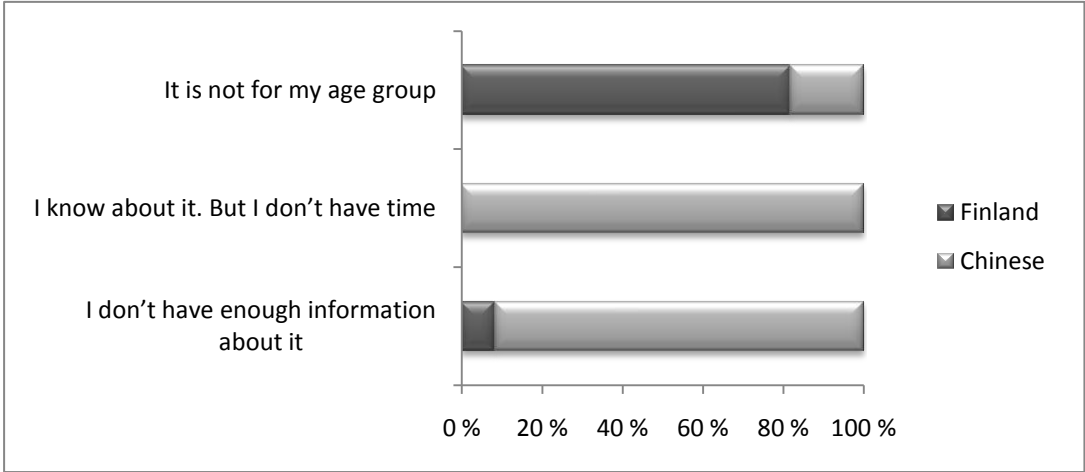
GRAPH 5. Reasons for not doing mammography

5.6 Oral contraceptives

Graph 6 illustrates the frequency of oral contraceptives between Finnish and Chinese women. None oral contraceptives users made up 73% in total respondents. The noticeable difference could be found between Finnish and Chinese women who often use oral contraceptives. Finnish data (20%) was nearly seven times more than Chinese one (3%).
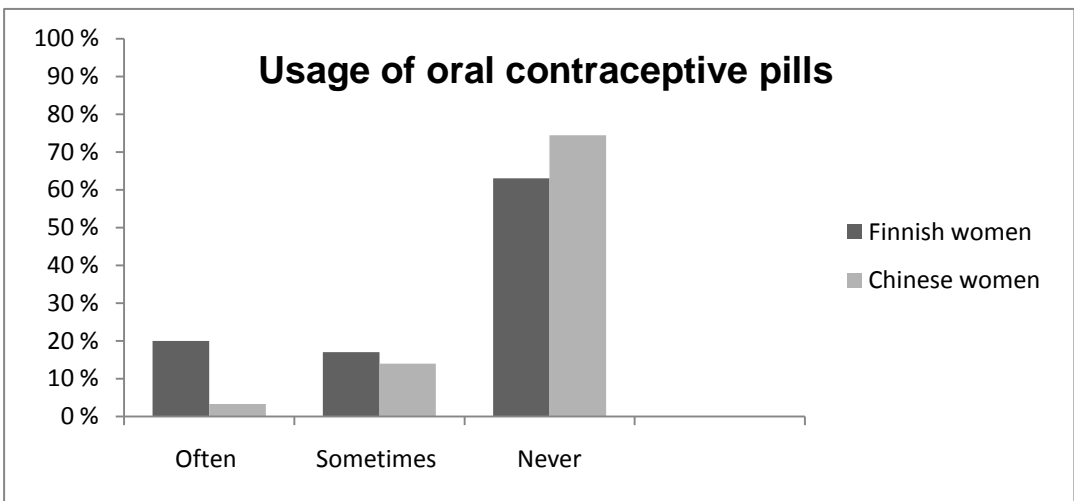
GRAPH 6. Usage of oral contraceptive pills

5.7 Life style factors

The table consists of six segments below, which includes smoking, drinking, high fat intake, soy food intake and exercises as well as suffering stress.

