

CHAPTER II



REVIEW LITERATURE

This study is comprised of 4 literatures as follows.

- 2.1 PRECEDE Framework
- 2.2 Health Belief Model
- 2.3 Carcinoma of the Cervix
- 2.4 The Related Researches

2.1 PRECEDE Framework

PRECEDE Framework is a short form of Predisposing, Reinforcing, Enabling, and Causes in Educational Diagnosis and Evaluation. It is the process of analysis in planning of the hygienic job that was developed by Lawrence W. Green with the idea of human behaviors caused by multiple factors. That's why we need to analyze the factors that affect each behavior. The results bring out the data for planning for the process in changing of behavior. There are various steps in analysis. However this study will mention only the Educational Diagnosis analysis of various factors that affect health behaviors, both of the intrinsic or extrinsic individual factors and apply the data to the hygienic planning. The concerning factors are divided into 3 groups, which are predisposing factors, enabling factors, and reinforcing factors.

Predisposing factors is the basic factor that causes motivation in personal behaviors. On the other hand, it is the personal preference obtained from educational experiences. The individual preference can both support and inhibit behavior showing. It is the combination of factors that cause motivation such as knowledge, attitude, belief, value, and perception, including the socio-economic status, age, gender, and level of education.

- **Knowledge** is the crucial predisposing factor that points out behaviors. However, gaining of knowledge does not always change behavior, although knowledge relates to behavior and is essential for behavior performing. Knowledge alone cannot cause the change of health behavior. Other co-factors are also needed.
- **Perception** is the thoughtfulness, together with the experiences. Perception is the variance in psychosocial, and is believed to be the stimulator of personal health behavior.

Enabling factors mean the vital resources in performing of personal behavior, community behavior, including the characters that help in personal performing of behavior. The efficiency in use of the resources depends upon the price, distance, time, the availability, and accessibility.

Reinforcing factors mean the result or expected result obtained from other people due to his personal act. that could be in the form of rewards, objections, admiration, acceptance, and punishment, or they can be a rule that control the person in obedience. These are what person gets from other people close to him like relatives,

friends, doctors, and immediate superior. Their influences are different in personal behaviors and situations and may support or inhibit the performing of behavior.

Behavior or personal acts are the result of above mentioned three factors. Therefore, behavior-changing plans should be based on all of them. (Green and Kreuter, 1991)

2.2 Health Belief Model (HBM)

The HBM was developed in the early 1950s by a group of social psychologists in the United States Public Health Service in order to understand the failure of people to engage in preventive activities (Rosenstock, 1974). According to Rosenstock, HBM is based on two core concepts. Firstly, the individual's psychological "readiness to take action" related to any preventive health behaviors, which is determined by both the person's perceived "susceptibility" to a particular condition and the "severity" of the consequences of contracting that condition. Secondly the individual's evaluation of the recommended health behavior in terms of estimating the potential "benefits" weighed against psychological or other "barriers" or "costs" in order to reduce perceived susceptibility and severity (i.e., a cost-benefit analysis of an action). An external (i.e., the campaigns, advice from friends and officer, and printed matters) or internal stimulus may act as a "cue to action" to trigger the appropriate behavior. In practicing a preventive behavior, perceived susceptibility to a disease and perceived benefits of and barriers to adopting a preventive behavior play crucial roles more so than the perceived severity of that disease. The idea can be presented in the following chart (Figure 2)

