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## The relative importance of barriers to cervical cancer screening in older women : A review of 140 women and their pap smear providers

Nerida Beaumont  
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**The relative importance of barriers to cervical cancer screening in older women: A review of 140 women and their Pap smear providers.**

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Bachelor of Arts (Honours).

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This thesis is presented in partial fulfillment  
of the requirements for the degree of  
Master of Psychology (Clinical).

Edith Cowan University, July 1999.

## USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

## **Abstract**

Cervical cancer remains a significant cause of death in women. There is a notable age related decrease in levels of screening and women aged over 50 years present with later, more invasive disease. One hundred and forty women aged between 50 and 69 years ( $M = 58.21$  years) and 23 Pap smear providers completed a Cervical Cancer Screening Questionnaire designed to identify the relative importance of barriers to attendance for cervical screening, as well as providers' own barriers and issues. Responsibility for health, familiarity with, and ratings of the usefulness of, Pap smears were the major dimensions along which regular and non-regular attenders differed, supporting the hypothesis. Additionally, women who had regular Pap smears were younger, with higher levels of confidence in their provider, in the ability of the test to detect cervical cancer and in their overall value for the usefulness of the test. The application of the findings of the present study may improve the currently inconsistent promotion of cervical screening to older women. The use of a theoretical framework informed by the Theory of Reasoned Action and Multi-Attribute Utility Theory showed promising results in incorporating the diverse factors involved in participating in preventive health screening. Recommendations are made on the necessity of both targeted and general intervention strategies to increase the uptake of preventive screening by at-risk groups.

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;

(ii) contain any material previously published or written by another person except where due reference is made in the text; or

(iii) contain any defamatory material.

Signed -----

A large black rectangular box redacting the signature of the author.

## **Acknowledgements**

- ❖ Firstly, thanks must go to all the women and health care professionals at the health care sites who devoted their time and energy to participating in this project.
  
- ❖ I would also like to acknowledge the contribution of Gloria Sutherland and the Women's Cancer Screening Service, Health Department of Western Australia, for the provision of Federal and State Government publications relating to cervical screening.

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**Chapter One: General Introduction.**

## **Overview**

This study aims to determine the relative importance of identified barriers to cervical cancer screening, for older women between 50 and 69 years of age. The importance of Pap smear screening to older women as a group with particular risk is positioned in the context of the field of health prevention and preventive health behaviours. The present research has been designed to incorporate factors identified in diverse research into this area, with the benefits of a structured theoretical framework to interpret the findings. Chapter One outlines the general background of prevention and examines relevant research into cervical cancer. Chapter Two details the methodological framework, study design and aims that comprise the present research.

## **Preface**

### **The Importance of Cervical Cancer Screening: The use of the Papanicolaou Smear test for Early Detection.**

Worldwide, cancer of the cervix is the second most common form of cancer affecting women (Paskett, Carter, Chu, & White, 1990), whilst in Australia cervical cancer remains the fifth most common cause of cancer death in women (Jelfs, 1995). Currently 1000 new cases of cervical cancer are diagnosed in Australia each year (Sutherland, Straton, & Hyndman, 1996) and approximately 350 women die from cancer of the cervix in that same time (Jelfs, 1995). In principle, deaths from cervical cancer are preventable due to the easy detection of the disease in its early stage (Laming, 1995; Guidozi, 1996) through the use of the Papanicolaou (Pap) smear to detect pre-cancerous changes of the cervix and appropriate management of detected abnormalities.

Screening for cervical cancer with the Pap smear procedure has been performed in Australia and around the world since the 1950's (Shield, Daunter, & Wright, 1987). A Pap smear, also known as a Pap test, is a medical procedure that involves the examination of cells taken from the cervix which are treated with the Papanicolaou stain, from which the procedure derives its name. The cells are obtained by inserting a speculum into a woman's vagina and are scraped from the cervical area using a wooden spatula or cotton swab (Shield et al., 1987). Visual microscopic examination of these cells identifies abnormalities that may indicate pre-cancerous changes (Funke & Nicholson, 1993).

The Pap smear procedure is seen as “(an) ideal screening test ... cost effective, acceptable to most patients and adaptable to widespread screening” (Guidozzi, 1996, p. 247) and is widely accepted as an effective cancer prevention mechanism (Blesch & Prohaska, 1991). With the introduction of screening programs significant reductions in deaths from cancer of the cervix have been noted (Peters, Bear, & Thomas, 1989). However, due in part to erratic participation in organised screening, it is estimated that currently fewer than one half of all cases of cervical cancer are being prevented in Australia (Jelfs, 1995; Reid, Simpson, & Britt, 1997). Given the accessible and effective nature of the Pap smear procedure the prominent question is why do some women not attend regularly for screening? In order to examine this question, the Pap smear procedure must be examined in the wider context of prevention in health.

### **Preventive Health and Health Behaviours.**

There are three main areas in the field of prevention, and these relate to the stage of intervention or prevention. The categories include Primary Prevention, which refers to actions taken to avoid disease or injury, or the removal of causes of disease. Abstinence from smoking or maintaining a regular exercise program are examples of primary prevention. Efforts in this area focus upon education rather than upon a therapeutic or diagnostic intervention (Weinstein, 1993). The next level of prevention is referred to as Secondary Prevention, which is predominantly associated with screening or diagnostic investigations intended to identify the precursors of illness in apparently healthy populations. The aim of secondary prevention is to halt or reverse the progress of disease, and this involves the use of both education about the need for prevention services and some form of intervention (Fowler & Gray, 1983). Accordingly, cervical screening *and* treatment for any abnormalities found are secondary prevention measures. The essence of secondary prevention is that actions are taken to identify and treat an illness or injury in its early stages. These actions are termed health protective behaviours, which are defined as, “any behaviour performed by a person, regardless of his/her perceived health status, in order to protect, promote or maintain his/her health whether or not such behaviour is effective to that end” (Sarafino, 1994, p. 170). The Pap smear meets the criteria for a health protective behaviour in that it is a screening measure that allows for the detection of cell changes that have been found to be associated with later cervical cancer (Funke & Nicholson, 1993). Finally, Tertiary Prevention refers to actions that attempt to contain or minimise damage after



the onset of disease. Medications for the relief of chronic pain and palliative care are tertiary level prevention efforts (Bowling, 1997). In summary, Primary prevention efforts are aimed at reducing the incidence of a disease or illness; Secondary prevention efforts attempt to reduce mortality and progression of disease and Tertiary prevention results in a reduction of the extent of disability consequent upon an illness.

### **Current Health Policy and Secondary Prevention.**

Economic and epidemiological policies are increasingly focusing upon secondary prevention attempts, most notably preventive screening, as a way to reduce disease incidence, and the high costs associated with treating advanced illness (Cervical Cancer Prevention Taskforce, 1991). This is partly a response to the diverse nature of risk factors and presentations of disease, especially cancer. Aside from the assessment of family and physical risk factors such as family history and the institution of food-related preventive strategies such as the lowering of dietary fats, the best form of prevention for cancers of the breast and cervix is secondary prevention, or mammography and Pap smears respectively. Both of these procedures have been proven effective in reducing deaths from cancer in systematic, randomised clinical trials (Paskett & Rimer, 1995). Such policy shifts parallel the encouraging number of physicians becoming increasingly interested in prevention (Sarafino, 1994). It must be noted however that studies of physician performance in recommending preventive screening have shown low rates of offering tests (Kiernan & Frame, 1996). The Australian Federal Government has introduced quantifiable health targets with a number of preventable diseases: for cervical cancer the goal is to reduce incidence rates to an age-standardised incidence of three in 100 000. The current statistic is 11 in 100 000 (Ward, 1997). Such health targets are dependent upon an increase in the uptake of offered preventive screening services.

