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The Association Between Social Influences
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Laura L. Frisch

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**THE ASSOCIATION BETWEEN SOCIAL INFLUENCES (CUES TO
ACTION) AND PAP SMEAR SCREENING FREQUENCY RATES**

By

Laura L. Frisch

A THESIS

**Submitted to
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ABSTRACT

THE ASSOCIATION BETWEEN SOCIAL INFLUENCES (CUES TO ACTION) AND PAP SMEAR SCREENING FREQUENCY RATES

By

Laura L. Frisch

Cervical cancer occurs at a high rate among Native American women in the United States. Few published data have concurred why Native American women do not seek recommended preventive Pap smear screening exams to identify cancer in early stages, and decrease mortality rates in this population. Social influences, in the role of preventive health behavior may play an important role in offering rationale.

Chart audits and structured interviews were used of those women who complied with the guidelines of at least one Pap in the last three years, and those women who did not in a select population of Sault Ste. Marie Tribe of Chippewa Indian women, aged 40 years and older (N=30). Using crosstabs, chi-square and Fisher's exact, this study found no association between Pap smear screening frequency rates, and social influence as a cue to action. However, findings did show the women in this study valued the opinion and advice of healthcare professionals, and that Pap smears exams were being discussed. These findings suggest the need for further research, and culturally sensitive interventions by the APN to move social influence to the cue to action phase.

To my husband Rick, and my children, Killian and Connor,
for their love and patience over the past three years.

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INTRODUCTION

From a perspective of cancer control, cervical cancer, for which there is a proven effective screening technique, is among the leading public health challenges. For 1996, the American Cancer Society predicted 15,700 new cases of cervical cancer in this country and 4,900 deaths from cervical cancer (American Cancer Society, 1996).

The natural history of cervical cancer enables successful screening to occur because it is a slow growing disease with a lengthy natural growth period, commonly taking anywhere from eight to twenty years to fully develop (Peters, Duncan, Skultin, & Henderson, 1988). Cervical cancer often exhibits no apparent signs and symptoms for an extended period of time and first manifests clinically as cervical intraepithelial neoplasia (CIN). CIN is a condition in which a woman's normal cervical epithelial cells, the cells lining the outer layer of the cervix, are found to have been gradually replaced by atypical cells (Gray & Heuther, 1990). Unlike normal cells, atypical cells are poorly differentiated, proliferate more rapidly than normal cells, and have the potential to become increasingly malignant as they multiply (Rubin & Lauver, 1990). These cells are found via uterine biopsy.

CIN progresses along a continuum and is classified according to three categories: CIN I, or mild dysplasia, is characterized by the appearance of a few cervical cells exhibiting atypical changes. CIN II, or moderate dysplasia, occurs when approximately half the endocervical cells show abnormal changes. CIN III encompasses severe dysplasia and carcinoma in-situ. When CIN III develops the majority of cells exhibit atypical changes. Carcinoma in-situ occurs once the majority of the atypical cervical epithelial cells have become malignant on a microscopic level but have not yet penetrated the deeper cell layers of the cervix (Gray & Heuther, 1990; Rubin & Lauver, 1990).

In the late 1980's, the lay press began to raise issues about Pap smears and their rate of failure to detect cervical cancer. In response to a Congressional mandate, the National Cancer Institute held a conference in Bethesda, MD, in 1988, that resulted in the Bethesda System. This system was further refined in 1991. The Bethesda system, based on pap smear results, reduced the classification of preinvasive cervical lesions to two: low-grade squamous intra epithelial lesions (LSIL) and high-grade squamous intra epithelial lesions (HSIL). LSIL includes abnormalities labeled as mild dysplasias, or CIN I, and HSIL include severe dysplasia, and carcinoma in situ, or CIN II and CIN III. Both the CIN and Bethesda System are currently being used in primary care (Richart, Jones, & Reed, 1993).

If cervical cancer is detected during the CIN III phase (HSIL), prior to the deeper layers of cervical tissue being invaded by malignant cells, the chances of surviving this disease are excellent, close to 100% (Mandelblatt, 1989). However, after the carcinoma in-situ stage the chances of surviving cervical cancer for five years or more substantially decreases. When the malignant cells have invaded the deeper tissue of the cervix and the upper portion of the vagina the long term survival rate drops to approximately 80%. These chances are further reduced, to roughly 30% if the cancer spreads as far as the lower vagina or pelvic wall. If the cancer metastasises to the bladder, kidneys, or rectum; and also perhaps to the other distant organs, the chances of survival over a five year period are as low as 15% (Gray & Heuther, 1990; Mandelblatt, 1989).

The Papanicolaou (Pap) smear is the most reliable and accurate screening method for detection of cervical cancer in women. This simple and inexpensive test was named for George Papanicolaou, a Greek-American medical doctor and scientist, who worked at Cornell Medical School in the early 1940s. Papanicolaou discovered that growth patterns of cervical cells could be evaluated by smearing and staining them on a glass slide. Regular Pap smear screening has led to a decrease in cancer mortality among women (Baldwin, & Goodwin, 1985). The Pap test, unlike other screening tests, is used principally to diagnose preinvasive lesions that,

when treated, will result in a decrease in the incidence of and deaths from invasive cancer (ACOG, 1989).

Many factors affect the extent to which women receive routine Pap smear screening. The following categories have been identified in literature: 1) demographic factors such as advancing age, and being Native American; 2) health care system factors such as provider recommendations in relation to pap smear screening; and 3) psychosocial factors or health beliefs, that is, the perceptions, attitudes, behaviors and social influences toward Pap smear screening (Celentano, 1988; Celentano, Klassen, Weisman, & Rosenshein, 1988; Elkind, Haran, Eardley, & Spencer, 1988; Harlan, Bernstein, & Kessler, 1991; Peters, Bear, & Duncan, 1989; Teitelbaum, Weisman, Klassen, & Celentano, 1988).

Cervical cancer is not preventable, however, Becker, Wheeler, McPherson, Kratochvil, Parmenter, North, and Miller (1993) suggest that cervical papillomavirus infection and current cigarette smoking were associated with dysplasia. Whether preventable or not, regular screening with the Pap smear remains the most effective way of eliminating morbidity and reducing the mortality of this disease. Therefore, if the prevalence of this disease is to be reduced it is of the utmost importance to target those women who do not receive regular Pap smear screening (Fleishman, 1993).

Although Pap smears have been available at no cost to the Alaska and American Indian Native population for many

years, current mortality rates from cervical cancer still exceed by several fold those of the U.S. populations (Lanier, 1993). The average incidence of cervical cancer among Native American women is 20.5/100,000 compared to 8.6/100,000 for United States all races (National Institute of Health, 1993). It has been found that, as a result of less frequent screening, older Native American women are typically diagnosed with cervical cancer at a more advanced stage of disease, usually already invasive, making successful long-term recovery less likely (Blesh & Prohaska, 1991). The 5-year relative survival for cancer of Native Americans is 35.2%, which is the poorest survival from cancer of any other population group (e.g., 50.3% for whites) (Baquet, 1995).

There are a number of variables that affect screening frequency of Native American women for cervical cancer. Native women who have not had a recent Pap smear are most likely to be elderly, rural, and living below the poverty line. Added to this, many health care givers, professionals and scientists are not aware cervical cancer is a major health problem for this race (Harlan, Bernstein, & Kellser, 1991). Other reasons for decreased cervical cancer screening in these women have been the subject of many research investigations. Knowledge of cervical cancer and the Pap exam, barriers to screening, perceptions of the threat of cervical cancer and the susceptibility of getting cervical cancer have all been, or are currently being,

investigated. Little information is available on why Native American women, especially older women, do not receive recommended Pap smear screening.

It is clear that health care providers have a significant influence on the success of screening efforts by encouraging patients to be screened routinely, explaining the frequency guidelines for screening, and following up with screening results and further scheduling (Bower, 1993).

Study Relevance

The results of this investigation have the potential to contribute to the nursing profession in three ways. First, information from this study will expand theoretical knowledge on Pap smear screening frequency rates of a group of Native American women, aged 40 years and older residing in the Eastern Upper Peninsula of Michigan. Second, it will provide much needed information on the importance of social influences of Native American women, aged 40 years and older, and Pap smear frequency rates. Third, because there is no documented data on Chippewa Indian women and cervical cancer screening, this project takes on even greater importance. The results of this project and any future studies will offer valuable information to health care providers as to why women are not seeking cervical cancer screening.

Interventions will be implemented into the health care system by the Advanced Practice Nurse to overcome these

issues. Future research can be done to evaluate the effectiveness of these strategies.

A primary care setting is ideal for health promotion and disease prevention, and cervical cancer is no exception. It is likely that Pap smear screening frequencies differ individually for each older Native American. This will require differing management strategies. By incorporating health belief concepts into every woman's health screening, individual perceptions, modifying factors and the likelihood of action can be assured. In the role of educator, clinician and role model, the Advanced Practice Nurse (APN) can plan each older Native American woman's Pap smear screening frequency with mutual agreement. An in-depth role relationship between the APN and Pap smear screening frequency rates of older Native women will be discussed in a later section.

Statement of the Problem

Advancing age and ethnicity of Native Americans are considered risk factors for many kinds of cancers, and cervical cancer is no exception. Native American women of advancing age do not receive Pap smears as frequently as do younger women and therefore constitute a high risk group for cervical cancer due to both advancing age and under-screening (Celentano, 1988; Hayward, Shapiro, Freeman, & Corey, 1988). Extra effort is warranted to reach older women who have not been screened. Overall 25% of the total number of invasive cervical cancers occur in Native American

women older than 65, and 40-50% of all Native women who die from cervical cancer are over 65 years of age (National Cancer Institute, 1990). In some areas, as many as 75% of Native American women over 65 have not had a Pap smear within the previous 5 years (Mandelblatt, Gopaul, & Wistreich, 1986). At this time, the Bemidji area has a cervical cancer rate of 7.0 as compared to the U.S. rate of 3.3. According to the National Center for Health Statistics, 1977-1983, Native American cervical cancer mortality rate was 5.5 as compared the Caucasian rate of 3.2. SEER incidence of cervical cancer 1988-1992 identified Native American (New Mexico) with a rate of 20.5 as compared to White rates of 8.6. In 1983-87, a mortality rate from cervical cancer for Native American women in the Wisconsin, Michigan and Minnesota was 6.0/100,000, as compared to the Caucasian rate of 3.1/100,000 (National Institute of Health, 1994).