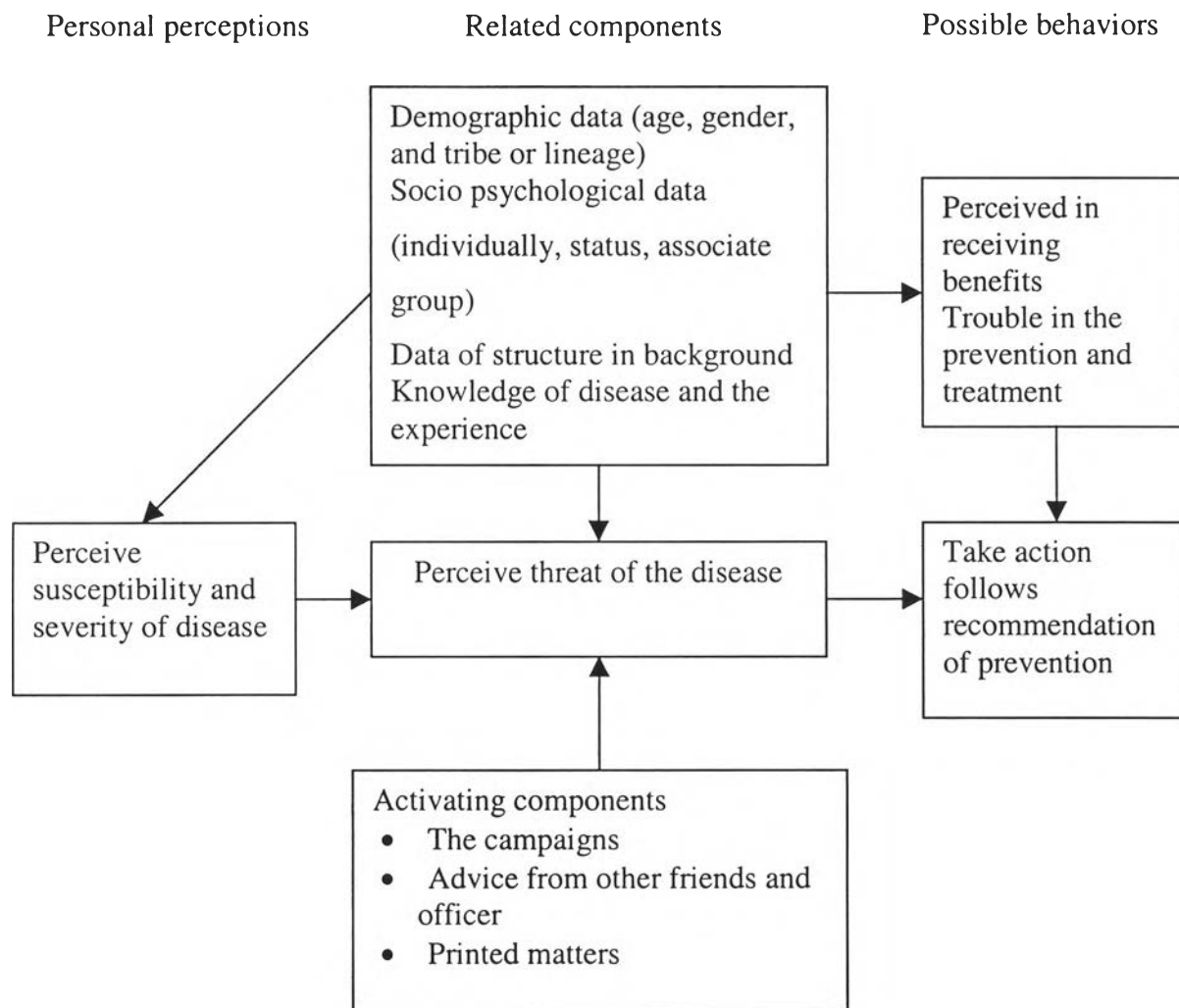


Figure 2: Health Belief Model

Source: Rosenstock, 1974:334

2.3 Carcinoma of the Cervix

Etiology, Incidence

In the first half of the 20th century, invasive cervical cancer was the most common cancer of the female reproductive tract in the United States (Shingleton and Thompson, 1997). At present, actual etiology of cervical cancer is still uncertain. The

study reports on the occurrence and various related causes of cervical cancer are summarized as follows;

1. **Sexual intercourse:** various reports indicate that sexual relationship is related to cervical cancer. This disease may also be infected by sexual intercourse, similar to other sexually transmitted diseases (STD). Epidemiologic studies suggest a number of individual risks for carcinoma of the cervix, of which the most consistent are early sexual activity, multiple sex partners, and human papillomavirus infection (Berman and Cohen, 1997). Other factors associated with increase risk include prostitutes, prison inmates, poor personal hygiene, and multiple sexual partners (Shingleton and Thompson, 1997). Low incidence rate is seen in the virgin women or nuns. Besides, various studies state that number of children and frequency of sexual intercourse are not related to cervical cancer.