### **Mammography: Secondary Prevention and Disease Reduction.**

The area of mammography and breast cancer is an example of how the establishment of a federally organised and funded prevention program can achieve significant reductions in mortality and morbidity from preventable diseases. Breast cancer is currently the second leading cause of death in women (Burnett, Steakley, & Tefft, 1995) and is the leading type of cancer found in women (Helzlsouer, 1996). Recent efforts to increase the number of women being screened every two years

with mammography, and to decrease the number of deaths from breast cancer have been instituted by an Australian federal breast cancer prevention body, BreastScreen (Glasziou, Woodward & Mahon, 1995). This has involved identifying research priorities and increasing compliance with recommendations for screening and follow-up (Marlin, Redman, Clarke, Clark, & Boyle, 1996), especially for those women with the greatest risk: women aged 50 years and over. The implementation of widespread intervention strategies, including media campaigns and the placement of mammography screening on the Medical Benefits Scheme to make screening less expensive and more accessible, have shown promising rates of detection of earlier, less invasive cancers (Glasziou et al., 1995). Early detection of disease is associated with the best prognosis for the successful treatment of cancer (Mandelblatt, Traxler, Lakin, Kanetsky, & Kao, 1993). There is clear evidence of the benefits of screening leading to lower rates of mortality: estimates range from one-third to one-half reduction in deaths from breast cancer (Glasziou et al., 1995; Helzlsouer, 1996) with regular mammography screening. With the success of such organised secondary prevention programs for breast cancer, interest is turning to other preventive health screening tests that have the ability to reduce cancer incidence and mortality. Currently the Pap smear and mammography are the only empirically validated cancer prevention screening techniques (Eardley et al., 1985; Paskett & Rimer, 1995).

### **Background to Cervical Cancer Screening Services.**

The best results in reducing morbidity and mortality from invasive cervical cancer have been in those countries that have developed a comprehensive approach to screening emphasising the inclusion of a high proportion of eligible women. The screening programs in the Nordic countries, Canada and Italy are examples of successful, organised screening efforts (Guidozzi, 1996). While there is continuing worldwide controversy over the recommended length of interval between screens, there is widespread agreement that the ideal interval is between one and three years (Boyce, Fruchter, Romanzi, Sillman, & Maiman, 1990). International studies reveal that three yearly screening has the potential to prevent 91% of cases of cervical cancer (Guidozzi, 1996; Hakama, Miller & Day, 1986). The current recommendation in Australia is for two yearly screening for all women from one to two years after the onset of sexual intercourse, or age 18, until the age of 70 for women with an intact uterus (Cervical Cancer Prevention Taskforce, 1991).

## **The Role of Screening in Cervical Cancer Prevention**

In a recent study of the beliefs Australians hold concerning cancer, 81% of respondents in a study of 3527 men and women across Australia indicated that they thought that there were steps people could take to reduce their risk of cancer (Hill, White, Borland, & Cockburn, 1991). Despite repeated research findings of widespread knowledge of preventive health behaviours there remains significant mortality attached to many preventable diseases, including preventable cancers (Paskett & Rimer, 1995). An extensive range of studies have pointed to the important role of screening practices in cervical cancer and that regular screening alone can reduce the risk of cancer development (Laming, 1995; Lurie, Margolis, McGovern, Mink, & Slater, 1997). A study of 191 women aged 75 years and under with matched controls found women screened only once had a reduction in cancer risk of 70% when compared to women who had never been screened (Palli, Carli, Venturini, Piazzesi, & Buiatti, 1990). This reduction in cancer risk was even greater for those women screened two or more times. The researchers concluded that there was a strong protective effect against developing invasive cervical cancer with regular involvement in organised screening (Palli et al., 1990). With clear evidence of the benefits of Pap smears, the issue of non-participation in preventive screening must be addressed as a matter of urgency.

There is substantial evidence that screening programs, when properly organised and implemented, can achieve sizeable reductions in both the incidence of cervical cancer, as well as reductions in mortality resulting from cancer of the cervix (Guidozzi, 1996). However, a large-scale study of organised screening programs across Europe indicated that “achieving a wide coverage of ages was a more important determinant of risk reduction than the frequency of screening” (Austoker, 1994, cited in Guidozzi, 1996, p. 248). The implications of these findings are that, despite on-going debate over the optimum interval between Pap smears, recruiting at-risk groups to attend for screening is more effective in achieving disease reduction than simply having women who attend for Pap smears screened more often.

### **At-Risk Groups: Recruitment and Issues.**

There is an emerging consensus in the literature in this field that certain groups within the wider population are screened less frequently and are consequently at greater risk of developing cancer of the cervix (Peters et al., 1989). Broadly, the groups of women who have been identified as

facing increased risk include rural women, women from a non-English speaking background, women from lower socio-economic circumstances and older women (Straton, 1994; West Australian Cervical Cancer Prevention Program, 1996).

The results of a large-scale Australian study conducted by Hill et al. (1991) found results that consistently emerge in similar research, where the proportion of women having regular Pap smears steadily decreased as the age of their sample increased. Hill et al. (1991) report that the highest proportion of women who attend regularly for screening are aged between 20 and 39 years of age. These findings are particularly serious given that the incidence of cervical cancer is highest in older women. It is widely accepted that those women who are at the highest risk of developing cervical cancer are the least likely to be screened (Cervical Cancer Prevention Taskforce, 1991; Jelfs, 1995; Sutherland, 1992b).

Additionally, the identification of smears that show invasive cancer show a marked age related rise: older women present with later, advanced forms of cervical cancer and consequently have lower survival rates (Gillam, 1991). The highest incidence rates of cervical cancer are found in women aged from 60 to 69 years (Sutherland, 1992a), many of whom have never had a Pap smear or who have had a Pap smear only infrequently (Canadian Taskforce on the Periodic Health Exam, 1994). Seventy-seven percent of the women who died from cervical cancer in 1990 were aged more than 50 years; and of women with invasive cancer those aged over 50 years were only half as likely to have been screened than those who were aged less than 50 years (Gillam, 1991). Women aged over 50 years have a particularly low screening rate: they remain the least screened group (Blesch & Prohaska, 1991; Hennig & Knowles, 1990; Straton, 1994). The success of a cervical screening program depends to a great extent on the ability of the program to reach women most at risk of cervical cancer. In order to understand the factors influencing attendance for screening in women 50 to 69 years of age, it is necessary firstly to examine the general barriers to participation in preventive screening, in addition to the barriers related specifically to the issue of screening for cervical cancer with older women.

## **Participation Issues in Preventive Screening.**

Commonly, whether or not a person attends for preventive screening is dependent upon several factors: these include an individual's perception of their risk of developing a disease, the value of the health protective behaviour in reducing the threat of disease and any barriers to performing the behaviour (Sarafino, 1994). Fundamentally, a lack of awareness of the preventive nature of screening techniques impedes the use of such services. For instance, where women are unaware of the preventive nature of the Pap smear it is unlikely that they will present for screening: several studies have found evidence for this lack of awareness impeding screening for cervical cancer (Gordon & Fatovich, 1990).