Because it appears that older Native American women are at increased risk for cervical cancer due to both increasing age and consistent under-screening, it has been hypothesized that social influences exert a primary influence over health screening behavior. The Sault Ste. Marie Tribe of Chippewa Indians Tribe consists of 26,700 Native Americans. Of this population, 1,388 are women, aged 40 and older. In 1991, the State of Michigan began participating a Federal Program, the Breast and Cervical Cancer Control Program, to increase the frequency of screening in women 40 years and older. It

was also created to increase the frequency of screening in minority women, who were not being currently screened for breast and cervical cancer. After five years, 16,432 women have been screened with only 6% of those women screened Native American (Michigan BCCCP Newsletter, 1996).

Research Question

What is the association between Native American women's social influence (cues to action) and Pap smear screening frequency rates?

Study Question

The aim of this study is to determine, using a correlational design, if social influences (cues to action) are significantly related to the Pap smear screening frequencies in a group of women, aged 40 and older. The study question presented: Is there an association between Native American women's social influence (cues to action) and the frequency rates of Pap smear exams?

Literature Review

The goal of this literature is to summarize articles on Pap smear screening and cervical cancer to identify research findings that are relevant to this study. The following studies will be reviewed: The relationship between advancing age and cervical cancer screening frequency, the effects of social influences and Pap smear screening, how the health care needs of Native American women of advancing age affect the frequency of Pap smear screening, how Native American research has used the components of the HBM in relation to

cervical cancer, and the use of the HBM as a conceptual framework for basis of study.

Advancing age and pap smear screening

Forty percent of women over 65 years in age report never having had a Pap smear. Yet the risk of invasive disease is 2.7 to 4 times higher in never-screened populations when they do come to evaluation (Wheat, Mandelblatt, & Kunitz, 1988). Documented data from the National Ambulatory Medical Care Survey (1989) identified a decline in gynecologic exam with increasing age, from 117 visits per 1,000 women at ages 25-44, to 74 visits per 1,000 at ages 45-64, and 22 per 1,000 65 years and older. In a review of data from several studies on the ways women decide to have Pap tests, Eardly, Elkind, Spencer, Hobbs, Pendelton & Haran (1985) found that the older a woman, the more likely the Pap test she received would result from her initiative. Holmes & Hearne (1981) studied the distribution of 30,991 cancers by disease-stage versus patient-age at the time of diagnosis. For cancer of the cervix, a highly significant positive relationship was found between advancing stage and advancing age ($p < 0.001$).

White, Begg, Fishman, Guthrie, and Fagan (1993) suggest there may be a cohort effect for cervical cancer screening behaviors. Although the usefulness of the Pap test was discovered in the 1930s, Pap testing did not become part of gynecologic care until 1960. As a consequence, many elderly women were not actively using gynecologic/obstetric services

when cervical cancer screening was initially promoted. There may, therefore, have been few opportunities for older women to learn of the importance of routine Pap testing.

Social influences and Pap smear screening

Physicians can be very influential in promoting screening in older women. The strength of the doctor's recommendation to have a Pap test was the most important factor in acceptance of screening in an elderly population attending an outpatient clinic in New York City. Weintraub, Violi, and Freedman, (1987) found that none of the elderly patients who were offered Pap testing by the physician or nurse practitioner in their primary care setting refused. Seventy-five percent of those scheduled to have the test done by a practitioner that they did not know also received Pap tests. In a national study conducted in 1991, 64% of women said that their physicians did not inform them about the need for a Pap smear and that they initiated their own appointments for the procedure. Twenty percent of women said their physicians did not explain what the test is for or what the results mean (Bower, 1993). Along with findings that visiting a doctor or having a usual source of care are predictors of a Pap testing, parallel observations emerge that women, especially older ones, who have not had Pap exam have had visits to a doctor that represented potential, but missed opportunities for screening. One half of cervical cancers in the United States occur in women who have never been screened and over 60% occur in women who have not had a

Pap smear in the last 5 years. Seventy-three percent of these unscreened women received ambulatory care and 16% were hospitalized during the 5-year period preceding the diagnosis of cervical cancer. It is estimated that adequate screening of our entire population would decrease the present death rate by two-thirds (Julian, 1993).

According to the 1985 NHIS, 75% of women without a Pap test in the past two years had seen a doctor within that same time period. In the study done by Hirst, Hill and Marks (1990), of the 466 women, 40 years and older, who had participated in the study 57% had not had a Pap test in the last 2 years, and were considered "at risk" for cervical cancer. Of that 57%, 50% agreed to a Pap test when encouraged and educated by their primary care providers. Harlan, Bernstein, and Kessler (1991) reported of women who had never had a Pap smear, nearly 80% reported contact with a medical practitioner in the past two years, while more than 90% reported a contact in the past five years.

Makuc, Freid, and Kleinman (1989) found that 82% of older women who had never had a Pap test have had recent contact with a physician. These visits must be seen as missed opportunities for screening.

In a study done by Bowman, Sanson-Fisher, Boyle, Pope and Redman (1995), 5,706 subjects at risk for cervical cancer who had not been adequately screened were identified by a random community survey and randomly allocated to one of the intervention groups or a control group. Six months

after intervention implementation, a follow up survey assessed subsequent screening attendance. Self report was validated by comparison with a national screening data base. The results showed a significantly greater proportion of women (36.9%) within the group receiving a provider letter reported screening at follow up ($p= 0.012$) as compared with a women's health clinic invitation, or a pamphlet sent to each woman to remind of follow up screening.

Native American women of advancing age and
Pap smear screening

Harlan, Burstein, and Kessler, (1991) found that Native American Indian women indicate they prefer to see a female provider. This is a problem as most Indian Health Services providers are male. Many Native American elders do not know that they need to continue having the Pap test, even after they have passed their childbearing age. In a study done by Welty, Zephier, Schweigman, Blake and Leonardson, (1993), it was identified that more accessible cervical cancer screening provided by female health care providers is needed to reduce preventable cancer deaths among Sioux women. Pap smear screening is an especially high priority since cervical cancer mortality is 4.4 times higher than U.S. rates, all races. This Sioux Cancer Study used 1,538 participants, of which 57% were women. A third of the women had not had a Pap smear in the last three years, and 4 percent of women said they never had a Pap smear. Only 19% of the women in this study had received a

Pap smear one year prior. It was identified by these researchers female providers and availability of screening at the nearest health facilities are key factors in successful screening programs.

In a study done by Hodge, Fredericks, and Rodriguez, (1996), the social learning theory, research data and focus groups were used to design a cervical cancer screening program. The project aims were to increase cancer prevention knowledge levels, to establish positive attitudes toward screening activities and to increase the proportion of women receiving cervical cancer screening at recommended intervals in Native American clinics. Focus group members placed a high value on cultural sensitivity in the patient-provider relationship. Showing respect, kindness, and understanding of Native American ways were identified as important features. The patient-provider encounter was also described as confounded by issues of communications problems and health care system barriers. Where on one hand the physician recommends and encourages Native women to return for recommended screening, the health care system creates barriers that hinder women from complying with the physician's orders. Lengthy delays between the screening and referrals for follow-up, staff turnover, and the inability to obtain timely clinic appointments contribute to noncompliance. Cultural differences between non-Native provider and Native American patient also contribute to communication problems. Modesty shown by Native American

women is often misunderstood or ignored by physicians. Whereas the non-Native physician's style is direct, many Native American women have an indirect style that may require more time than the physician is accustomed to during a medical appointment. This style difference is often misunderstood as an unwillingness to the Native American patient to participate in her own care, and the non-Native physician is perceived as too busy and uncaring to listen to the patient symptoms. In conclusion, changing health behavior practice in a population as unique as Native Americans has the potential to save lives and improve the health status of Native American women.

The National Cancer Institute's "Avoidable Mortality for Cancers in Native American Populations" Program was developed to identify key factors that contribute to avoidable mortality from specific cancers such as cervical cancer; develop and evaluate the effectiveness of community baseline interventions; and reduce cervical cancer mortality. The project focused on Native American communities. From this program, the Native American Women and Wellness Pap Tracking System was established as the standardized method of patient registry, recall and follow-up. Preliminary results of the baseline entries from the intervention sites suggest that at least 48-70% of the Native American clinic patients had not had a Pap test within two years across 4 sites (National Institute of Health, 1993).

Native Research using Health Belief Model Components

In the study done by Kaur, 1996, on the potential impact of cancer survivors on Native American cancer prevention and treatment, it was found that many Native American women did not believe they were susceptible to cervical cancer because they had associated it with the "white man's disease".

Michalek, Mahoney, Tome, Tenney, and Burhansstipanov (1995) found that tribal priority include cancer as high a threat, but prioritized alcohol and substance abuse, diabetes, and maternal and child health issues. Only AIDS rated lower than cancer in the perception of threat of illness. This perception of threat reflects a tribal commitment to those problems that exact the greatest toll on their youngest member, and not on the health issues of many of the elders.

Studies have been done identifying the need for increased knowledge of elder Native women in relation to cervical cancer. L. Burhansstipanov (1997) has done many studies in this arena with success i.e. culturally sensitive educational material on pap smear screening exams from the American Cancer Society, and the National Cancer Institute.

Many Native American researchers, including Linda Burhansstipanov, and Tom Welty, have investigated barriers to Pap smear screening of elder, Native American women. Those health beliefs identified as barriers are: cost; transportation; gender of provider (preference for women

providers); denial; lack of perceived susceptibility; lack of familial risk (i.e. if no one in my family had cervical cancer, I cannot get it); fatalistic attitude (can't do anything about it); lack of cultural sensitivity of providers; and lack of community medical services have been named most prevalent in studies. Although these barriers have been addressed by programs such as the Native Women's Wellness through Awareness, a great many elder Native women continue to go unscreened for cervical cancer.