2. **Infection of suspected disease to be the cause of cervical cancer.**

2.1 **Herpes Simplex Virus type 2 (HSV-2);** there are a lot of reports mentioning that HSV is the most likely cause of cervical cancer by sexual transmission.

- Retrospective study in woman serum who had cervical cancer, found that there has been the high occurrence of immunity to HSV – 2 (complement fixing antibody to HSV-2 associated antigen) in comparison to normal case with the same age.
- HSV-2 is infected by sexual intercourse

- In tissue culture, it is found that HSV-2 can transform the embryonic cell to the cancer cell. However, there is no report in firming abstract that HSV-2 is the cause of cervical cancer.

2.2 Human Papilloma Virus (HPV)

Another kind of virus that might be the cause of cervical intraepithelial neoplasia (CIN) and cervical cancer is the HPV.

HPV is the virus that causes skin warts and condyloma acuminata of genital organ and it can be infected by sexual intercourse. Pathological diagnosis in 640 cases with CIN and cervical cancer found that half of them are HPV infected. The development of HPV diagnosis nowadays had become more accurate with DNA hybridization technique. The study of Pitkin (1992) determined the prevalence of HPV virus infection in normal woman (using 731 cervical biopsies and 8196 cervical swabs) and provided explanations for many of the long-recognized characteristics of cervical cancer (Pitkin, 1997).

2.3 Syphilis

Treponema pallidum was thought to be the cause of cervical cancer, as high occurrence of syphilis was found in cervical cancer cases in comparison to women who were not infected. However, it was later found to be false.

2.4 Trichomoniasis

Trichomoniasis vaginalis (TV) can cause the inflammation of vagina and cervix, and probably cell variations are found that look like cancer cells. The reports

found TV so often in cervical cancer cases, so its relationship is to be suspected. The concurrence of TV and cervical cancer can be possible as both are caused through sexual intercourse.

3. Sperm and the cervical cancer

The protein composition in head of sperm probably takes part in stimulation of the inflamed cervical epithelial cells and change them to CIN or cervical cancer.

4. Circumcision

According to the reports, cervical cancer is rarely found among Jews and Muslims. This suggests that smegma, or poor hygiene of genital organ may cause cervical cancer. However, recent study has shown that there is no confirmation in the relationship of cervical cancer and circumcision.

5. Socio-economic Status in couple of marriage

Environment and standard of living are markedly related, as we found the occurrence of cervical cancer among poor people mainly in developing countries. Statistics in Thailand are still indefinite in number since there has been no tumor registry center yet. In 1980, the National Institute of Cancer classified the most frequent cancers found in Thai women as follows

1. Cervical cancer
2. Breast cancer
3. Oral cancer
4. Liver cancer
5. Ovary cancer

Clinical features

The most common disease found in women 40 to 45 years of age (mean age 45 years) is cervical cancer. The disease is hardly found in women under 20 years old.

The symptoms of cervical cancer depend more or less on the stage of cancer. It usually does not have symptoms in early stage. However, symptom may be present with vaginal bleeding after sexual intercourse, which may not be observed. Invasive cervical cancer is more likely to cause such symptoms as abnormal vaginal bleeding or severe bleeding during the period of menstruation or bloody leucorrhoea. The patient may complain of menorrhagia and metrorrhagia. More severe symptoms can occur with chronic bleeding per vagina, and the patient may present with anemia. Edema of the lower extremities likewise indicates tumor obstruction of lymphatic drainage and blood vessels. When the disease is advanced, leucorrhoea with blood and malodorous discharge will be presented according to an associated infection. In the late states, patient complains of back and legs pain or if metastasis to surrounded organs such as urinary bladder and rectum, the patient may have oligouria, anuria, polyuria, cachexia, and usually die of uremia.