Another aspect of prevention with diseases that may not be immediately obvious, such as cancer of the cervix, is that there may be little immediate incentive to practice the health behaviour in the absence of symptoms. Certainly "many healthful behaviours are less pleasurable than their unhealthful alternatives" (Sarafino, 1994, p. 177). As a result of the generally low uptake rates for cervical screening, a substantial proportion of the research in this area has focused upon identifying women's attitudes to cervical cancer screening and hence cognitive and motivational factors that either hinder or promote attendance for regular screening.

## **Factors Affecting Attendance for Cervical Cancer Screening.**

Strategies to facilitate the inclusion of women who do not attend regularly for screening require an understanding of the characteristics of these women, and the barriers to their participation (Peters et al., 1989). Straton (1994), in a meta-analysis of the literature, divides these factors into the following categories; demographic characteristics, social and psychological factors including knowledge, and medical care variables: most notably the behaviour of the general practitioner in offering preventive services such as Pap smears. Below are presented the various research findings on the factors that are acknowledged as contributing to a women's decision on whether or not to participate in cervical screening.

### **Demographic Characteristics.**

Across studies in the United States, the United Kingdom and Australia several demographic characteristics have been identified that are consistently found to be associated with lower levels of screening. These characteristics include age where, as discussed previously, trends of lower participation are found with increasing age (Jelfs, 1995; Hill et al., 1991). Socio-economic status has been strongly researched, particularly in the United States, where women from lower socio-economic backgrounds have been found to have the lowest participation levels in preventive screening (Mandelblatt et al., 1993). Similar results have been noted for social class and screening in Britain (Laming, 1995), and with women from non-English speaking backgrounds and Aboriginal women in Australia (West Australian Cervical Cancer Prevention Program, 1996). A Western Australian survey of women and cervical cancer found significantly lower screening rates for rural women's participation in screening (Straton, Holman, & Edwards, 1993). Overall, the generally fixed characteristics of increased age, rural location, socio-economic status and minority ethnic background are predictors of lower than recommended levels of screening, and associated higher risk of invasive cancer of the cervix.

### **Social and Psychological Barriers.**

There is a consensus that emotional, social and psychological factors inhibit participation in preventive screening (Blesch & Prohaska, 1991; Cervical Cancer Prevention Taskforce, 1991). The inherently invasive nature of the Pap smear procedure has led to a consistent finding in research conducted in this field: the perception of negative aspects attendant on the procedure such as perceptions of discomfort, fear of the pain of the procedure and embarrassment emerge as significant barriers to the uptake of cervical cancer screening and to compliance with recommended screening intervals (Mamon et al., 1990; Peters et al., 1989).

Variables such as attitudes and opinions about the screening procedure and towards participation in preventive health programs are seen as pivotal to the issue of non-participation in cervical cancer screening. From efforts to conceptualise embarrassment (Burnett et al., 1995) and other aspects of screening such as discomfort (Mamon et al., 1990) the focus of current research into the uptake of Pap smears has seen a shift towards examining the barriers to screening. This has centered upon the fears held by women about the Pap smear procedure. Significant fears of

contracting cervical cancer or a perception of increased risk of developing the disease have been found to both facilitate and hinder attendance for Pap smears (White, 1995). One criticism of research into barriers to screening is that the issue of fear about the procedure needs to be made distinct from fears connected to disease (Gillam, 1991).

However, despite such findings, there have been no real advances made in understanding how women who are regularly screened overcome these barriers to participation. Interest is turning to those factors that may be crucial to attendance for Pap smear screening despite the above mentioned barriers: responsibility for health has been posited as one mechanism that requires more investigation (Hill, Gardner, & Rassaby, 1985).

### **Knowledge Variables.**

One of the key aspects of participation in screening relates to knowledge, or more specifically the level of awareness of the Pap smear and its function, in the target population. There are two components, namely knowledge of who needs to be screened and how often (Straton, 1994). This is of fundamental importance: if women are not aware of the need for a Pap smear, or when to attend, they are unlikely to regularly participate in screening (Gordon & Fatovich, 1990).

Women's general knowledge of the Pap smear and its function has been seen as important to Pap smear attendance yet specific information about women's needs for knowledge and education has been lacking. To illustrate this point, it has been concluded that the provision of more information to older women may increase participation in screening services (McKenna, Speers, Mallin, & Warnecke, 1992) however the limited efficacy of the general education intervention programs currently in use indicates a requirement for targeted interventions to address women's specific needs and concerns (Straton, 1994). Such requirements may well vary among different at-risk groups.

While several studies have indicated that 90% of women surveyed in Australia and New Zealand are aware of the Pap smear procedure (Gordon & Fatovich, 1990; Hill et al., 1985) there is evidence to suggest that the majority of women see the Pap smear as a test to detect cancer, and remain wholly unaware of the ability of the Pap smear to detect pre-cancerous changes associated with the later development of cervical cancer (Cervical Cancer Prevention Taskforce, 1991; Gordon & Fatovich, 1990).

Such findings highlight the need for research to assess the knowledge women have about the Pap smear procedure, with women who are at increased risk in particular, which will in turn yield specific recommendations about the provision of information to remedy the low rates of participation in cervical screening. This is demonstrated by recent Australian research into cervical cancer screening with rural women in a hospital setting by Ruge, Lee and Brown (1995). The findings of this study indicated that many rural women believe that all cancers are fatal and incurable, and have a low level of awareness of the value of preventive screening. These attitudes appear distinct to certain segments of the population and may not be appropriate targets for general interventions. Accordingly, in order to address the concerns of specific groups there has been a shift in more recent research to focus upon groups of interest, especially those women most at risk of cervical cancer such as older women or women from non-English speaking backgrounds (Mamon et al., 1990; Mandelblatt et al., 1993).

#### **Medical Care Variables.**

Other research has identified several individual components that have emerged as important to the decision to participate in screening. Broadmore, Carr-Gregg and Hutton (1986) and Orbell (1996) found previous experience with Pap smears, or whether the experience of having a Pap smear taken was regarded as positive or negative, to be a predictor of later participation. Specific medical practitioner variables such as the level of confidence a woman has in her Pap smear provider (Hennig & Knowles, 1990) appear to have moderately strong associations with screening rates, especially for older women. Such findings require more investigation to determine how such aspects impact upon participation in screening.

#### **Other Factors.**

The influence of the opinions of significant others on screening beliefs and attendance has also been proposed (Straughn, 1994). That is, the social context of either support for regular screening or a lack of support from friends and family has been posited as a factor in the decision to participate in screening. A belief in the necessity of screening for cervical cancer only in women who are currently sexually active was also found to be prominent in studies of older women and their



attitudes towards Pap smears (Gordon & Fatovich, 1990; Kegeles, Kirscht, Haefner, & Rosenstock, 1965).

Logistic or 'hassle' factors have also been identified by several researchers. A large scale study of cervical cancer screening services in Western Australia found that the cost associated with having a Pap smear was an important factor for many women and their participation in screening (Sutherland, 1992b). Similar results have emerged in studies of women and the adequacy of Pap smear screening in the United States (Mamon et al., 1990). Forgetting or not having enough time are often given as reasons for non-participation in screening (Mandelblatt et al., 1993). Concerns have arisen over the validity of such statements and whether such responses are given because they are more acceptable than admitting embarrassment or fear of the procedure (Peters et al., 1989).