The majority did not smoke in both countries. 23% Finnish women and 10% Chinese women smoked. 47% Chinese women sometimes used alcohol. Nonetheless, 63% Finnish women sometimes drank alcohol. In addition, 10% Finnish women consumed alcohol frequently. The statistic of high fat intake for Chinese women (n=6, 20%) was half the amount of Finnish women (n=12, 40%). The intake of soy food in Chinese women was significantly more than that in Finnish women. The percentages were 97% and 40 %. All Finnish women took part in physical activities but 13% Chinese women never had exercises. Compared with Chinese women, all the Finnish women suffered stress in daily life. The rate of Finnish women (n=13, 43%) who always had stress doubled that of Chinese women (n=6, 20%).

TABLE2. Life style factors

Life style factors	Finnish women (N=30)			Chinese women (N=30)		
Frequency	Often	Sometimes	Never	Often	Sometimes	Never
Smoking	6%	17%	77%	0%	10%	90%
Drinking	10%	63%	27%	0%	47%	53%
High-fat intake	40%	54%	6%	20%	60%	20%
Soy food intake	13%	27%	60%	33%	64%	3%
Exercises	53%	47%	0%	23%	64%	13%
Suffering stress	43%	57%	0%	20%	74%	6%

5.8 Counseling

Only one Finnish woman and five Chinese women were not afraid of breast cancer. 18% Finnish women were often scared about breast cancer. At the same time, 27% Chinese women feared this disease.

The graph is clear to depict that the number of Chinese women (n=17, 57%) without counseling was significant more than that among Finnish women (n=2, 6%). The graph also describes that the percentage of Finnish women (94%) having counseling was two times as much as Chinese women (43%).
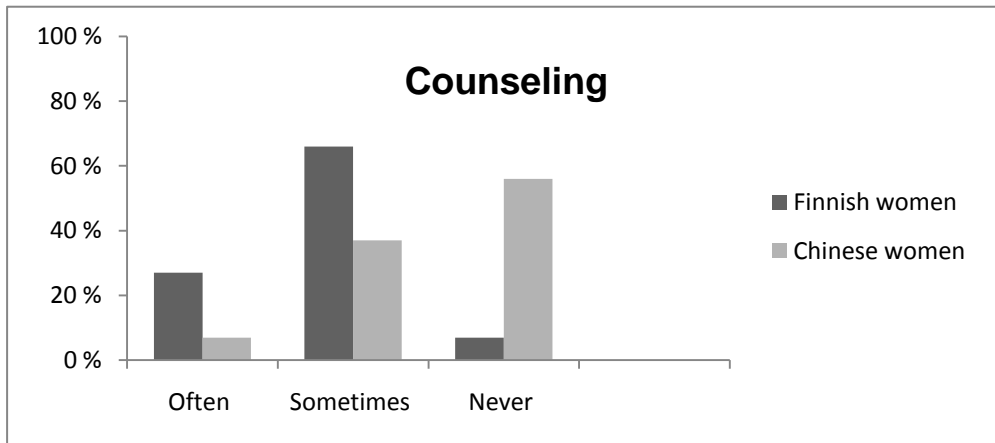
GRAPH 7. Counseling distribution

6 DISCUSSION

6.1 Main findings

Background information

All women in this sample population knew something about breast cancer. It was common that women with high education usually had higher level knowledge of breast cancer prevention. Over 50% women (n=33) had normal range of body mass index, which were 11 Finnish women and 22 Chinese women.

Nevertheless, Finnish respondents occupied two-thirds distribution in overweight group (≥25 kg/㎡). The major source of getting information of breast cancer was also different between two counties. Most Finnish women (n=21, 70%) read about the breast cancer though books and magazines. Meanwhile, most Chinese women (n=20, 67%) had heard about breast cancer from media (television, radio and Internet). 11 Finnish women had their first menstruation before 12 year-old but just four Chinese women had menarche in this age group from statistics. The main age group for Finnish women with pregnancy experiences was 18-25 year-old in this survey. However, 26-30 year-old was more common ages of pregnancy in Chinese group.