Conceptual Framework

The purpose of this study is to test the association between the health belief variable, social influence (cues to action) as it relates to cervical cancer screening frequency. The variable used to study the psycho social aspects of Pap smear screening in women of advancing age was derived from the Health Belief Model (HBM). The HBM was chosen as the theoretical framework for this study because it is well accepted as a predictor of health-related behaviors in a variety of settings and populations (Janz & Becker, 1985). The HBM assists in identifying attitudes and beliefs for predicting adherence to a medical regimen. According to the HBM, psychosocial factors strongly influence health behavior. The HBM hypothesizes that health behavior is dependent on the occurrence of the following circumstance: the belief that following through on a particular health recommendation would be beneficial in reducing the perceived threat of an illness or condition

(Rosenstock, Strecher, & Becker, 1988; Janz & Becker, 1985). The HBM has been particularly successful in preventive health behaviors, which are defined as the actions taken to avoid illness or injury (Janz, & Becker, 1984; Nemcek, 1990).

Health Belief Model

Murray and McMillan (1993) found, using the HBM components, the most important predictor of attendance for cervical smears was lack of fear of the consequences of the investigation. Women who had a strong network of social support in the form of either a health counselor, a confiding relationship with their husband or boyfriend or a network of at least one close friend were more likely to go for a cervical smear (Calnan, 1985). There are two research studies that focus on the psychosocial aspects of Pap smear testing using the HBM as a conceptual framework. Hill et al. (1985) had a sample of 123 women over the age of 18 with a median age of 34. The independent variables derived from the HBM included the following: social influence of important others, attitude toward Pap smears, perceived barriers to screening, perceived benefits to screening, perceived seriousness of cervical cancer, perceived susceptibility to cancer, and health motivation, the degree to which women thought they would be screened for cervical cancer in the future. Hill et al. correlated their independent variables with the dependent variable future Pap smear behavior. Future Pap smear behavior was defined as

the intention of having a Pap smear in the next two years and was measured using the scores from two Likert scale items. The Henning and Knowles study (1990) had a slightly older sample which included 144 women whose mean age was 54. Henning and Knowles (1990) correlated the same independent and dependent variables as in the Hill et al. study (1985). Both studies utilized the same questionnaire and stated that the purpose of the study was to investigate health behavior in order to plan more effective health education programs. The two studies obtained similar results for four of the six health belief variables. Both investigations reported that attitude toward cervical cancer, perceived barriers to screening, perceived susceptibility, and health motivation significantly accounted for the intention to have a Pap smear in the future. In addition, Hill et al. (1985) found social influence was able to significantly predict the intention to be screened for cervical cancer in the future, whereas in the Henning and Knowles study the concept of social influence was not found to significantly affect future Pap smear behavior. Two explanations given by Henning and Knowles for the lack of significance of social influence were that, in general, older women have less social contact than younger women and the older women are less likely to discuss their personal concerns with others.

Calnan (1985), and Harlan, Burstein, and Kessler (1991) have done studies on the effects of social influence in relation to screening practices. No studies could be found

on the utilization of the HBM in relation to Pap smear screening practices, or the effects of social influence on Pap smear screening frequency rates.

This literature review attempts to show what research has been done in the area of Native American women, aged 40 years and older, using the HBM or the components of the HBM in relation to Pap smear screening frequency. Few studies have specifically examined the relationship between health beliefs and cervical cancer screening practices of older women and therefore one area of inquiry which is significantly lacking in the literature on cervical cancer is a detailed description of how psychosocial factors affect the Pap smear screening practices of older, Native American women. This implies a great need for more recent research on older women and cervical cancer screening. This finding further emphasized to this Principal Investigator the importance of this project, in order to obtain data on the Pap smear screening frequency rates of Native American women.

The HBM divides these seven concepts into three categories: individual perception, modifying factors and the likelihood of action. The first category, individual perception, contains the concepts perceived susceptibility and perceived seriousness.

The second category, modifying factors, contain the concept of social influence, and knowledge of the disease and preventative screening procedures. The remaining four

concepts, perceived benefits, perceived barriers, health motivation and self-efficacy make up the third category, the likelihood of action.

Prior to taking action, the HBM suggests that an individual must first perceive the benefits of the preventive actions, and then evaluate the perceived barriers or costs of the preventive action. The HBM's assumption is that individuals will not take action unless the course of action is believed to be beneficial in reducing the threat of disease, and the perceived barriers do not outweigh the perceived benefits (Kasl, 1975). If the benefits outweigh the barriers, then the individual will take preventive action.

According to the conceptual framework of the HBM, health behaviors are more likely to occur if an individual feels susceptible to a specific condition and feels the condition is serious (Champion, 1987). Furthermore, Mikbail (1981) states that the individual's perception of susceptibility to a disease has been found to be positively related to the taking of a wide variety of preventive health actions and obtaining screening. Similarly, Stein (1992) states that basic cognitive variables influence behavior, and that factors positively associated with behavior are an understanding of personal susceptibility to illness and understanding of benefits of treatment. The HBM, for the purposes of this study, the HBM has been adapted to specifically reflect preventive health behavior. This HBM

combines the concepts of perceived severity and perceived susceptibility into a single variable: perceived susceptibility. This model uses the concept efficacy instead of self-efficacy, defining it as the confidence that the individual has in a particular intervention as opposed to the degree of self-confidence an individual has in performing a particular health related activity. This model will utilize the term intentions instead of health motivation but will define the concept very similarly. This HBM combines the two concepts perceived barriers and perceived benefits into one variable: perceived barriers. It will utilize the term social influences to describe the external influences related to preventive behavior, i.e. mass media, advice from others, provider recommendation, illness of family members and newspaper or magazine, as opposed to the term social influence. This HBM, is therefore, for the purpose of describing preventive cervical cancer screening, comprised of six variables: perceived susceptibility, knowledge, social influence, perceived barriers, efficacy, and screening intentions (Given, Given, & Dimitrov, 1989). Susceptibility will be an individual perception; efficacy, barriers, knowledge, screening intentions, perceived threat and social influences will be modifying factors. Pap smear screening frequency rates will be the likelihood of preventive action.

For the purpose of this study, social influence, the independent variable, will be correlated with the dependent

variable, the number of Pap smears in the last four years. It is possible to define the variables in this manner because this adapted HBM proposes that the extent to which an individual participates in screening health behaviors is dependent on health beliefs (Given, Given, & Dimitrov, 1989). Because of its psycho social factors, this framework will be used as a guide in this study of a group of Sault Ste. Marie Tribe of Chippewa Indian women aged 40 years and older and their health beliefs regarding Pap smear screening frequency.

Critique of the Health Belief Model

As discussed earlier, health belief concepts have proven to be successful in explaining a variation of health behaviors. However, Janz and Becker (1984) have identified two important conceptual limitations of the HBM. First, the HBM is based on the assumption that the individual perceives health as a highly valued state; consequently, the model may be limited to measuring only those individuals who view their health in this manner. Second, the HBM is primarily a psychosocial model and is, therefore, mostly limited to accounting for the variance in individual health-related behaviors as can be explained by attitudes and beliefs.

The HBM is a dynamic conceptual framework, that is, the variables occur in sequence with each concept relating to the following one, creating movement in one direction as illustrated by the arrows in the model. Multivariate statistical techniques are often employed when analyzing

this model in order to accurately reflect the overall direction and close conceptual relationship that these variables have to each other. However, for the purposes of this study, the variables will be analyzed separately and will not be examined in relationship to each other. Therefore, the dynamic quality of the model and the relationship that the variables have to each other will not be accounted for (Fleishman, 1993) (see Figure 1). Native American research is often evaluating attitudes, beliefs and knowledge in relation to cancer, and so the HBM is an appropriate theoretical framework to use for this project.

Conceptual Definition of Study Variables

Social influences (cues to action), as illustrated in Figure 2, as the independent variable, in the context of Pap smear screening for older women, refers to any advice or discouragement from a member of the woman's social network about screening, i.e. family, friends, or health care providers. These influences refer to the motivating or modifying factors that direct the patient to follow positive (to be screened) or negative (not to be screened) health behaviors in relation to their health beliefs. Social influences (cues to action) is the influence that the external environment has on an individual in regard to their health behaviors. The external environment is defined as one social support network: family, friends, or physician, as well as mass media such as newspapers or billboards (Champion, 1991; Pender, 1987). Social influence also