For the categories outlined above, there is quite robust evidence of the effects of these different factors upon screening (Blesch & Prohaska, 1991; Broadmore et al., 1986; Burnett et al., 1995; Funke & Nicholson, 1993; Hennig & Knowles, 1990). However, although there is extensive research that has reached a consensus on the various barriers to screening, "it is not clear what contribution each of the various barriers ... makes towards non-participation in screening" (Straton, 1994, p. 16).

In addition to the need for an assessment of the relative contribution of each of these identified barriers there remains a need to examine the dyad that comprises the screening process: both the woman to be screened and the provider of the Pap smear. Despite the emerging importance of medical care and medical practitioner variables as barriers to regular screening, until recently an omission from most research into cervical cancer screening has been the inclusion of the providers of the Pap smears themselves.

### **The Role of Pap Smear Providers.**

In addition to the need for obtaining empirical data on the relative influence of each identified barrier for older women in attending for cervical cancer screening, there are currently moves to target prevention with the providers of screening, most notably with general practitioners. The reasoning behind this move is that of the women who are not being screened, the majority have seen a general practitioner in the previous six months (Sutherland, 1992a). Many older women who visit their general practitioner are not being screened (Sutherland et al., 1996). This indicates missed

opportunities for screening, especially as it is widely accepted that an important influence on older women's participation in cervical screening is recommendation by the family physician (White, 1995). Currently many aspects of health prevention and promotion are focusing attention not only upon the target population of service consumers but also upon the service provider (Clarke, Hill, & Jones, 1997) in recognition of the need to mobilise prevention across the board. With the introduction of a federal program, the 'Organised Approach to the Prevention of Cancer of the Cervix' a stated aim is to "increase participation in routine screening through *communication strategies aimed at women and service providers* [italics added]" (Jelfs, 1995, p. 1).

A recent change at the health care provider level to increase rates of screening was introduced in Britain which places the responsibility for women to be screened with local general practitioners and Pap smear providers (Orbell, 1996). Eardley et al. (1985) suggest that, "(With) a provider-initiated, user-oriented (cervical cancer screening) system...the attributes of the service as well as the women must be taken into account" (p. 957). Similarly, Straton (1994) asserts that given that in Australia more than 75% of all Pap smears are taken in a general practice setting, "recruitment for cervical cancer screening would not be complete without a consideration of the role of the general practitioner" (p. 42).

Previous research into barriers preventing the uptake of cervical screening have indicated the important role of previous Pap smear experience and relationships with health care providers (Burnett et al., 1995; Hennig & Knowles, 1990). It has been found that a high proportion of women are likely to attend for a Pap smear where this is suggested by a general practitioner (Ward, Gordon, & Sanson-Fisher, 1991) and recall of a recommendation for screening by a physician is positively associated with regular attendance for screening (Mamon et al., 1990). Evidence of the importance of including general practitioners in a study of cervical cancer screening also comes from a National Health survey which found that 59% of the general practitioners surveyed reported difficulties in discussing Pap smears with patients (Australian Bureau of Statistics, 1992).

### **Current Research Priorities.**

Research into aspects of cervical screening is prevalent however there is as yet no unified research that has identified the relative importance of these barriers to attendance for preventive screening. There is also little systematic research that addresses the specific barriers at-risk

populations, such as older women, experience in regularly attending for Pap smears. Straton (1994) outlines key areas of study; including a women's knowledge of the test and its function, beliefs about the efficacy of screening and various barriers to screening from logistic factors, to the procedure itself and the implications of test results. Research is needed to conceptualise these features of the decision to have a Pap smear and how they affect participation in cervical screening.

To date, there have been few studies that have examined the contribution of attitudes, test perceptions and knowledge simultaneously, and thus research into this area has been unable to determine the relationship between, or the relative contribution of, each of these factors.

In order to meet the need for more specific, targeted information about the differences that characterise women who attend regularly for screening and those who do not, some indication of the relative importance of these identified factors is required. Establishing a profile of the attitudes and opinions of older women who regularly attend and those who do not will yield specific information about targets that may be of value in encouraging women to become regular attenders. The research to date has characteristically been of a fragmented nature: centering upon one aspect of Pap smears such as embarrassment, and in isolation from the Pap smear provider. This has done little to advance understanding of the interaction and contribution various aspects attendant upon having a Pap smear have to facilitate or hinder regular screening.

The application of such findings to specific at-risk populations is of unquestionable value in disease and mortality reduction (Peters et al., 1989). The use of such information to structure interventions is called for by current Cervical Cancer Screening Guidelines, which state as a main aim the increased participation of women in organised screening. A stated objective of the Guidelines is "to develop and implement recruitment strategies for unscreened and underscreened women in the population" (West Australian Cervical Cancer Prevention Program, 1996, p. 4). In order to successfully target older, underscreened women for Pap smears, research is needed into how the factors associated with having a Pap smear contribute to older women's non-participation in screening. In doing so, information will be made available to structure effective intervention programs to address the specific concerns of this at-risk population.

A related issue is the lack of a unified overriding theoretical framework to interpret the results of the various studies into preventive screening. To date this has limited the applicability of research findings, and the generalisability of findings between studies. Thus the research in this area

has often been fragmented and difficult to apply. The primary aim of the present research is to use a structured theoretical framework to examine the critical factors that contribute to older women's decisions on whether or not to have a Pap smear. The advantages of applying a structured theoretical model to investigate the area of barriers to cervical cancer screening with both women and their providers are that it will allow for the incorporation of all the factors identified so far in diverse studies and provide a profile of the differences between women who do and women who do not attend regularly for Pap smears.

**Chapter Two: Theoretical Frameworks for Studying Health Behaviours.**

## **Overview.**

In order to provide coherence to the current lack of unified research into barriers for cervical screening, it is necessary to detail the evolution of the theories that have been applied to gain an understanding of the factors involved in attendance for health protective behaviours. Until recently, the Health Belief Model, originally developed by Rosenstock in 1966, was the most prominent theoretical framework applied to health decision research. The limitations of this model for understanding compliance and an inability to incorporate diverse factors into a predictive model has led to the application of value expectancy theories, often emerging from economic theory, to understand the relative contribution of the various factors involved in a complex decision, such as whether or not to participate in preventive health screening. Below is presented the background to current theoretical models favoured for the examination of health behaviour decisions.

### **The Health Belief Model.**

Until recently, the majority of research into preventive health behaviours has been informed by the Health Belief Model first proposed by Rosenstock in 1966 (Rosenstock, 1990). The basis of the Health Belief Model is the proposition that the subjective health beliefs held by an individual can affect compliance with recommended health behaviours (Funke & Nicholson, 1993). This model has been applied to research into, variously, health and illness behaviour such as performing breast self-examinations and attending for mammography (Hill et al., 1985) and to the uptake of cholesterol screening (Rosenstock, 1990).

The focus of this model is centred upon cognitive variables and the model contains five elements of people's health beliefs. Health Motivation addresses the extent to which individuals vary in their overall interest in health and in their motivation to look after their health. Perceived Vulnerability measures how individuals vary in their self-rated likelihood of developing a serious health problem which is connected to Perceived Seriousness, or how individuals vary in their ratings of the severity of the consequences of contracting a particular illness or of leaving it untreated. Perceived Costs and Benefits refers to how individuals weigh up the physical, psychological and social costs and benefits of a particular course of action. Finally, Cues to Action examines the reasons people are prompted to attend for screening, such as the presence of disease symptoms (Sarafino, 1994).