The majority of participants (n=47, 78%) had no family history of breast cancer in this study. The ratio of number of second-degree relatives with breast cancer among Finnish and Chinese women was 9: 0 (30%: 0%).

Nine respondents expressed having breast changes. Lumps were the main problem. Two Finnish women and all four of the Chinese women had this

problem in this group. Only one Finnish woman got skin changes in her breast and another two had wounds in the breasts for the rest of Finnish women with medical history. In consequences, Finnish screening performance and its education has reached higher level.

19 Finnish women and 11 Chinese women did breast self-examination regularly which is 50% of women in total sample. Five Finnish women and three Chinese women did this examination every month. In additional, 14 Finnish women and eight Chinese women did breast self-examination at least three months. It was obvious that Finnish women had more awareness in this part. When it came to the reason for not doing breast self-examination among Finnish women in this research, most of them did not have time to do it even if they had got enough information. On the country, most Chinese respondents expressed not having adequate information about this examination.

Breast self-examination is only useful when women perform this examination regularly and correctly. Effective teaching breast awareness and breast self-examination could be on the compliance of women who attended such seminars. Breast self-examination teaching should be embedded in a breast awareness seminar in order to reduce fear and ignorance. WHO (2010) updated the guidelines to instruct the methods of breast self-examination. Poor awareness of breast self-examination among Chinese women was indicated in this study.

19 Finnish women and 17 Chinese women had not done mammography which was 60% women of the total number among respondents. Significant proportion of the respondents without mammography examination in China (n=11, 37%) were lack of information about it. In comparison, only one Finnish woman was in the same situation.

The knowledge of breast cancer risk factors related to life style was high among those women. Majority of participants did not smoke in both countries. Several articles had mentioned that smoking increased the incidence of breast cancer for women from previous literature review. Most participates ate vegetables and fruits at least once a day. The general respondents' sleeping hours were between six to eight hours. Furthermore, 56 women, especially Finnish women took part in exercises in their daily life.

Meanwhile, the percentages of women who often smoked and drunk were significantly different between Finnish and Chinese women. The ratios were 6%: 0% and 10%: 0%. The statistic of high fat intake for Chinese women (n=6, 20%) was half the amount of Finnish women (n=12, 40%). Meanwhile, it was direct proportion to the amount of overweight women. As was shown in earlier studies, high fat intake and obesity could trigger the risk of breast cancer. Health food pattern should be used to maintain the ideal weight especially in menopausal women. The intake of soy food in Chinese women was significantly more than Finnish women. The percentages were 97% and 40 %. Compared with Chinese women (n=2, 6%), all the Finnish ones (n=30,100) suffered stress in daily life.

The awareness of breast health counseling was far from satisfactory in China. More than 50% Chinese respondents never had breast health counseling before, as counseling is not wide spread in China. The counseling about breast health in Finland was more popular. 94% Finnish women (n=28) had received counseling before.

6.2 Ethical consideration

The participation of this research was based on voluntary principle and randomly. All the participants were clear to understand the aim of this study by verbal explanation. Verbal instructions were received by same level of standard. Experimenter never influenced the performances of the participants by any expectations and biases. The survey was collected anonymously. The data was promised to keep confidentially and securely. Only researchers could handle the personal information. The verbal instructions were at the same level of standard. The last but not least, all the previous literature was searched from reliable and scientific sources such as Ovid, Ebsco and ScienceDircet which dated from year 2000 to year 2010.

6.3 Reliability and validity

Reliability and validity are tools of an essentially positivist epistemology. Reliability is the degree to which a measurement procedure produces similar outcomes when it is repeated. Validity is the test for determining whether a measure is right concept that the researcher wants. (Moskal, Leydens & Pavilich 2002, 351-354.)