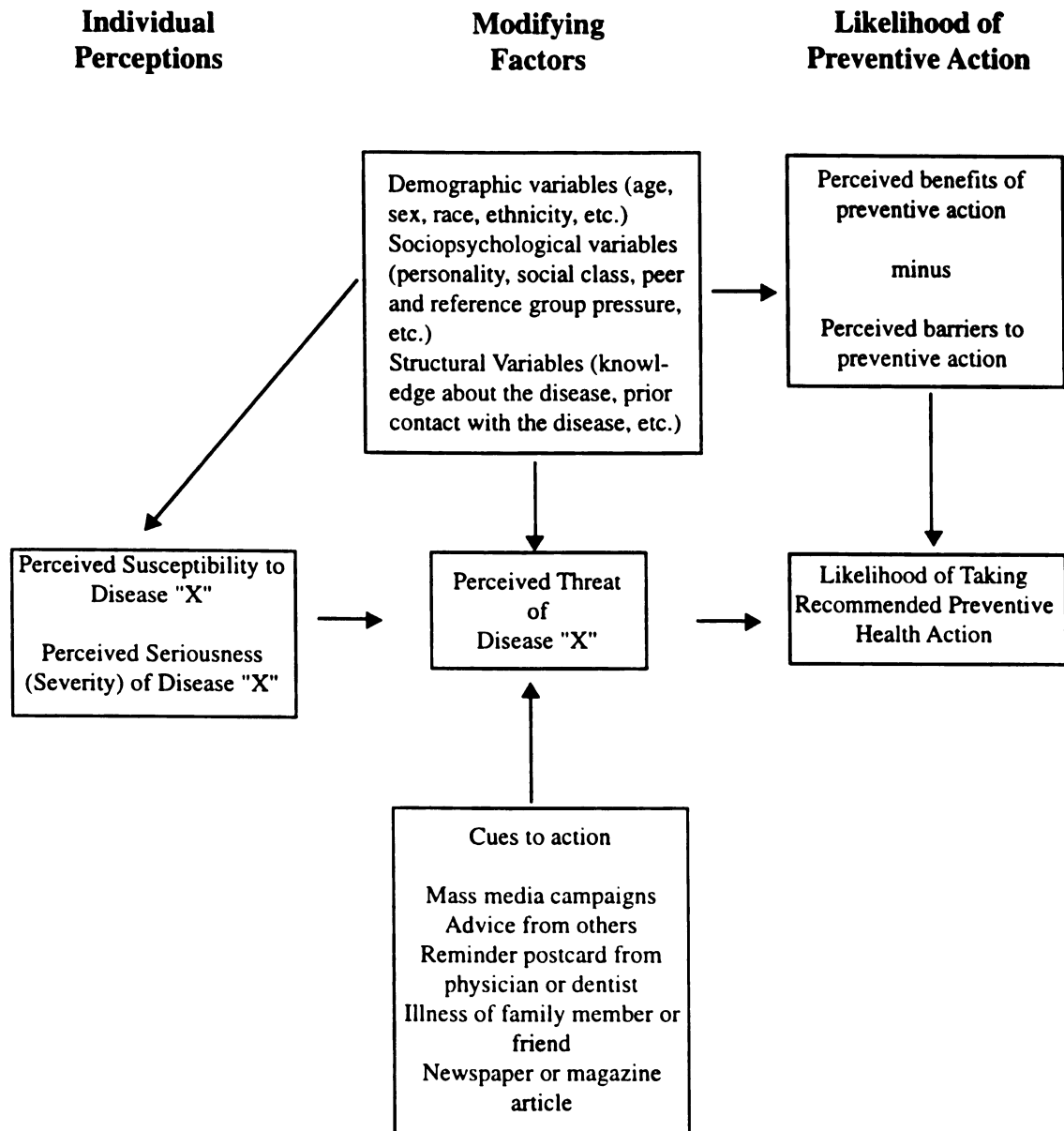


Figure 1: The "Health Belief Model" as predictor of preventive health behavior. Becker, Drachman, & Kirst (1974).

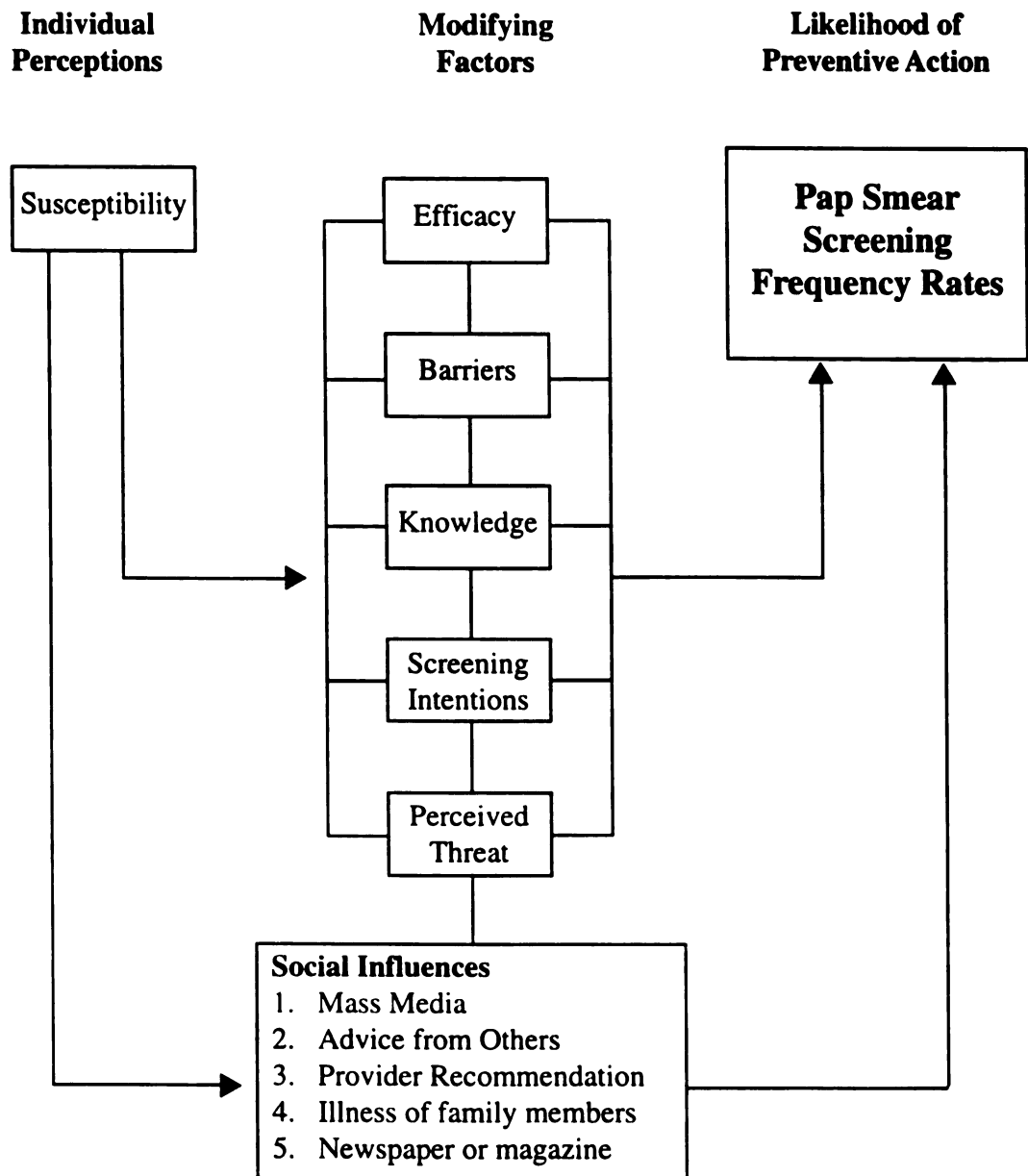


Figure 2: Adapted Health Belief Model as a predictor of preventive health behavior. Becker, Drachman, & Kirscht (1974).

depends on the degree to which an older woman perceives the opinions about Pap smear screening of members of her social network to be important. Social influence, in the context of the HBM accounts for an older woman's generalized perception of her health beliefs toward cervical cancer. The extent to which an older woman responds to social influences in relation to cervical cancer screening, influences the preventive action that she is likely to take in order to prevent cervical cancer from occurring. Schwab, Meyer, and Merrell, (1994) define social influences (cues to action) in relation to the HBM as a modifying factor in which sociopsychologic variables such as peer pressure, family expectations, provider recommendations and motivational factors such as advice from others, illness of family members or media influence screening practices. Pender (1996) defines social influence as effecting health-promoting behavior directly as well as indirectly through social pressures or encouragement to commit to a plan of action. For social influences to have an effect, individuals must attend to the recommendations and advice of those close to them, media pressure, or those respected by them and engage in or refuse to engage in preventive behavior according to that advice or recommendation.

The number of Pap smears that the subject has received in the past four years, at least one per year with a minimum criteria of at least one in three years, will be the dependent variable. To define Pap smear screening

frequency, this study will follow previously established guidelines. One finds the American Cancer Society does not recommend a specific time frame for screening. The guidelines are that asymptomatic women who are 18 years and older, or who have been sexually active, have three consecutive annual Pap tests and pelvic examinations, the Pap test may be performed less frequently at the discretion of the physician. The American College of Obstetricians and Gynecologists (ACOG) criticize the previous ACS recommendations and have advocated annual exams (Blue Sheet, 1988; Celentano, 1988; Walton, 1976). Indian Health Services recommends yearly Pap exams for all women 18 years and older. These recent recommendations are consistent with findings of studies that have shown value in cervical cancer screening for elderly women. While only a few U.S. investigators have studied the efficacy of Pap testing in this age group, studies in Scotland and Iceland have found that routine screening reduces mortality from cervical cancer in elderly women--as well as their younger counterparts (Johannesson, 1982; MacGregor, 1978).

Compliance, for the purposes of this study, means at least one Pap exam done in the last three years. However, for the purposes of this study, each woman in the sample population will be asked the number of Pap exams in the last 4 years. The definition of routine Pap smear screening is derived from the selected research investigations on Pap smear frequency rates (Celentano, 1988; Harlan et al., 1991,

Hayward et al., 1988). The Sault Tribe of Chippewa Indians health care services respects the above research of Pap smear screening, and agrees with ACOG and Indian Health Services guidelines of every year for preventive care. However, after consulting with Dr. Anne Lanier, it was decided by this Principle Investigator to follow the American Cancer Society's guidelines. Dr. Lanier (1997), found that a strict criteria of a Pap every twelve months for four years greatly decreased the sample size of the compliance group. It was found that using the criteria of at least one Pap smear done in the last three years created a sample size of compliance, adequate for data analysis.

Noncompliance will be defined as those women who did not follow the Pap smear frequency guidelines, and have not had a Pap exam in the last 3 years. Careful documentation will be prepared from the chart audits of Pap smear frequency in an attempt to establish if Native women in this target population are receiving one pap exam per year for the entire four years. This data will be documented in the discussion section.

The goal of this study is to explore the association between Pap smear screening frequency rates and social influences (cues to action) in a select population of Sault Ste. Marie Tribe of Chippewa Indian women, aged 40 years and older. Interventions will be created, based on the results of this study to increase Pap smear screening frequency and decrease cervical cancer in this population.

As illustrated by the direction of arrows in Figure 2, susceptibility, accounts for a Native American woman's generalized individual perception of threat of getting cervical cancer. The perceived threat of cervical cancer, screening intentions, knowledge of cervical cancer and the Pap smear exam, barriers, efficacy, and social influences are visually depicted in the model in order to illustrate the modifying factors of preventive behavior toward Pap smear screening frequency rates. The Pap smear screening frequency is depicted in this model as the likelihood of taking preventive action. The extent to which a Native American woman values social influences, or feels pressured by social influences regarding cervical cancer, influences whether the modifying factors will have a positive (to be screened) or negative (not to be screened) effect of the likelihood of preventive action that she is likely to take.