Accordingly, the tenets of the Health Belief Model hold that where an individual believes there is a chance of serious illness, or that they are liable to contract a particular illness, believes that the health protective behaviour would be effective in reducing the threat of illness and where the perceived benefits of performing a behaviour outweigh the barriers to the behaviour, it is likely that a health behaviour will be performed (Funke & Nicholson, 1993; Rosenstock, 1990).

Gillam (1991) applied the Health Belief Model to examine the uptake of cervical cancer screening. She outlines several limitations of the model for understanding compliance and providing a model with predictive validity; namely that the model is abstract, with poor definition of terms such as motivation that tend to vary between studies and so limit the generalisability of results.

Additionally, Gillam (1991) acknowledges the tendency of the model to examine the decision to perform a health behaviour without evaluating the relationship of the individual to their health care provider. This is particularly important for groups with an increased reliance upon their provider, such as older women: especially given the finding that many older women visit their general practitioners regularly and yet are not being screened for cervical cancer (Sutherland et al., 1996).

Similar limitations have been noted by other researchers (Hill et al., 1985), who highlight that distinctions between aspects of the decision must be differentiated from each other. Prominently, this criticism reflects the failure of the model to account for the perceived psychological benefits as a category distinct from the perceived medical benefits of performing a health protective behaviour (Savage & Clark, 1996). It is also imperative that fears about a specific disease need to be differentiated from fears about the screening test: the latter is often given as a reason for non-attendance for Pap smear screening (Peters et al., 1989). Overall, “research (with the Health Belief Model) has failed to produce the empirical support necessary to weight key variables: this gives the model little predictive validity” (Gillam, 1994, p. 511). Consequently, this has limited the model’s application to preventive screening behaviours and to an understanding of the contribution of the various factors involved in having a Pap smear upon the decision to attend for screening.

A comparison of several theoretical models of health behaviour was undertaken more than a decade ago. Hill et al. (1985) found that an alternative, value-expectancy model of health behaviour decision making, the Theory of Reasoned Action proposed by Ajzen and Fishbein (1980), was a more parsimonious model when compared to the Health Belief Model and could more fully account for the

diverse factors involved in complex decisions. This has seen a shift towards differing models being applied to research in the area of participation in preventive health screening.

### **Value Expectancy Theories: A Comparison of the Theory of Reasoned Action and Multi-Attribute Utility Theory.**

Value expectancy theories have been growing in popularity as an alternative to the use of the Health Belief Model (Gillam, 1991; Rakowski et al., 1992). The characteristics of value expectancy theories are their relative flexibility; they can be applied to different populations and behaviours, they tend to provide good levels of accuracy and indicate which domains are the most important in personal decisions about certain behaviours (Carter, 1990). Value expectancy theories provide a framework for systematically evaluating the issues and aspects a person may weigh up in deciding whether or not to perform a behaviour (Carter, 1990). There are precedents for the application of value expectancy theories such as the Theory of Reasoned Action and Multi-Attribute Utility theory to preventive health decisions such as mammography (Salazar & de Moor, 1995) and to compliance with treatment for abnormal Pap test results (Paskett et al., 1990). Rakowski et al. (1992) encourage the extension of these value expectancy models to health screening and early detection procedures. The following section presents a comparison of the above-mentioned two value expectancy theories for the investigation of decisions about participation in screening. Each model allows for an increasingly flexible approach to the area under study than does the Health Belief Model, despite some inherent limitations. The benefits and limitations of each model are outlined and an integration of the best features of each model is proposed to overcome some of the problems encountered in research informed solely by either of the above methods.

#### **The Theory of Reasoned Action.**

One value expectancy theory in particular, the Theory of Reasoned Action (Ajzen & Fishbein, 1980), has grown in prevalence in studies into health behaviours (Parker, Manstead, & Stradling, 1995). The Theory of Reasoned Action takes as its base the assumption that human beings tend to be rational and weigh information systematically when making decisions. This includes a contemplation of the consequences and implications of their actions (Ajzen & Fishbein, 1980).



The model can account not only for beliefs about health (as outlined for the Health Belief Model) but also for evaluations of test outcomes, attitudes towards performing the behaviour and subjective norms such as the influence of others, as well as behavioural intention (Hill et al., 1985). In doing so the model can accommodate the effects of the opinions of significant others on an individual's decision to participate in screening. The model can also incorporate the norms of performing such a behaviour within a given population as well as attitudes towards the screening test and possible test outcomes such as an abnormal test result.

In being able to account for such diverse factors, the Theory of Reasoned Action is more suitable than the restrictive Health Belief Model in examining preventive health practices such as cervical screening. This is as it allows for an examination of the decision in relation to the health provider, and includes subjective norms such as the influence of significant others which have both been shown to have an important influence on cervical cancer screening uptake (Straughn, 1994), especially for the population in the present study. Indeed Carter (1990) states that the Theory of Reasoned Action is one of the state-of-the-art models available for identifying the contribution of the various aspects of a complex decision, most notably with health behaviour decisions.

Some limitations of this model must be noted: firstly that implicit in the model is the assumption that attitudes influence behavioural intention. Recent studies have shown only mild to moderate correlations between intention and later performance of a target behaviour (Lippa, 1990). Additionally, the Theory of Reasoned Action can not account for the influence of previous experience with the target behaviour. Research has shown the important impact a previously negative experience with a preventive health behaviour can have on subsequent attendance, most notably with Pap smears (Hennig & Knowles, 1990). Progress in value expectancy theories has been made since the Theory of Reasoned Action was first proposed in 1980. This has led to the emergence of alternative theories such as Multi-Attribute Utility theory to explain how people make important decisions.

### **Multi-Attribute Utility Theory.**

Multi-Attribute Utility theory is derived from economic theory originally developed in the 1950's to understand how consumers made decisions about the products and services they purchased (Carter, Beach, & Inui, 1986; Edwards & Newman, 1986). The theory assumes that a person will

choose an alternative that maximises the value (or 'utility') of a decision. In the case of Pap smear attendance, this involves maximising the preventive value of, and attendance for, screening and minimising associated discomfort or inconvenience. Since its initial development the model has been refined and further developed, and has been applied to health behaviours since the 1970's (Carter, 1990).

The appeal of the Multi-Attribute Utility model is that it breaks a decision down into component parts that account for the decision. The prediction of performance or non-performance of a behaviour is then based on the individual's evaluation of the importance of each of those parts (Paskett et al., 1990). The Multi-Attribute Utility theory is a model-generating theory and is thus able to overcome some of the weaknesses associated with psychosocial approaches such as the Health Belief Model in that it allows for a weighting of key variables. Multi-Attribute theory provides a framework that can also account for a full range of factors including the relationship with a health care provider and previous experience with the target behaviour (Edwards & Newman, 1986). Importantly, Multi-Attribute Utility theory has been used to facilitate the development of interventions that will influence personal decisions (Carter et al., 1986).