This research was designed to help Finnish and Chinese women to raise the awareness of breast cancer prevention. The data was collected through self-designed questionnaires. The measurement was statistical analysis. Microsoft Office 2007 Excel was applied in data analysis. Double checking was to be assured the reliability of this research. Two researchers calculated same field data in two different periods. The results remained same finally.

7 CONCLUSIONS

This study was an assessment of basic knowledge of breast cancer and attitude towards breast cancer risk factors in Finland and China. Women still showed the knowledge deficits in various aspects. The research highlighted the needs of counseling and education regarding the risks of breast cancer in order to reduce incidence of breast cancer. Besides that, it focused on raising the women's awareness, self-protection abilities and improving the women's quality of life. Moreover, it would also support the health promotion in public health nursing working.

7.1 Further study and limitations

It was necessary for health care professionals to provide useful information for women to acquire effective skills due to low awareness of breast self-examination practice. "The breast self-examination could be done using vertical strip, wedge section and concentric circle detection methods." (WHO 2010.) The right methods of breast self-examination were shown in Appendix 2.

Mammography screening programme is suggested to be established by Chinese Public Health Institution since China has not standard guidelines to recommend routine mammography screening to women in certain age group.

The concept of counseling for Chinese women needs to be emphasized. Community health care workers should make big efforts on breast health counseling. A suggestion promoting breast health in community should develop in the counseling system. An important issue to be considered is breast cancer risks education. It is equally essential to teach the basic

knowledge of breast cancer risk factors and improve awareness of prevention. The women should be inspired to take care of their own breast health by encouragement and motivation.

This study illuminated important issues which were the women's awareness of reducing risks of breast cancer in Finland and China but there were some limitations that needed to be considered. The reasons behind different level of breast cancer awareness in both two countries were lack of descriptions. There were limited amount of researches related to Finnish women's awareness of breast cancer in English. Meanwhile, the attitude towards reducing breast cancer in both countries should be developed in further study.

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Breast cancer awareness

1. Age: ☐ 25—34 ☐ 35—44 ☐ 45-55

2. Height: _____cm   Weight: _____kg

3. What is your education background?
   a. Middle school   b. High school or technology school
   c. Bachelor   d. Master or PhD

4. I have heard about breast cancer?
   a. Agree (Please continue to Q5)   b. Disagree (Please refer to Q6)

5. If yes, how did you know about breast cancer?
   a. Books and magazines   b. Media (Television, Radio, Internet)
   c. Friends   d. Others _____

6. When did you first have menstruation?
   a. Before 12 years old   b. 12-17 years old   c. After 17 years old

7. I have menstruation.
   a. Agree   b. Disagree(Please continue to Q8)

8. Do you have any weight increases after menopause?
   a. Below 5 kg   b. 5—10 kg   c. 10—20 kg   d. Over 20 kg

9. How many pregnancies have you had?
   a. 0 (Please refer to Q11)   b. 1—2   c. 3—4   d. Over 4

10. How old were you when you first became pregnant?
    a. Below 18   b. 18—25   c. 26—30   d. 31—35   e. Over 35

11. Do you have any family member diagnosed breast cancer ?

    a. My mother or my sister had   b. My cousins or aunts had   c. None

12. Have you had any changes in your breast?
    a. Skin changes   b. Wounds   c. Lumps   d. Others_____

13. I do breast self examinations.

a. Every month   b. At least once in 3 months   c. I don't do regular self-examination

14. If you do not do breast self –examination, why not?
    a.   I don't know why I should do it   b. I know about it. But I don't have time
    c. I would like to do it. But I don't know how to do it.