In advanced stage of cervical cancer, there is variety of appearances depending on its growth and spreading. The tumor that are found with naked eyes can be shown in four types.

1. Exophytic lesion, the most common type frequently found in a mass of polypus on the cervix (Exocervix) like cauliflower. It grows rapidly to conceal the cervix. This type is easy to bleed and infect.

2. Infiltrative lesion, the visual inspection cannot definitely specify, as it usually does not present any visible lesion. However, a tumor that develops beneath the mucosa of the exocervix and infiltrates the cervical stroma usually causes cervical enlargement (barrel-shaped). The surface of the cervix consistency to palpation is firm and nodular. In case of a large mass, it is hard to tell whether it has spread to the parametrium. This type of cancer is less in bleeding and leucorrhoea, unless in the late stage.
3. Ulcerative lesion, the cervical lesion feels firm at the edge. When the depth of tumor invasion develops, the lesion can extend into the fornix and shows a deep hollow. The cervical fresh tissue is usually infected with necrotic tissue covering the base of the wound. Either bleeding or leucorrhoea is found with excessive foul-smell.
4. Superficial papillary lesion (Verrucous) is very rare type. It looks like condyloma and usually spread to the skin, but does not extend deeply to the cervical tissue.

Diagnosis

The Pap smear technique is useful in screening of cervical cancer either on pre cancerous stage (CIN) or the invasive stage. However, a single test can be of 20 % error. In a suspicion of cervix lesion, the biopsy should be performed. In case of visible lesion of cervix, biopsy can be performed without problem. However, abnormal Pap smear, but visible normal cervix, needs to use Lugol's solution or colposcope with biopsy. Endocervical curettage (ECC) is needed in some cases to confirm the diagnosis.

In the case that biopsy results are CIN or CIS and cannot exclude the invasive stage or the lesion is in the endocervix, there will probably be a need for cervical conization to ensure more reliable result. Biopsy pathology is considered as particularly effective identification of the disease before giving treatment, instead of Pap smear.

Treatment of cervical cancer

Current treatments for cervical cancer are as follows:

1. Surgical treatment in some cases of stage I and II
2. Radiotherapy that can be applied to all stages of cancer, but expensive equipments are needed.
3. Chemotherapy is usually effective in case of advanced stage, or recurrence, and when no other methods can be used.
4. Combination of above methods, such as surgery with radiotherapy, and later chemotherapy with radiotherapy. These are used in cases of extensive invasive stage.

Pap smear technique in early stage of cervical cancer screening

Pap smear is the prominence in cervical cancer screening. The examination of first stage of cervical cancer called Pap smear, named in honor to Dr. George N. Papanicolaou, an expert physician on zoology who graduated from Athens in 1904. He moved to New York in 1913 as an anatomist. He performed the first vagina smear in 1917, and later submitted the first report of cancer of cervix to the Conference on "New cancer diagnosis", about the cancer cells found in vaginal smears of patients of the Women Hospital in New York. Since then, this technique was widely used.

The principle of Pap smear is based on alteration of cell in effect of estrogen and progesterone on the area of vagina and cervical epithelium in cycle of menstruation, and the menopausal women. Study of epithelium cells scraped from antero-lateral fornix in non-infected vagina is done. The result that interprets of clean vagina shall be better than in the case of infection and much of leucorrhoea. The Pap smear screening in early stage cancer, before the invasion of cervical cancer, could be of greatest value in life saving, and also for decreasing the loss of family income, and of country budget and human resources which are the principal power of country.

The frequently asked question is when to start the Pap smear. The answer should be at the time of first sexual intercourse, even in young adults. Women nowadays are high risk for infection from sexual intercourse; and therefore the Pap smear should begin as early as possible for abnormality detection. How often should it be done? For women in USA it is once a year screening, while for women in Spain it is 2-3 times a year. The screening twice a year for Thai women is appropriate. This may decrease the late stage cancer and increase the early stage detection. Regular screening test can decrease cervical cancer. Women at risk for cervical cancer, or with abnormal result in the last screening, need screening more often. The Pap smear together with microanatomy technique can be more reliable in the result.