One problematic issue with the Multi-Attribute Utility theory is that it tends to be complex and may be difficult to utilise (Paskett et al., 1990). To operationalise the Multi-Attribute Utility theory typically interviews are conducted to determine a large set of possible factors related to the decision. These factors are categorised according to similarity and developed into a hierarchical model. This model serves as the basis of a survey that uses a weighting system to determine which of the factors are most important in the decision making process (Edwards & Newman, 1986). Data collected using the above methodology is then used to determine the relative contributions of identified factors to making a decision. The factors that are determined to be the strongest for or against a decision are then used as a guide in the development of an intervention (Paskett et al., 1990). The predictive accuracy of studies using this theory to understand health behaviour has ranged from 68% to 91% (Salazar & de Moor, 1995). Recently Multi-Attribute Utility theory has been applied to a study of participant barriers to mammography that exemplifies this process.

Salazar and de Moor (1995) conducted a project to identify the factors that contribute to women's decision to participate in mammography screening. The study purposively sampled 36 women via exploratory interviews to detail the various barriers to screening for working women.

These interviews were conducted with the women at their work site and 18 factors emerged as aspects influencing the mammography decision. The next step in the Multi-Attribute Utility process is to arrange the factors hierarchically in order of importance and then to develop a questionnaire that requires respondents to apportion importance 'weights' to each branch of the hierarchy. The respondents in the Salazar and de Moor (1995) study indicated for each factor whether that aspect influenced their decision in a positive (for mammogram) or negative way (against mammogram). In this way Multi-Attribute Utility theory can determine the relative importance of identified barriers.

Despite the value of these theories in accounting for factors involved in health behaviour decisions, limitations are inherent in both models. The Theory of Reasoned Action is limited by an over-reliance upon rational process and attitudes as predictors of behaviour (Lippa, 1990). However, while the Multi-Attribute Utility theory yields comprehensive information about the relative importance of barriers to preventive screening this model also has limitations which are contingent on the complex and time-intensive nature demanded by the operationalisation of the procedure. The complex nature of the Multi-Attribute Utility instrument is such that it requires structured interviews and guidance in responding to the Multi-Attribute Utility survey, limiting the application of the questionnaire to a large, representative sample (Carter et al., 1986). Such factors have led to an over-reliance upon the sampling of small, intact groups in research guided by Multi-Attribute theory, resulting in samples of limited size and a limited generalisability of findings to other populations. Given this limitation an alternative approach is required to increase sample sizes and thus to increase confidence in recommendations resulting from research using such methods.

Given the relevance of both the Theory of Reasoned Action and Multi-Attribute Utility theory to an analysis of health preventive behaviours, and the popularity of both methods in women's preventive health research, the present study will utilise a theoretical framework which draws upon both models to identify the relative importance of identified barriers, rather than to test either model per se. The application of a combination of the two models to investigate health decisions was foreshadowed by Carter (1990).

By integrating the best features of each model, namely the ability of Multi-Attribute Utility theory to generate a model to account for many diverse factors and the application of a less-complex questionnaire structured according to the tenets of the Theory of Reasoned Action, it is expected to overcome the time, cost and sample size restraints posed by complex Multi-Attribute Utility theory

methodology. In doing so, the application of value expectancy theories to health behaviour decisions may be simplified, thereby increasing the scope for research employing this method. The combination of the best features of the two models is also in line with recommendations by Weinstein (1993) to develop an all-encompassing theoretical model to apply to health behaviours.

Perhaps more importantly, the application of a theoretical framework to the understanding of the relative importance of the identified factors to cervical cancer screening will overcome a serious flaw characterising research to date in this area, namely a focus which has relied upon directly asking women for reasons why they do not attend for screening. Aside from the tendency of participants to provide socially acceptable responses, McKenna et al. (1992) found considerable disparity between the reasons women gave for themselves not attending for screening when compared to the reasons women gave as to why other women did not attend for screening. Assessing women via questionnaire on a set of factors removes the need for direct request and/or interviews to identify aspects of the decision.

### **Summary.**

Combining the best attributes of the two models examined above, the Theory of Reasoned Action and Multi-Attribute Utility Theory, will allow for a more comprehensive investigation into the known factors influencing participation in screening than has thus far been possible. This involves simplifying the complex and restrictive initial interview and focus-group approach of the Multi-Attribute model by developing a questionnaire informed by the Theory of Reasoned Action. The use of conventional Multi-Attribute weightings for key variables will remain and analysis will proceed according to Multi-Attribute Utility guidelines. The advantages of this method are primarily flexibility in questionnaire administration in allowing a larger cross-section of the population to be accessed. It will also be possible to integrate the various available research into a set of factors and permit the inclusion of Pap smear providers. Using such a method will allow for a ranking of the relative importance of the identified barriers and so overcome the major flaw characterising research to date into barriers to participation. From an examination of the available literature and the approach enabled by the combined features of the two value expectancy methods, it is proposed to investigate the following research questions.

### **Study Aims and Research Questions.**

The primary aim of the current study is to use a structured theoretical approach to explore the critical factors which contribute to older women's decisions to participate in cervical screening and to investigate the beliefs held by the providers of Pap smears to these women. Several research questions are proposed.

Research Question One: To determine the relative importance of identified barriers inhibiting women aged 50 to 69 years from complying with accepted recommendations for cervical cancer screening.

Research Question Two: To describe predictors that differentiate persons who regularly attend for Pap smears, from those who do not attend regularly, and

Research Question Three: To assess the barriers Pap smear providers perceive to screening older women for cervical cancer.

It is expected that there will be different ratings of the factors involved in the decision to participate in Pap smear screening that will emerge between women who attend regularly for Pap smears and those women who do not. Ranking of the rated factors will allow for a comparison of the two groups under study in the present research. It is predicted that regular attenders will score more highly on those positive factors associated with Pap smear attendance (such as confidence in their general practitioner, confidence in test accuracy and feeling responsible for their health) and lower on those factors that are negatively associated with a Pap smear (such as discomfort or dislike of the procedure). The opposite pattern is expected in non-regular attenders.

## **Chapter Three: Method**

## Participants.

Three hundred and ten questionnaires were distributed to community health clinics, general practices and private hospitals from a range of sites covering the metropolitan area of Perth, Western Australia from Fremantle to Armadale and from Perth city to Joondalup, to ensure an adequate representation of provider services and participants drawn from across varying socio-economic regions. For a more complete discussion of the distribution of questionnaires and choice of provider sites please refer to the Procedure. From 310 questionnaires distributed to the provider sites, 143 questionnaires were returned, yielding a response rate of 46.12%.

**Women Participants.** One hundred and forty-three questionnaires were returned from older women accessed through the provider sites. Of these, three were excluded from the sample: two respondents indicated that they had had full hysterectomies more than ten years previously and one respondent was aged 48 and thus outside the age parameters of 50 to 69 years for the current study. One hundred and forty responses were entered into the analysis. The mean age of the sample was 58.21 years (SD = 5.89).

**Pap Smear Provider Participants.** Additionally 23 Pap smear providers, a group comprising general practitioners and nurses, completed the Pap Smear Provider Form of the Cervical Cancer Screening Questionnaire. From the original 40 questionnaires distributed the response rate was 57.50%. The majority of the respondents were general practitioners (N = 17) and the remaining participants (N = 6) were nurses.

## Questionnaires.

**Part A - Women's Form.** Traditional Multi-Attribute Utility modeling techniques require an initial intensive interview and focus group process to 'explode' all the possible aspects of a particular decision (Carter, Beach & Inui, 1986; Paskett, Carter, Chu & White, 1990; Salazar & de Moor, 1995). However for the purposes of the present study, in view of the abundant available research detailing the various barriers to the participation of women in cervical cancer screening, but not the relative importance of the different barriers, this step was rendered unnecessary. In addition to Federal and State Government screening guidelines and cancer information publications, current research that outlined the various aspects attendant upon having a Pap smear provided the basis for a questionnaire to examine both the positive and negative factors involved in making a decision whether or not to attend for Pap smear screening (hereon referred to as the Pap smear decision).