15. How often do you have mammography check?
    a. Once a year   b. Once in 2 years   c. Once in 5 years
    d. I have never been to mammography

16. If you do not have mammography check, why not?
    a. I don't have enough information about it   b. I know about it. But I don't have time   c. It is not for my age group

17. I use oral contraceptive drugs.
    a. Often   b. Sometimes   c. Never (Please refer to Q19)

18. How long have you used oral contraceptive drugs?
    a. 1—2 years   b. 3—4 years   c. Over 5 years

19. I smoke.
    a. Often   b. Sometimes   c. Never(Please refer to Q21)

20. How many cigarettes do you have one day?
    a. 1-5   b. 5-10   c. Over 10

21. I drink alcohol.
    a. Often   b. Sometimes   c. Never(Please refer to Q23)

22. How much do you drink one occasion?
    a. 1-2 drinks   b. 2-5 drinks   c. Over 5 drinks

23. I like to have vegetables and fruits.
    a. Every meal   b. Every day   c. Every week
    d. Others _____

24. How many hours do you sleep every night?
    a. Less than 6 hours   b. 6-8 hours   c. Over 8 hours

25. I like to eat high-fat foods such as beef, pork, and cheese and so on.
    a. Often   b. Sometimes   c. Never

26. I like soy food.
    a. Often   b. Sometimes   c. Never

27. I feel stressful in my daily life.
    a. Often   b. Sometimes   c. Never

28. I am afraid of breast cancer.
    a. Often   b. Sometimes   c. Never

29. I do physical exercises.
    a. Often   b. Sometimes   c. Never

30. I got counseling about breast cancer before.
    a. Often   b. Sometimes   c. Never

APPENDIX 2/1

Rintasyöpätietoisuus

1. Ikä: ☐ 25-34 ☐ 35-44 ☐ 45-55

2. Pituus: _____cm Paino: _____kg

3. Mikä on teidän koulutuksenne?
a. Keskikoulu   b. Lukio tai AMK
c. Kandidaatti   d. Maisterintutkinto tai PhD

4. Olen kuullut rintasyövästä?
a. Kyllä (Jatka kysymykseen 5)   b. En ole (Katso kys. 6)

5. Jos kyllä, mistä tiedätte rintasyövästä?
a. Kirjoista ja lehdistä   b. Median kautta (televisio, radio, Internet)
c. Ystäviltä   d. Muut _____

6. Milloin olivat ensimmäiset kuukautiset?
a. Ennen 12 vuotta   b. 12-17vuotta   c. 17 vuotta tai vanhempi

7. Minulla on kuukautiset.
a. Kyllä   b. Ei ole enää (Jatka kys. 8)

8. Onko teidän painonne noussut vaihdevuosien jälkeen?
a.   <5 kg   b. 5-10 kg   c. 10-20 kg   d. Yli 20 kg

9. Kuinka monta raskautta teillä on ollut?
a. 0 (Katso kys. 11)   b. 1-2   c. 3-4   d. Yli 4

10. Kuinka vanha olitte, kun ensimmäisen kerran tulitte raskaaksi?
a.   < 18v   b. 18-25v   c. 26-30v   d. 31-35v   e. Yli 35v

11. Onko teidän perheenjäsenillä diagnosoitu rintasyöpä?
a.   Äitini tai siskoni   b. Serkut tai tädit   c. Ei kenelläkään

12. Onko teillä ollut muutoksia rinnoissanne?
a. Ihomuutoksia   b. Haavat   c. Kyhmy   d. Muut _____

13. Tarkkailetteko rintojanne kuukausittain?
a. Joka kuukausi   b. Vähintään kerran 3 kuukaudessa   c. En tee
säännöllistä rintojen omatarkkailua

14. Jos ette tee rintojen omatarkkailua, miksi ette?
a. En tiedä, miksi minun pitäisi tehdä se   b. Tiedä miten, mutta minulla ei ole
aikaa.   c. Haluan tehdä sen, mutta en tiedä, miten se tehdään.