2.4 The Related Researches

The review of researches regarding related factors affecting the chance of coming or not coming to the cervical cancer screening are summarized as follows.

1. Factors in population

Age is one factor affecting the chance of having cervical cancer screening, and also affecting the period of illness. The study of Sawaddivudhpong (1997) found that women at 35 to 45 years of age are the largest group who come to have their cervical cancer screened. The smaller group is the 25 to 34 years, and the lowest in number are group of older than 45 years and younger than 25 years. This result is the same as the study of Noppadolratkul (1996). Women who never have screening are group of less than 25 years old. However, it is different from study of Seanawong (1992), which found that age is not a factor that is related to the chance of coming to have cervical cancer screening.

Marital status. Sawadvutthipong et al. (1997) found that women who live together with their husband have more frequent screenings than the group of singles, widows, divorcees, and separated ones. This might be due to the encouragement of their husband.

Education and the delivery. Study of Nopparatkul (1996) found that women who never have cervical cancer screening are usually the uneducated group, and group who have no child. The researcher needs to know weather the level of education, and number of children affect the chance of coming to have cervical cancer screening.

2. Factor in knowledge and perception

Knowledge and perception are the factors that affect the receiving of the cervical cancer screening. Study of Seanawong (1992) found that giving more hygienic education causes the change to right behavior. Women in perception of the risk of disease, the severity, and the advantage in receiving of the screening service, are more willing to receive cervical cancer screening. This is the same as study of Tairsombat (1999), in that giving more hygienic education to the target group can generate more knowledge. The three perceptions mentioned above can increase the number who receive cervical cancer screening.

3. Factor in communication and perception to the news

Nopparatkul (1996) found that public relation on radio could be more accessible to target group than television. Tairsombat (1999) indicated that most of the women receive the information regarding cervical cancer screening from the doctors, nurses, health care staff, neighbors, and volunteers.

4 Reinforcing factor

It was found that the most effective reinforcing factor to encourage the women to have a cervical cancer screening was the suggestions by medical staff (Latthimon, 1995); and the friends' motivation and other effective media (Tairsombat, 1999). A free of charge service and privilege of instant service can increase the number of the screening visits. Seanawong (1992) found that the encouragement by husband is effective and also increases the number.

5. The reason for not coming to have cervical screening

The study of Prompak (2001) found that the causes of not coming to have their cervical screening are the embarrassment, scare of the abnormal result, nothing abnormal at that time, the expensive cost, and inappropriate manner of staffs. This result is the same as Tairsombat (1999), and Latthimon (1995).

6. The reason for coming to have cervical cancer screening.

Study of Prompak (2001) found that the reasons for coming to have cervical cancer screening were the abnormality conditions, suggestions by staffs, and friends' persuasion. Post delivery annual health check up (Latthimon, 1995), appointment of post delivery and the staff's suggestion (Tairsombat, 1999) were other reasons for having cervical cancer screening.

Theoretical review and related researches of factors can be summarized as follows.

1. Predisposing factor

- 1.1 Characteristics of population group such as age, marital status, religion, education, occupation, income, age of marriage, and number of child.
- 1.2 Knowledge regarding cervical cancer
- 1.3 Three perceptions
 - ◆ Perception of the risk of cervical cancer
 - ◆ Perception of the severity of cervical cancer
 - ◆ Perception of the advantage of cervical cancer screening and also its obstacle.

2. Enabling Factor

2.1 Place of service and the providing of service, accessible to the service, convenience, distance, time, and the expense.

2.2 Experience and behavior in previous cervical cancer screening

3. Reinforcing factor

Factors regarding the getting of the news or information with respect to cervical cancer, and the motivation and support by family members or friends and others.