Methods

The methods utilized in this study are presented in this section. Study questions, sample procedures, instrumentation, scoring, data collection and data analysis are outlined. This is followed by a discussion on study limitations and the protection of human subjects.

Sample

The target population for this study was a group of Sault Ste. Marie Tribe of Chippewa Indians women, aged 40 years and older, who reside in the counties of Schoolcraft, Delta, Alger and Marquette, Michigan (N=354 women). This

descriptive study utilized a convenience sample (N=100) of Chippewa Indian women, aged 40 years and older for the chart reviews, of which 30 of those women from the sample size were chosen randomly and given a structured interview for further information as to why they are or are not screened for cervical cancer. Fifteen women were chosen in the compliant group, those who have received pap exams in the appropriate guidelines, and 15 women chosen will be in the noncompliant group, those who have not received Pap exams in the expected guidelines. The target population utilized the Manistique and Munising Tribal Health Clinics, and have been using these clinics consistently for the last four years. All women who had a hysterectomy were excluded from the study, along with the women who have not used the clinics beginning in 1993, and those women who have had abnormal Pap exams.

Field Procedures

Methods to be used for this study include a chart review of 100 Native American women who use either the Manistique or the Munising Tribal Health Clinic to identify individual Pap smear screening frequency rates. This review will be four years retrospectively to determine if they are obtaining routine screening according to these study guidelines, however, for the purposes of this study, only three years will be used. Fifteen women who do obtain routine Pap smear exams will be randomly picked, along with

15 who have not received an exam in the recommended time frame.

Protection of Human Subjects

This project will obtain approval from the University Committee on Research Involving Human Subjects, prior to data collection. All chart audits will be done according to the chart number. The questionnaires will be coded with numbers, and at no time will any subject's name appear in this study. A consent for study will be signed by all subjects who chose to participate in the structured telephone interview.

Operational Definition of Variables

The variables will be operationalized by the focus group and the structured interviews of each subject completing the questionnaire (see appendix B). The independent variable will be operationalized as follows:

Social influence, defined as any advice or discouragement from a member of the woman's social network about screening, i.e. family, friends, or health care providers, was operationalized by questions 5,6,7, and 8. These questions measure the influence that "important others" such as health professional, friends, and family have on a woman's decision to get a Pap smear. Included are questions measuring the reported advice, discussion or discouragement on the practice of cervical cancer screening from "important others". The perceived importance of the opinions of "important others" about Pap smear screening is

also included. Questions 1, 3, 4, 9, 10, 11 and 12 will be categorized using descriptive analysis for more detailed information.

Pap smear frequency will be defined as the number of Pap smears that the subject has received in the past four years, at least one per year with a minimum criteria of at least one in three years. The dependent variable was operationalized as follows: The number of Pap smears the subject receive in the last 4 years--(question 2). Measurement of this variable was done using one question which asked the respondent the number of times she had had a Pap smear in the last 4 years.

Instrumentation and Measure

The instrument to be used will be Given's (Given et al.) Health Belief instrument modified by J. Fleishman (1993) to cervical cancer screening. Reliability and validity are broken down as follows: The influence scale (alpha .73) was considered reliable for this study (Fleishman, 1993). The matching of chart reviews with a self report will ensure the instrument is measuring what it is intended to measure.

Scoring Procedures

The influence scale contains four items. Three items have a total of 15 yes/no alternatives, with each of these items contributing 1.8 points (maximum of 27) to the total score. The fourth item is a scale with seven items. Each item will be scored as 5,4,3 or 0, with a maximum of 35

points for these items. The highest possible score is 62 points. A "score" of 43 (70 percent) or greater indicated a positive (encouraged to be screened) influence toward Pap smear exams and would expect an increased number of Pap smear exams.

The dependent variable, the number of Pap smear exams in the last four years was scored by assigning a numerical value to each of the 6 possible alternatives, ranging from "can't remember how many Pap smears in the last 4 years" to "more than 4 Pap smears in the last 4 years" in the Given questionnaire. For the purposes of this study, the number of Paps will be scored by the self-report of actual numerical values from each of the possible six alternatives ranging from "can't remember how many Pap smears in the last 4 years" to "more than 4 Pap smears in the last 4 years". This number will be validated from the chart audits. A crosstabs, chi-square, and Fisher's Exact test will be used to determine significance between the independent variable, social influences and the dependent variable, the number of Pap exams the women has had in the last 4 years. Chi-square and crosstabs is used to test the difference in proportion in two or more groups of nominal data. A Fisher's Exact will also be run. This test was chosen due to certain situations, when the total sample size is small (total N of 30 or under) or when there are cells with a value of 0. Fisher's exact test is usually used to test the significance of differences in proportions (Polit, & Hunglar, 1995).

Focus Group

A focus group was conducted with six Native American women, aged 40 years and older to ensure the questionnaire was clear and concise. Questions directly from the questionnaire were asked to each woman in the focus group (see Appendix A for questionnaire). The focus group provided this investigator with insights into the feelings, attitudes, beliefs, and behaviors of the target population in relation to the questionnaire. Every women who participated in this focus group fit the criteria of this project which was: Native American heritage, aged 40 years and older, have used the Munising and/or the Manistique Tribal Health Clinic at least once per year for the last 3 years, and have a cervix. The nature of groups dynamics, upon which this focus group methodology was based offers certain strengths to this research project. Small groups (6-12 women) provide a safe setting to explore differences among members of the intended audience. Focus groups also provide a forum through which the researcher can learn audience attitudes and perceptions on this specific issue of social influence in association to Pap smear frequency rates in a setting which allows for interaction among audience members, which is how most attitudes and perceptions naturally develop (AMC Cancer Research Center, 1994). Each question from the questionnaire was the subject of this focus group to further validate the questionnaire is measuring what it is intended to measure. The women

verbalized ease in the reading and understanding of the questionnaire, and stated it was of appropriate length and time (less than 10 minutes to complete). However, the women of the focus group felt acculturation was an issue with the questionnaire and verbalized there seemed to be a lack of cultural sensitivity. They did not, however, feel this would hamper the validity of the questionnaire or in any way offend a Native American woman. It was confirmed by the women in the focus group the questionnaire was appropriate for the target population.

Research Design

The research design was descriptive, quantitative, and nonexperimental. The research question was: Is there an association between Native American women's social influences (cues to action) and Pap smear screening frequency rates?

Data Collection Procedure

The Health Belief questionnaire was distributed to each woman in the two groups in the form of a structured telephone interview to obtain information on why some women do get routinely screened, and others do not. The interviews were done by the Principle Investigator, who has been trained to conduct telephone structured interviews. Data collection was based on the frequency of Pap exams identified from the chart audits and the scoring of the questions on the questionnaire.

Data were collected during a six week time interval, between December 9, 1997 and January 22, 1998. Data collection procedures consisted of chart audits, a focus group, and 30 structured telephone interviews. Approval to conduct the study was received from the University Committee on Research Involving Human Subjects, and from the Sault Ste. Marie Tribe of Chippewa Indians. Charts from the Munising and Manistique Tribal Health Clinics were then made available for auditing.

To derive a study sample, one hundred-seventeen charts were audited by the investigator. These charts consisted of every woman who had used either the Manistique or Munising Tribal Clinic since 1993. Twenty-two of these were women with hysterectomies, and were deleted from the study. To ensure each woman met the criteria for the study, a chart audit form was used (see Appendix B). The remaining 95 charts were divided into 2 groups, a compliant group (at least one Pap in the last 3 years) and a noncompliant group (no Pap on record for the last 3 years). Seventy-four charts audited recorded at least one Pap in the last 3 years; 21 charts had no Pap recorded in the past 3 years. Random sampling was done for the 15 women in each group to create the study sample population.

Due to factors such as no telephone, did not live at the address in the chart anymore, and unable to locate, all 21 women in the noncompliant group were contacted in an attempt to obtain 15 women for the study. In the compliant

group, 22 women were contacted, which resulted in 15 completed structured, telephone interviews.

Due to lack of resources by this investigator, only 15 of the 74 compliant group women were given structured telephone interviews; however, had all 74 women been given a structured telephone interview, along with the 21 noncompliant women, this study would have had more power.

The reliability of the questionnaire was .73 (Fleishman, 1993). Further validation of the questionnaire was confirmed by the focus group, the chart audits and the self-reports. Each women in the focus group verbalized the questionnaire was measuring what it was intended to measure (social influences and the association of Pap smear screening exams).

Structured telephone interviews were then conducted by the investigator with each of the women in the study sample (N=30) after consent was obtained (see Appendix C for consent form). The data analyzed were the responses of each woman of the questions from the HBM questionnaire.

Data Analysis

Data analysis was performed with the SPSS/PC+ computer program on the actual social influences answers (questions 5,6,7 and 8) of each woman in the study sample, from the questionnaire. Data will be recorded from the questionnaires and each "score" will be tallied up for results of whether social influences (cues to action) influence pap smear screening frequency. The influence

scale contains four items. Three items had a total of 15 yes/no alternatives, with each of these items contributing 1.8 points (maximum of 27) to the total score. The fourth item was a scale with seven items. Each item was scored as 5, 4, 3 or 0, with a maximum of 35 points for these items. The highest possible score was 62 points. A "score" of 43 (70%) or greater indicated a positive (encouraged to be screened) influence toward Pap smear exams and would expect an increased number of pap smear exams.

The dependent variable, the number of Pap smear exams in the last four years was scored by assigning the actual numerical value to each of the six possible alternatives, ranging from "can't remember how many pap smears in the last 4 years" to "more than 4 Pap smears in the last 4 years". All Pap smears in 4 years were recorded in the chart audit, although for the purposes of defining the compliance group, 1 Pap in 3 years was used for self-report and to comply with ACS and ACOG guidelines.

Chi-square, crosstabs, and Fisher's Exact tests were used to determine the association of the independent variable, social influence, to the dependent variable, Pap smear screening frequency rates. For the purpose of statistical analysis and application of the study results to contribute to advanced practice nursing, each question relating to the social influence (cues to action) was broken down and correlated separately with the dependent variable.