Accordingly a core set of knowledge and behaviour questions were drawn from recent studies into cervical cancer screening barriers (Hennig & Knowles, 1990; Hill et al., 1985; Mamon et al., 1990; Peters et al., 1989; Straton, 1994; Straughn, 1994). These questions covered beliefs from the major categories of factors connected to Pap smear behaviour: Social and Psychological Factors, Knowledge, Medical Care Variables and other factors, as outlined in Chapter One of the Introduction. Sixteen questions were constructed from the barriers that have consistently emerged as significant issues in studies of factors associated with attendance for Pap smears. The factors are; the accuracy of the Pap smear, the ability of the test to detect precancerous changes, level of confidence in their general practitioner, fear of being diagnosed with cervical cancer, level of difficulty arranging to have a Pap smear, the discomfort involved in having a Pap smear, dislike of the Pap smear procedure, the expense of having a Pap smear, familiarity with the test, the opinions of family, and of friends, feeling responsible for their health, their risk of having cervical cancer, the time involved in having a Pap smear, fear of having to receive treatment for cervical cancer and the usefulness of the procedure in detecting precancerous changes. The question statements were constructed from each factor, for example the stated barrier 'The cost involved in attending for a Pap smear' was transformed to the question, 'Do you think having a Pap smear is expensive?'

The 16 questions incorporate both the positive and negative aspects of the decision to have a Pap smear. In this way it is possible to discern both the facilitating and blocking aspects of the factors involved in the Pap smear decision. This is consistent with the conventional procedure for both Multi-Attribute Utility theory and Theory of Reasoned Action-based questionnaires from derived content (Carter, 1990; Carter, Beach, & Inui, 1986). The questionnaire statements were constructed to represent perceived positive aspects of having a Pap smear, or Pros, for example 'Do you feel the Pap smear is a useful procedure?' in addition to the perceived negative aspects associated with Pap smear behaviour, or Cons, such as 'Are you afraid that if you have a Pap smear you may be diagnosed with cancer?'. Additionally situational factors associated with participation in screening such as the time taken to have a Pap smear and the cost of the procedure (barriers) as well as related factors that may increase the likelihood of obtaining a Pap smear, such as responsibility for health and confidence in one's health care provider, were included and transformed to question statements as outlined above.



Because the value expectancy model comprises both the *valence* of an aspect of the decision, that is whether the aspect is a Pro or a Con, and a *value*, or how important that factor is to the decision process, it was necessary to structure the questionnaire in two separate sections.

Part One determined how positive or negative each aspect was on a 10-point scale to give the valence for that factor. The questions in Part Two were structured to allow a determination of how important this factor was to the Pap smear decision on a 10-point scale, shown overleaf. This resulted in a questionnaire of two parts of 16 questions each or 32 questions in total, yielding a value and a valence for each of the 16 identified barriers. All items were worded to fit a 10-point rating scale. For all questions in Part One of the questionnaire the items were worded to fit a 10-point scale ranging from (1) Not at all to (10) Very. The scale was worded appropriately to each question, as in the question below.

Question: Do you feel that a Pap smear is a useful procedure?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all UsefulVery Useful

Approximately one-half of the questions were reverse scored to counteract the tendency for participants to mark one extreme when responding to questionnaires (Berdie et al., 1986). In these cases the left-hand side of the scale was marked as positive and the far right was negative, illustrated below.

Question: Do you feel it is difficult to arrange to have a Pap smear?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all DifficultVery Difficult

In order to establish the value required in Part Two of the questionnaire the question statements were worded differently, shown in the example provided.

Question: Think about your decision whether or not to have a Pap smear. How important is your view of the usefulness or lack of usefulness of the procedure in making your decision?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all ImportantVery Important

This allowed respondents to give an appraisal of the importance of each specific factor, where the left hand side of the scale was checked to indicate that a specific item was not at all important, to the extreme right which denoted that this aspect was very important. For a full copy of the Cervical Cancer Screening Questionnaire [Women’s Form] please refer to Appendix A.

**Part B - The Pap Smear Provider Form.** A complementary questionnaire was developed for Pap smear providers and this was constructed by writing a combination of forced choice and open-ended questions to access a wide amount of information relevant to screening older women and aspects of the screening process. The inclusion of questions was made on the basis of current research recommendations that have highlighted the need for more information on general practitioner’s own barriers to screening older women, their rate of recommending Pap smears and the general level of information provided to general practitioners about the differing aspects of screening for cervical cancer in older women (Ward et al., 1991).

The questions were thus constructed to provide indices on the following important aspects of Pap smear provider’s backgrounds. The questions requested that Pap smear providers indicate the factors that they perceive as inhibiting older women from attending for screening, and then to rate these factors in order of importance. This provided information on those factors that general practitioners see as the reason why older women do not attend regularly for Pap smears. Pap smear providers were also asked to indicate the factors they themselves faced in screening older women, and secondly to rate these in order of importance. This yielded important information about the relative barriers faced by general practitioners in performing Pap smears on older women. The remaining questions asked respondents to indicate the proportion of women in their practice aged 50 to 69 years that they had seen over the previous year to whom they had recommended having a Pap smear, what influenced their decision to recommend a Pap smear to their older female patients, and how many of the women recommended to have a Pap smear actually attended for screening.

Additionally Pap smear providers were required to indicate their level of satisfaction with the provision of information regarding taking Pap smears from older women and space was allowed for any other comments. Please refer to Appendix B for the complete Cervical Cancer Screening Questionnaire [Pap Smear Provider Form].

**Scoring the Questionnaire.** For the Women's Form of the Cervical Cancer Screening Questionnaire, initially all reverse scored questions in Part One of the questionnaire were reverted to the 10-point scale where the left side of scale was negative and the right, positive. For Part One, as illustrated on the previous pages, the 10-point scale from Not at All to Very was given numerical values for subsequent analyses. The scale was numbered from -5 (Not at All) to 5 (Very), where the left side of the scale denoted a factor that was a negative influence on the Pap smear decision, and the right hand side indicated a very positive factor. Part Two (Value) responses were scored from 1 (far left of scale) to 10 (far right of scale), where one indicates a factor that is not important to the Pap smear decision, and 10 indicates a very important factor. All scores were entered as whole numbers into a Statistical Package for the Social Sciences (SPSSx) version 7.5 data set

It was necessary to transform the scores from the two parts of the questionnaire into a combined or utility score. The utility score represents the overall value for each aspect of the Pap smear decision. The valence (Part One) and value (Part Two) components were calculated according the following formula, in order to convert the raw scores to utility scores.

$$U = (Vl \times Va) / 50$$

Where

U = Utility score.

Vl = Valence, or whether each factor has a positive (Pro) or negative (Barrier) influence upon the Pap Smear Decision, and

Va = Value or Importance score for each aspect of the decision.