15. Kuinka säännöllisesti käytte mammografiatarkastuksessa?
a. Kerran vuodessa   b. Kerran 2 vuodessa   c. Kerran 5 vuodessa
d. En ole koskaan käynyt mammografiassa

16. Jos ette käy säännöllisesti mammografiatarkastuksessa, miksi ette?
a. Minulla ei ole tarpeeksi tietoa siitä   b. Tiedän siitä, mutta minulla
ei ole aikaa.   c. Se ei ole minun ikäryhmälleni tarkoitettu

17. Käytän suun kautta otettavia ehkäisypillereitä
a. Usein   b. Joskus   c. En käytä (Katso kys. 19)

18. Kuinka kauan olette käyttäneet ehkäisypillereitä?
a. 1-2 vuotta   b. 3-4 vuotta   c. Yli 5 vuotta

19. Tupakoin
a. Usein   b. Joskus   c. En tupakoi (Katso kys. 21)

20. Kuinka monta savuketta tupakoitte päivässä?
a. 1-5   b. 5-10   c. Yli 10

21. Juon alkoholia.
a. Usein   b. Joskus   c. En juo (Katso kys. 23)

22. Kuinka paljon juotte kerralla?
a. 1-2 juomaa   b. 2-5 juomaa   c. Yli 5 juomaa

23. Syön vihanneksia ja hedelmiä
a. Joka ateriassa   b. Joka päivä   c. Joka viikko
d. Muut _____

24. Kuinka monta tuntia nukutte joka ilta?
a. Alle 6 tuntia   b. 6-8 tuntia   c. Yli 8 tuntia

25. Käytän eläinrasvoja
a. Usein   b. Joskus   c. En koskaan

26. Syön soijaruokaa.
a. Usein   b. Joskus   c. En koskaan

27. Koen stressiä jokapäiväisessä elämässä.
a. Usein   b. Joskus   c. En koe

28. Pelkään rintasyöpää
a. Usein   b. Joskus   c. En pelkää

29. Harrastan liikuntaa
a. Usein   b. Joskus   c. En koskaan

30. Oletteko saanut neuvontaa rintasyövästä aikaisemmin
a. Usein   b. Joskus   c. En koskaan

Kiitos paljon vastauksistanne!