Results

The results described in this section are compiled from the structured telephone interviews and the chart audits conducted with 30 subjects who were eligible for this study. Included are tables providing results of the sample study responses and data analysis of those responses. The following are the summary of each woman's responses, and the data analysis on questions 1, 3, 4, 9, 10, 11 and 12 from the questionnaire. This descriptive information offers detailed information about the subjects, which provide information about the target population.

The 30 subjects in the sample, 15 subjects per group, ranged in age from 40 and 84 years with a mean age of 60.4 years. When broken down into the compliant and noncompliant groups, the average age of the compliant group was 60.4, and the average age of the noncompliant group was 60.3. All subjects were of Native American heritage, and had utilized either the Manistique or the Munising Tribal Health Clinics since 1993. The average number of office visits for the compliant group was 31.8, and the noncompliant group was 15.6. Table 1 is a summary of the responses from the structured telephone interviews of each woman from the compliant group and the noncompliant group on questions 1, 3, 4, 9, 10, 11, and 12 of the questionnaire.

Table 1.

Summary of Responses to Questions not Dealing with Social Influences, by Group

Question/Response	Compliant (N=15)		Noncompliant (N=15)	
	n	%	n	%
1. Mean number of Pap smears in the past 3 yrs:				
Self-report	3.6		0	
Chart Audits	2.0		0	
3. What prompted most recent Pap:				
Routine Checkup	12	80	5	33
Provider Reminder	3	20	10	67
4. Number of participants reporting friends dx with cervical Ca in past 5 years:				
0	0		0	
1	0		0	
2	0		2	
3	3		0	
4	0		0	
5	0		0	
9. Gender Preference for Pap administration:				
female	7	47	7	47
male		0	7	47
doesn't matter	8	53	1	7
10. Professional preference for Pap administration:				
physician	8	53	6	40
APN	2	13	1	7
physician assistant	0		0	
registered nurse	0		0	
doesn't matter	5	33	8	53
11. How often you feel you need a Pap:				
yearly	9	60	7	47
every 2 years	6	40	1	7
every 3 years	0		0	
every 4 years	0		1	7
never	0		6	40

Table 1. (cont.)

Question/Response	Compliant (N=15)		Noncompliant (N=15)	
	n	%	n	%
12. Intention to be screened in the coming year:				
definitely	11	73	2	13
very likely	3	20	3	20
somewhat likely	1	7	4	27
not very likely	0		3	20
not at all likely	0		3	20

Response pattern differences found "How often you feel you need a Pap" with a significance level of .013 ($p < .05$) and "Intentions to be screened next year" with a significance level of .007 ($p < .05$). No other data proved significant with crosstabs or Fisher's exact analysis in the response patterns of these questions.

Table 2 is data from the responses of the study sample for the research question. The research question was comprised of the social influence questions, 5, 6, 7 and 8 from the HBM questionnaire, with the higher score indicating more social influence in relation to Pap smear screening. The maximum score value was 60, minimum score value was 14 from the sample study.

The total score of the social influence section of the questionnaire presented in Table 2, showed the total score of 43 (70%) or greater, to indicate a positive (encouraged to be screened) influence toward Pap smear exams. These

Table 2.

Tertiles of Individual Scores of Responses Dealing with Social Influence by the Study Sample.

Total Score on Social Influence scale (Cues to Action), Questions 5,6,7 and 8	Compliant (N=15)	Noncompliant (N=15)
14.0-33.4	2	8
33.8-41.4	8	2
43.4-62	5	5

results were to be used to determine whether there is an association between social influences (cues to action) and Pap smear screening frequency rates. It was expected by the investigator to have these scores falling in the compliant group. The figures represent how many women fell into the specific categories. The individual scores, based on their responses to the social influences questions of each woman in the study sample are recorded in the scoring categories, and answer the research question, "Is there an association between social influences and Pap smear screening frequency rates". The scores presented show the distribution of women, in the specific scoring categories of the compliant group and the noncompliant group. As many women in the noncompliant group scored a total of 43 or greater as the compliant group. There were no differences between the groups. The average score (questions 5, 6, 7 and 8 on the questionnaire) for the entire study sample (N=30) was 38.4.

The scores, and the number of women who scored 43 and greater was expected in the compliant group only. As Table 2 indicates, the number of women who scored a 43 or greater in the compliant group were 5. There were also 5 women in the noncompliant group who scored 43 or greater. However, the other 2 groups showed a much different distribution. Eight women in the noncompliant group scored in the 14-33.4 group as opposed to 2 of the compliant group. In contrast, 2 women in the noncompliant group scored in the 33.8-41.4 group, with 8 of the compliant group. There appears to be great contrast between groups in the lower scores, and no difference between groups in the upper (43.4-62.0) group.

The next 4 questions are the continued responses, and data analysis of the social influences (cues to action) questions (questions 5,6,7 and 8) from the HBM questionnaire. The total score of these questions, and the attainment of a significance level of $p < .05$ were used to answer the research question: Is there an association between social influences (cue to action) and Pap smear screening frequency rates?

Table 3 represents the number of women in the study sample (N=30) who answered "yes" or "no" to each question.

This question did not show significance in any area. However, when this data were re-analyzed with a Chi-square the results were dramatically significant. The variables were combined and grouped into a new table. This new table consisting of Healthcare Professionals (Physician and

Table 3.

Summary of Responses to Question 5: Have any of the
Following Persons Discussed Pap Smears With You?

Relationship	Compliant		Noncompliant	
	Yes	No	Yes	No
Family Doctor	10	5	11	4
Nurse	10	5	12	3
Family	8	7	5	10
Friend	7	8	5	10
Co-worker	3	12	3	12
Other	0	0	0	0

Nurse), Family/Friends (Family and Friends), and Other (Co-worker) was based on the yes/no answers of the entire group. This table tested the significance within the entire sample, and the degree of significance social influence has on the following persons discussing pap smears with the women in the study, Healthcare Professionals, Family/Friends, Other.

The chi-square statistic was used due to the categories of data concerning the proportions of cases that fall into the various categories i.e. Healthcare Professionals, Family/Friends, Other. The (X squared) statistic is applied to contingency tables to test the significance of different proportions. It is then computed by summarizing differences between observed and expected frequencies for each cell. A table of chi-square values (the x squared) for various degrees of freedom establish significance levels (or p values) of .10, .05, .02, .01, or .001. For the purposes of this study, a value of 13.82 is needed for a significance

level (or p value) of .001. As shown in Table 4, the chi-square results is 23.7 with 2 df. This far exceeds the value needed to establish significance. This obtained value, 23.7, is substantially larger than would be expected by chance, and so it would conclude that Healthcare Professionals do discuss pap smear exams with the sample population (Polit & Hungler, 1995).

Question 6: Have any of the following persons advised you to obtain a pap smear?

* There were no significant data in the question.

Question 7: Have any of the following persons discouraged you from obtaining a pap smear?

* This question did not statistically compute. Statistics cannot be computed when the number of non-empty rows or columns is one (no answer of "no" given).

Question 8: requested responses of "very important", "important", "somewhat important" and "not at all important" of each woman in the study sample with regard to the valued opinion and advice of each woman's family doctor (primary care provider), nurse, family member, friend, co-worker, radio or T.V., literature or pamphlets and "other". No "other" categories were chosen. Table 5 represents the responses of women in the study sample (N=30).

Results from this question showed physician's (provider's) opinion and advice are very valuable to the women in the study, $p=.057$, along with the opinions of co-workers $p=.050$. This data were again re-analyzed with the

Table 4.

Responses to Question 5 Summed Across Compliance Groups and Relationship Groups

Relationship	Responses		Total
	Yes	No	
Healthcare Professionals	43	17	60
Family/Friends	25	35	60
Other	6	24	30

Note: X squared (d.f.=2)=23.7, $p<.0001$

Table 5.

Summary of Responses to Question 8: How Important to you is the Opinion and Advice of the Following

Relationship	Compliant n=15	Noncompliant n=15
Family Doctor		
Very Important	15	9
Important	0	2
Somewhat Important	0	3
Not at all Important	0	1
Total	15	15
Nurse		
Very Important	11	6
Important	3	3
Somewhat Important	1	4
Not at all Important	0	2
Total	15	15
Family		
Very Important	6	2
Important	5	4
Somewhat Important	3	6
Not at all Important	1	3
Total	15	15

Table 5. (cont.)

Relationship	Compliant n=15	Noncompliant n=15
Friend		
Very Important	4	2
Important	4	4
Somewhat Important	5	4
Not at all Important	1	5
Total	15	15
Co-Worker		
Very Important	2	2
Important	0	4
Somewhat Important	0	2
Not at all Important	13	7
Total	15	15
Radio/T.V.		
Very Important	0	1
Important	4	4
Somewhat Important	5	3
Not at all Important	6	7
Total	15	15
Literature/Pamphlet		
Very Important	0	1
Important	4	5
Somewhat Important	5	3
Not at all Important	6	6
Total	15	15
Other	0	0

combined variables, Healthcare Professionals (Physician and Nurse), Family/Friends (Family and Friends), and Other (Co-worker) based on the "very important", "important", "somewhat important", and "not at all important" responses of the entire group, in an attempt to show a stronger association.

This table, again, tested the significance within the entire sample, and the degree of significance social influence has on how important the following opinions and advice of Healthcare Professionals, Family/Friends, Other with regard to cervical cancer screening and the women in the study. For the 6 degrees of freedom, a $p < .001$ would be 22.46. As can be seen with Table 6, the chi-square was 84.3 which is a p value of $< .00001$. This obtained value, 84.3, is substantially larger than would be expected by chance, and so it would conclude that Healthcare Professional's opinions and advice are important to the women in the study in relation to pap smear exams (Polit & Hungler, 1995).

Discussion

The most important findings from this study included two important concepts; First, there seemed to be no differentiation between compliant or noncompliant group's total score of the social influences (cues to action) questions on the questionnaire, which was the tool measuring social influences as a cue to action, and Pap smear screening frequency rates. This would indicate, in relation to the research question: "Is there an association between social influences (cues to action) and Pap smear screening frequency rates", there is no association between social influence as a cue to action and Pap smear screening frequency rates.

Second, although there was no association between social influence (cue to action) and Pap smear screening

Table 6.

Responses to Question 8 Summed across Compliance Groups and Relationship Groups

Relationship Group	Responses n
Healthcare Professionals	
Very Important	40
Important	9
Somewhat Important	7
Not at all Important	4
Total	60
Family/Friends	
Very Important	15
Important	17
Somewhat Important	18
Not at all Important	10
Total	60
Other	
Very Important	6
Important	21
Somewhat Important	18
Not at all Important	35
Total	90

Note: X squared (d.f.=6)=84.3, $p<.00001$

frequency rates, all women from both the compliant group and the noncompliant group in this study valued the opinion and advice of their provider, and stated that Pap smears were being discussed. This indicates that social influence is a factor in Pap smear screening, as found in the study done by Weintraub, Violi and Freedman (1987), just not "cues to action".

There seemed to be a discrepancy between the chart audit number of Pap smears in the 4 year period for the

compliant group and the self report. The chart audits showed a mean average of 2 pap smears in the 4 year period, but the self report mean was 3.6. Bowman, Redman, Dickinson, Gibberd and Sanson-Fisher (1991), found as many as 10 percent of women say they have had a pap smear when pathology records suggest that they have not. Sawyer, Earp, Fletcher, Fedora, Daye, and Wynn (1989), found women usually overestimate how recently they have had a pap smear. Using whether a pap smear had been done in the past three years as a cutpoint, there was a 20% error rate in the self report as opposed to the pathology report.

What prompted their last Pap proved statistically significant. Fifty-seven percent of the subjects stated that a Pap smear was part of their routine exam even when they had not had a pap in the last 4 years. It is assumed by this investigator, that these women had not had a routine check up in the past 4 years, although the average number of office visits for the entire sample was 23.7. This indicates the subjects in this study are receiving episodic care, but limited preventive, health screening care. These findings correlated with the studies done by Harlan, Bernstein, and Kessler (1991) and Makuc, Freid, and Kleinman (1989).

Few of the subjects had friends who were diagnosed with cervical cancer in the past 5 years and so this did not contribute much information in relation to social influence. This may correlate with the findings of Michalek, Mahoney,

Tome, Tenney, and Burhansstipanov who found Native American women do not prioritize cancer above substance abuse, diabetes and maternal and child issues. These illnesses and issues are much more visible to Native American women, and usually affects many family members.

Who discussed Pap smear screening with them proved to be an important question in this study. Healthcare Providers do discuss Pap smears with the women in this study, but only 19 of the 30 subjects stated they were advised by their provider to obtain a Pap smear. Hirst, Hill, and Marks (1990) found 50 percent of the women in their study agreed to a Pap exam when encouraged by the provider.

The category of co-worker was not adequately represented in this study. Only 4 of the 30 women in the sample stated that they worked, but all agreed that their co-workers did create social influence in the area of Pap smear screening. No one in the study was ever discouraged from obtaining a Pap smear at any time in the last 4 years.

Importance of the opinion of the provider proved to be an important finding in this study (The term physician will be interchangeable with primary healthcare provider for the purposes of this study to include Advanced Practice Nurses offering primary healthcare). All women in the compliant group (15/15 or 100%) valued the opinion of the provider and 9/15 (60%) of the noncompliant group valued the opinion of the provider.

The Health Belief Model (HBM) was chosen for the study because it is a well accepted predictor of health-related behaviors in a variety of settings and populations (Janz & Becker, 1985). Champion (1984) defined social influence, in relation to the HBM, as any advice or discouragement from a member of a social network about screening, or discussion about screening with a member of a social network. The study found providers did discuss Pap smear screening with the women in the sample, and the opinions were valued. No one in the study was ever discouraged from obtaining a Pap smear. However, this did not create a cue to action for Pap smear exams.

A known limitation of the HBM is that it may only be effective in measuring the health behaviors of those who believe their health is a valued state (Fleishman, 1993). This limitation was evident in the study. Health beliefs related to cervical cancer screening in this sample population were not perceived as a benefit in reducing the threat of disease. This finding supported the findings of Kasl (1975) who stated, perceived benefits must outweigh the perceived threat, and only then will an individual will take preventive action.

Few women in this study had friends diagnosed with cancer in the past 5 years, thus women in this sample population seemed to feel they were not susceptible to cervical cancer. This correlated with the findings of Kaur (1996) who found many Native American women did not believe

they were susceptible to cervical cancer because they had associated it with the "white man's disease". The results of this study may also correlate with the findings of Michalek, Mahoney, Tome, Tenney, and Burhansstipanov who found Native American women do not prioritize cancer above substance abuse, diabetes and maternal and child issues. These illnesses and issues are much more visible to Native American women, and usually affects many family members.

The HBM, in relation to the study, found social influence as an important health belief to Native American women. Healthcare professionals opinion's were found to be valued, and the discussion of Pap smear screening is being done by the provider to each woman. However, as is consistent with other Native American researchers who have used the components of the HBM in relation to cervical cancer screening, social influence was not a cue to action for Pap smear screening by this target population. Although each component of the HBM has been investigated by Native American researchers and many interventions have been initiated from the findings of these investigations, a great many elder Native women continue to go unscreened for cervical cancer.

Implications for Advanced Practice Nursing

Discussion of pap smear exams and the valued opinion of the healthcare provider by each woman in the study has major significance to the Advanced Practice Nursing role in the primary care setting. The expertise of the Advanced

Practice Nurse (APN) as a clinician, educator, researcher, client advocate and role model is crucial. In the role of clinician, the APN judges the necessity of screening, performs the Pap exam, interprets lab results, and plans follow-up care on a long term basis. Missed opportunities for screening seemed to play a part in this study, and an important component of the APN's role as a clinician will be to take advantage of each office visit for the client and offer the most comprehensive care, which includes screening of cervical cancer. The APN must be able to be flexible in the role of clinician in primary care to screen women for cervical cancer and all health promotion activities when the client is available. An example of this would be to flag the charts of all the women due for their Pap exam, and when the women makes an appointment at the clinic for other reasons i.e. acute care or chronic illness monitoring, the discussion of Pap smears by this APN will be done to encourage the woman to schedule enough time to have the exam done at that time, or remind her to make an appointment in the near future to have the exam done.

As an educator, the APN must educate clients about the promotion of self care and health education strategies. This includes the importance of regular pap smear screening as an ongoing health promotion behavior, and the importance of annual cervical cancer screening via Pap smear exams as a lifetime goal to detect cervical cancer at an early stage, thus creating better health outcomes.

As a role model, the APN must pursue behavior worthy of emulation by both clients and co-workers in the area of Pap smear screening. This includes demonstrating not only proficiency in the art of Pap smear testing, but also expert knowledge of cervical cancer.

As an APN in the Manistique and Munising Tribal Health Clinics, a prominent woman in the community will be identified by the APN, and with mutual agreement by both the leading woman or women, be used as a role model in the community to encourage other women to seek preventive health screening i.e. Pap smear exams.

In light of the study findings, the role of the researcher is another implication for the APN. Because there was not an association between social influences (cues to action) and Pap smear screening frequency rates, the APN must pursue a systematic and scientific investigation of Pap smear screening frequency rates and test nursing theories to foster a spirit of inquiry of other reasons Native American women, aged 40 years and older, do not seek annual Pap smear screening exams.

The role of the client advocate, in relation to these findings, is one of high importance. The transfer of responsibility of annual Pap smear screening to each woman on an individual basis must be accomplished in order to create strategies to decrease cervical cancer in this population. Focus groups will play an important part of this APN's practice in order to identify reasons women in

the geographical area of Manistique and Munising do not take social influences to the cue to action phase in relation to Pap smear screening.

Study findings did not indicate an association between social influence and Pap smear screening frequency rates. However, this study did indicate that healthcare professionals do play a vital role in the social influence of Pap smears. This finding is of great importance to the Advanced Practice Nurse in Primary Care. Educating clients of the importance of annual screening behavior, and stressing the value of Pap smear exams to detect cervical cancer in early stages, must become an integral part of the comprehensive approach to nursing practice in order to create positive health outcomes. The HBM can be the conceptual framework for this practice, and revised and refined through health outcomes. By utilizing the study findings of this study, and other Native American researchers, the APN can better understand the health beliefs of older, Native American women, and create interventions based on the HBM to increase Pap smear screening frequency rates.

The APN can create individual, mutually agreeable intervention strategies with each older, Native American woman using the Manistique and Munising Tribal Health Clinics to create "cues to action" for Pap smear screening. Discussion of the importance of Pap smear screening at every visit, regardless of purpose of that visit, encouraging each

woman to schedule a Pap smear when she is coming to the clinic for other reasons such as hypertension, diabetes or medication refills will be part of that strategy. Educating each woman on the importance of detecting cervical cancer at an early stage, and understanding each woman's individual health beliefs toward cervical cancer, and Pap smear screening will also be the focus of this APN. Emphasis on the role of clinician, role model, educator, client advocate and researcher will be an important aspect of this comprehensive approach to Pap smear screening frequency rates.

Future Research

This study leaves many avenues for future research. These include replicating this study on a larger sample size, and in a culturally-sensitive manner, in an attempt to generalize the findings to the overall Native American women population, and providing further information about the HBM as a conceptual framework. Looking more globally, such as studies on all cultures of women and the social influences relating to Pap smear screening frequency rates is also needed for a broader understanding of the health beliefs of social influence relating to Pap smear screening.

A study of Pap smear screening intentions of the women in both the compliant and noncompliant group on whether each woman did indeed obtain a Pap smear in the year 1998, as per their questionnaire answer.

Future research is needed on the discrepancy between self reports of Pap smear screening frequency rates and documented Pap smear frequency rates. This study found women overestimate self report of Pap exams. A qualitative study may further enlighten healthcare providers on why this discrepancy exists between self reports and documentation in the charts.