乳腺癌的认知

1. 年龄：□25-34 □35-44 □45-55

2. 身高：_____cm 重量：_____kg

3. 你的教育背景是什么？

a.中学　　b.高中学校或技校　　c.学士　　d.硕士或博士学位

4. 我听说过乳腺癌？

a.听说过（请继续5题）　　　b.没有听说过（请直接回答第6题）

5. 你是怎么知道乳癌？

a.书籍和杂志　　　b.媒体（电视，电台，互联网）　　　c. 朋友

d.其他_____

6. 月经初潮的年龄是几岁？

a.12岁前　　　b.12-17岁　　　c.17岁后

7. 我没有绝经。

a.是　　　　b.不是（请直接回答第8题）

8. 绝经后你有没有体重上的增加？

a.5 公斤以下　　b.5-10 公斤　　c.10-20 公斤　　d.超过 20 公斤

9. 你曾经怀孕过多少次？

a.0（请直接回答第 11 题）　　b.1-2 次　　c.3-4 次　　d.超过 4 次

10. 初次怀孕的时候你几岁？

a.18 岁以下　　b.18-25 岁　　c.26-30 岁　　d.31-35 岁　　e.35 岁以上

11. 你有没有家人罹患乳腺癌症？

a.我的母亲或我的姐姐　　　b.我的堂兄弟或阿姨　　　c.无

12. 你的乳房有无任何变化？

a.皮肤的变化　　b.伤口　　c.肿块　　d.其他＿＿＿＿＿＿＿＿

13. 我每个月都做乳房自我检查。

a.每个月都做(直接回答 15 题)　　b.至少 3 个月一次（直接回答 15 题）　　c.我不做定期自我检查

14. 如果你不这样做乳房自我检查，为什么不呢？

a. 我不知道我为什么要这么做　　b.我知道怎么做,但我没有时　　c.我想这样做,但我不知道怎么做

15. 你多久做一次乳房 X 光检查？

a.每年一次 (直接回答 17 题)　　b.2 年一次（直接回答 17 题）　　c.5 年一次（直接回答 17 题）　　d.我从来没有到过乳房 X 光检查

16. 如果你没有做过乳房 X 光检查，为什么不呢？

a.我没有足够的信息　　b.我知道这个检查，但我没有时间做　　c.我还未到这个年龄段

17. 我使用口服避孕药物。

a.通常　　　　　　b.有时　　　　　　c.从来没有（请直接回答 19 题）

18. 你使用口服避孕药有多长时间？

a.1-2 年　　　　b.3-4 年　　　　c.5 年以上

19. 我抽烟。

a.通常　　　　　　b.有时　　　　　　c.从来没有（请直接回答 21 题）

20. 你一天抽多少烟？

a.1-5 根　　　　b.5-10 根　　　　c.超过 10 根

21. 我喝酒。

a.通常　　　　b.有时　　　　c.从来没有（请直接回答 23 题）

22. 你喝多少一次？

a.1-2 杯　　　　b.2-5 杯　　　　c.超过 5 杯

23. 我喜欢蔬菜和水果。

a.每一餐都吃　　　b.每天吃一次　　　c.每周吃一次　　　d.其他_____

24. 你每晚睡眠时间有多久？

a.少于 6 小时　　　　b. 6-8 小时　　　　c.8 小时以上

25. 我喜欢吃动物脂肪。

a.通常　　　　b.有时　　　　c.从来没有

26. 我喜欢大豆类食品。

a.通常　　　　b.有时　　　　c.从来没有

27. 你有没有得到电离辐射？

a.通常　　　　b.有时　　　　c.从来没有

28. 我觉得生活压力很大。

a.通常　　　　b.有时　　　　c.从来没有

29. 我害怕乳腺癌。

a.通常　　　　b.有时　　　　c.从来没有

30. 我做体育锻炼。

a.通常　　　　b.有时　　　　c.从来没有
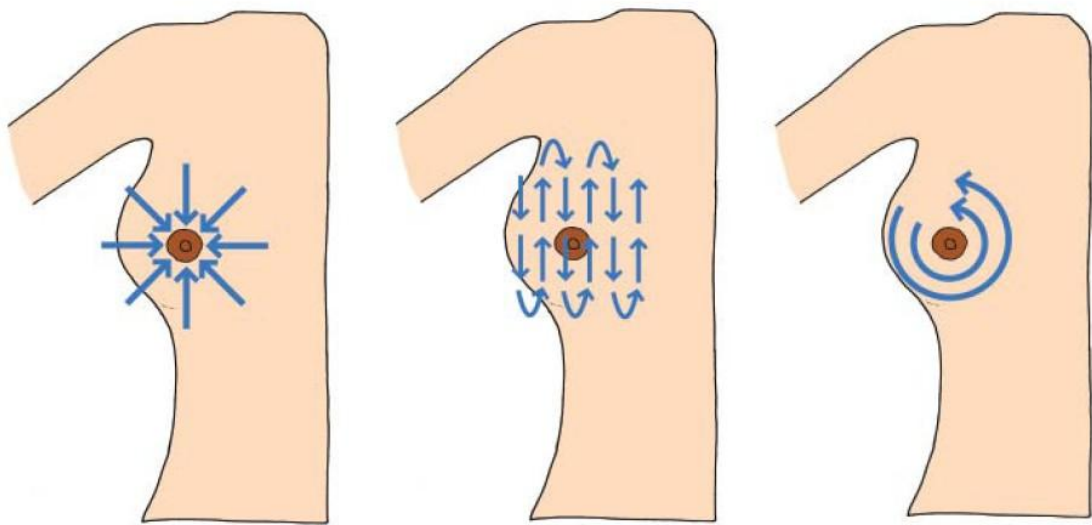
31. 我以前有做过关于乳腺癌的健康咨询。

a.通常　　　　b.有时　　　　c.从来没有

FIGURE 1. Breast self-examination palpation techniques.