More culturally sensitive research such as focus groups on perceiving of susceptibility of cervical cancer and reasons why social influence is not a cue to action must be done in the Manistique and Munising areas. Intervention strategies must be identified by the women in the focus groups which keep social influences from moving to the cue to action phase. More research must be done by this APN on Native American women, aged 40 years and older and what social influences create the decision to be screened or not to be screened for cervical cancer. All components of the HBM have been investigated and yet Native American women still continue to go unscreened for cervical cancer. Successful cancer screening interventions must be identified and initiated in order to decrease cervical cancer mortality rates of older, Native American women. Future research is needed in Native American women's health to develop culturally-sensitive intervention strategies related to cervical cancer screening, and research to evaluate the effectiveness and efficacy of those strategies.

Study Limitations

There are 3 limitations to this study: First, because the Manistique and Munising Tribal Health Clinics have only been in existence since 1992, only a small sample group was available from which to draw. Second, because a convenience sampling method was utilized, the sample did not accurately represent the larger population. Third, because of the possibility of the sample population attending another clinic, chart audits may not reflect true Pap smear frequency rates.

Summary

In summary, findings from this study showed no differentiation between compliant or noncompliant group's total score of the social influence (cue to action) answers on the questionnaire. In relation to the research question: Is there an association between social influence (cues to action) and Pap smear screening frequency rates, there seems to be no association between social influence as a cue to action and Pap smear screening frequency rates.

Although there was no association between social influence as a cue to action and Pap smear screening frequency rates, an association was found with social influence within the groups (N=30) in the valued opinion and advice of their provider, and the statements that Pap smears were being discussed. This indicates that social influence is a factor in Pap smear screening, just not a "cues to action". It was also found that women overestimate the

number of Pap smears they have obtained, and so self-report must also be validated with chart audit information of Pap smear screening frequency rates.

APNs must continue to discuss pap smear screening with each older Native American woman and advise them to obtain annual screening for cervical cancer. APNs should know that the opinion of the APN is valued and heavily weighed by the client in importance. All women must be advised, and never discouraged to obtain a Pap smear. Education about the importance of annual Pap smear exams, as per Indian Health Services standards, must be stressed. It should also be individualized for comprehensive and mutually satisfying strategies for each Native American woman to achieve this goal. The APN must collaborate with each Native American woman to create interventions to move social influence to the cue to action phase.

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APPENDIX A
Questionnaire

Pap smears

A pap smear is a procedure to screen for cervical cancer. Cells from the outer layer of the cervix are obtained during a pelvic exam. These cells are then checked under a microscope to look for any changes which may be a pre-cancerous or cancerous. This questionnaire will examine the health belief variable of social influence in an association to pap smear exams.

1. Have you had a pap smear in the last 4 years? (CHECK ONE)
 YES (1) _____ NO(2) _____

2. If yes to question 1, about how many yearly Pap smears have you had in the past 4 years? (CHECK ONE)
 _____don't know
 _____about 1
 _____about 2
 _____about 3
 _____about 4
 _____more than 4

3. Which of the following best describes what prompted you to have your most recent pap smear? (CHECK ALL THAT APPLY)
 _____To follow up on a previous pap smear (1)
 _____It was part of my routine check-up (2)
 _____A health professional recommended it (3)
 _____A friend or relative has recently had an abnormal pap smear (4)
 _____A relative or friend recommended that I have a pap smear (5)
 _____Other: Please
 specify: _____(6)

4. Do you have any close friends that have been diagnosed with cervical cancer in the last five years? If yes, please write in the number _____.

5. Have any of the following persons discussed pap smears with you? (CHECK ONE FOR EACH)

DISCUSSED PAP SMEAR		
	YES	NO
Family Doctor		
Nurse		
Family		
Friend		
Co-worker		
Other: Please Specify		

6. Have any of the following persons advised you to obtain a pap smear? (CHECK ONE FOR EACH)

ADVISED PAP SMEAR		
	YES	NO
Family Doctor		
Nurse		
Family		
Friend		
Co-worker		
Other: Please specify		

7. Have any of the following persons discouraged you from obtaining a pap smear? (CHECK ONE FOR EACH)

DISCOURAGED PAP SMEAR		
	YES	NO
Family Doctor		
Nurse		
Family		
Friend		
Co-worker		
Other: Please specify		

8. With regard to cervical cancer screening, how important to you is the opinion and advice of the following? (CHECK ONE FOR EACH)

	Very Important	Important	Somewhat Important	Not at all Important
Family Doctor				
Nurse				
Family				
Friend				
Co-worker				
Radio/T.V.				
Literature/Pamphlet				
Other: Specify				

9. With regard to cervical cancer screening, how important is it to you to have your pap test done by (CHECK ONE)

☐ Female provider (3)
☐ Male provider (2)
☐ Doesn't matter (1)

10. With regard for cervical cancer screening, how important is it to you to have your pap test done by (CHECK ONE)

☐ Physician (5)
☐ Nurse practitioner (4)
☐ Physician Assistant (3)
☐ Registered Nurse (2)
☐ Doesn't matter (1)

11. How often do you feel you need a pap smear exam?

☐ Yearly (5)
☐ every 2 years (4)
☐ every 3 years (3)
☐ every 4 years (2)
☐ never (1)

12. In the next year, how likely are you to have a pap smear exam?

☐ Definitely (5)
☐ Very likely (4)
☐ Somewhat likely (3)
☐ Not very likely (2)
☐ Not at all likely (1)

Do you have questions about this study?

If you have questions regarding your rights as a research subject, you may contact:

1. Marlene Glaesmann, Director of Rural Health
906 293-8181
2. Georgia Padonu, PhD. Michigan State University
517 355-5792
3. Human Subjects, Michigan State University
517 355-2180

Thank you very much.

APPENDIX B

Cervical Cancer Screening Chart Audit Form

Cervical Cancer Screening Chart Audit Form

Clinic Site: _____

Date: _____

Chart Number: _____

Birth date: _____

Age: _____

Use of Tribal Health Clinic since 1993: Y N

Total number of medical visits since 1993: _____

Hysterectomy Y N

Chart Audit

LAB SECTION		
Date of last pap	____ / ____ / ____	
Results of pap:		
Follow up Needed:	Yes	No
Total Number of pap exams since 1993?	_____	
1993	Yes	No
1994	Yes	No
1995	Yes	No
1996	Yes	No

PCC (Patient Care Component)		
Date of last pap	____ / ____ / ____	
Results of pap:		
Follow up Needed:	Yes	No
Total Number of pap exams since 1993?	_____	

1993	Yes	No
1994	Yes	No
1995	Yes	No
1996	Yes	No
Health Care Summary		
Date of last pap	/ /	
Results of pap:		
Follow up Needed:	Yes	No
Total Number of pap exams since 1993?	_____	
1993	Yes	No
1994	Yes	No
1995	Yes	No
1996	Yes	No

Other Reports		
Date of last pap	/ /	
Results of pap		
Follow up needed	Yes	No
Total number of pap exams since 1993?	_____	
1993	Yes	No
1994	Yes	No

1995	Yes	No
1996	Yes	No

Data Base		
Date of last pap	/ /	
Results of pap		
Follow up needed	Yes	No
Total number of pap exams since 1993?		
1993	Yes	No
1994	Yes	No
1995	Yes	No
1996	Yes	No

APPENDIX C

PART 1. Who is offering this Project?

You are being asked to be part of a research project. This is a project being conducted by:

The Sault Ste. Marie Tribe of Chippewa Indians Rural Health (Laura Frisch, RN); Michigan State University (Laura Frisch, Graduate Student); (Georgia Padonu, PhD)

The association of social influences with pap smear screening frequency rates (Laura Frisch);

PART 2. What's the purpose of the project?

The purpose of this project is to explore the association between pap smear frequency and social influences (cues to action) in a select population of Sault Ste. Marie Tribe of Chippewa Indians women, aged 40 years and older.

You will be asked questions about how many pap smears you have had in the last 4 years, and if social influences (family, friends, co-workers, healthcare providers) influenced your decision to be or not to be screened for cervical cancer.

PART 3. How long do you want me to take part in the project? [How long will my participation in the study last?]

This consent form and questionnaire will take approx. 10 minutes. You may refuse to answer any questions you wish, and make quit taking part in the questionnaire at any time.

PART 4. Do I have to be part of the project? [What will happen if I say "No" to this study?]

No. You do not have to be part of this project. Taking part in this project is your choice. You may stop being part of the project at any time.

The content of this consent form has been explained to me. I have had the opportunity to ask questions about this project and understand that I can ask questions at any time.

Include my information in the Association of social influences with pap smear screening frequency rates Database
 Yes / No

PLEASE PRINT:

Client Name:

Street Address:

City, State, and Zip Code:

Phone Number(s):

FOR THE PERSON EXPLAINING THE CONSENT FORM, PLEASE PRINT AND SIGN:

Signature

Date

APPENDIX D

MICHIGAN STATE UNIVERSITY

December 29, 1997

FAX TRANSMITTAL MEMO	
TO: LAURA FRISCH	NO. OF PAGES 3
DEPT: UCRINS	
FROM: UCRINS	
CO: UCRINS	
FAX #: 906-477-3056	
PHONE: 355-2180	
FAX #: 355-2180	
Post-it brand fax transmittal memo 7871	

TO: Georgia Padonu
A230 Life Sciences Building

RE: IRB#: 97-792
TITLE: THE ASSOCIATION OF SOCIAL INFLUENCES WITH PAP
SMEAR SCREENING FREQUENCY RATES
REVISION REQUESTED: 12/10/97
CATEGORY: 1-C
APPROVAL DATE: 11/19/97

The University Committee on Research Involving Human Subjects' (UCRHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRHS approved this project and any revisions listed above.

RENEWAL: UCRHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.



OFFICE OF RESEARCH AND GRADUATE STUDIES

University Committee on
Research Involving
Human Subjects
(UCRHS)

Michigan State University
246 Administration Building
East Lansing, Michigan
48824-1046

517/255-2180
FAX: 517/432-1171

**PROBLEMS/
CHANGES:** Should either of the following arise during the course of the work, investigators must notify UCRHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517) 355-2180 or FAX (517) 432-1171.

Sincerely,

David E. Wright, Ph.D.
UCRHS Chair

DEW:bed

cc: Laura Frisch

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