The scores were divided by 50 in order for the utility score range to fall between -1.00 and 1.00, as is the convention when reporting Multi-Attribute Utility statistics (Carter et al., 1986; Paskett et al., 1990). Scores close to -1.00 are indicative of a strongly negative aspect of the Pap smear

decision, or a Barrier. Scores closer to 1.00 denote a strongly positive influence on Pap smear behaviour and are Pro or facilitating factors. This transformation of scores yielded utility scores for each of the 16 factors of the Pap smear decision as well as an overall utility score, or combined value for the Pap smear decision across all 16 factors. For overall scores, a score greater than zero indicates a positive value for the behaviour, that is the woman feels positively about having a Pap smear. Conversely, a negative score indicates that the negative aspects of the Pap smear decision outweigh the pros and indicate that the woman is unlikely to perform the behaviour: she is unlikely to participate in cervical screening. Both types of scores, that is each of the 16 factor utility scores and the overall utility scores were included for analysis in order to yield information about the relative importance of each of the aspects of the Pap smear decision for both regular and non-regular attenders.

The nature of the Pap Smear Provider form of the Cervical Cancer Screening Questionnaire was such that it did not require any score transformation or coding. Rather the open-ended questions led to a process of preliminary content analysis and tabulation of responses. This is discussed in greater detail in Part Two of Chapter Four, Results.

### **Procedure.**

Before commencing with the current project, ethics approval was sought and granted by the Edith Cowan University Ethics committee.

In order to access both Pap smear providers and women aged between 50 and 69 years the initial step in inviting participation in the study was to contact the Perth, Swan Hills (Armadale/Midland), Osborne Park and Fremantle Divisions of General Practice. The Divisions of General Practice are set up to distribute information to all the general practitioners within their region. These four sites, Perth, Northern Suburbs, Armadale and Fremantle, were chosen to represent a cross section of socio-economic suburbs and to ensure a representative sample from across the metropolitan area. After receiving approval from the Head of the respective Division of General Practice, a letter of invitation was faxed to all the general practitioners within each division. This letter was faxed from the Division premises by Division staff thus ensuring anonymity of general practitioner information within each Division of General Practice. This letter invited general practitioners to be involved in a study of their female clients aged between 50 and 69 years and also

requested that they themselves fill out a short questionnaire for Pap smear providers. Please refer to Appendix C.1 for the letter of invitation. Simultaneous to the process of contacting general practitioners, community health clinics and a large private hospital with two sites within the above regions (Fremantle to Perth, Armadale to Joondalup) were contacted to invite the participation of their older female clients and Pap smear providers in the study. These sites were included in an attempt to counter balance the participants gained through access via the general practitioners, and to access women who were not necessarily attending for personal health reasons.

Ten general practice surgeries responded to the invitation for participation. Additionally, the two sites of a major private hospital, three community health clinics, one women's information and referral centre and Family Planning Western Australia also participated in the present study.

After confirming participant willingness to be included in the project, questionnaire packs (See contents of Appendices A, B and C) were delivered to each site. The questionnaire packs included: the Cervical Cancer Screening Questionnaires [Women and Pap Smear Provider Forms], an explanatory pamphlet to explain the nature of the study and a reply paid addressed envelope to anonymously return both the women and provider forms of the questionnaire.

The questionnaires were distributed by a combination of the following methods: 100 questionnaires (Women's Form) were mailed to eligible women aged between 50 and 69 years directly from a participating general practitioner's patient list. This involved instructions to the secretarial staff at the surgery to address the questionnaire pack, containing all the above, with the names of 100 women, aged between 50 and 69 years of age, chosen randomly from computer generated patient lists. This was to ensure random allocation of questionnaires to patients throughout the local area, and not merely the first 100 patients on the surgery lists.

An alternative form of questionnaire distribution, favoured by Family Planning Western Australia, the Private Hospital and four of the 10 participating general practice surgeries was to 'signpost' the questionnaires in their respective waiting rooms for patients to fill in whilst waiting for an appointment. A flyer was attached to the wall of the waiting room, inviting women aged between 50 and 69 years of age to complete a brief questionnaire about Pap smears. In the remaining clinics and general practices direct requests were made by either secretarial staff and/or general practitioners themselves to women aged within the study requirements. This simply involved the staff member inviting the woman to fill in a brief questionnaire about Pap smears, with no obligation. Each

respondent was assured of confidentiality and given an accompanying explanatory pamphlet that provided information on the area under investigation and the investigator's contact details to discuss any issues arising from participation in the study. The questionnaires were collected over a four week period in October 1998. The questionnaires were returned, collated and entered into a SPSSx version 7.5 database for subsequent analysis.

## **Analysis.**

**Choice of Main Statistical Analysis Procedure.** Currently there is debate in the field of decision-making research as to the most appropriate method of analysing data gained via the Multi-Attribute Utility Model (Funke & Nicholson, 1993). This debate centres over the preferential use of one of two methods: Discriminant Function Analysis and Logistic Regression. The goal of Logistic Regression is to correctly predict a given outcome for individual cases, such as whether an advertising campaign will result in a person switching to a new brand of product. The main use of Logistic Regression is where it is desired to simplify a decision model and *reduce* the number of predictors whilst maintaining strong predictive validity (Tabachnick & Fidell, 1996).

In contrast, Discriminant Function Analysis is designed to predict group membership from a set of predictors or factors, or how well different factors can differentiate between two or more groups. In line with the aims of the present study it was more appropriate to use Discriminant Function Analysis to determine the differences between regular and non-regular attenders on the factors involved in the Pap smear decision. A further benefit of Discriminant Function Analysis is that unequal groups pose no particular problems for the analysis. The use of Discriminant Function Analysis in examining Multi-Attribute Utility Theory data is also recommended by Paskett et al. (1990) and Salazar and de Moor (1995). This will allow comparability of the results of the present study with these other prominent studies in the field of women's health decision making.

**Classification of the Regular and Non-Regular Attender Groups.** The 140 respondents were divided into two groups on the basis of their self-reported regularity of Pap smear attendance and knowledge of the recommended interval between cervical cancer screens. In order to be coded as a 'Regular Attender' it was necessary for the respondent to indicate both regular attendance for Pap smears and to indicate knowledge about the correct recommended screening interval, i.e. that they had regularly attended for a Pap smear yearly or within the last two years. This resulted in two

groups: Regular Attenders (N = 92, M = 57.40 years) and Non-Regular Attenders (N = 48, M = 59.80 years) or those women whose last self reported Pap smear and/or knowledge of the interval were outside of accepted Federal Cervical Cancer Screening guidelines. The combination of these factors to determine group membership was chosen as a response to the generally unreliable nature of self-reported regularity of screening when used as the sole measure (McKenna et al., 1992). No woman reported having never attended for screening. All analysis was conducted between the two groups.

**Chapter Four: Results**



The results section is presented in two parts. Part One reports the findings from an analysis of the 140 women aged between 50 and 69 years who participated in the present study. Part One is further divided into the following subsections: (a) The characteristics of the sample, (b) The characteristics of the Regular and Non-Regular Pap Smear Attenders, (c) A comparison of the Regular and Non-Regular Pap Smear Attenders' values for Cervical Cancer Screening, and (d) Discriminating between the Regular and Non-Regular Pap Smear Attenders.

Part Two details the responses of the 23 Pap smear provider participants, comprising the general practitioners and nurses who completed the Pap Smear Provider Form of the Cervical Cancer Screening Questionnaire.

## **Part One.**

### **Responses of the Women Aged 50-69 Years Old.**

#### **The Characteristics of the Sample.**

To place the findings of the Multi-Attribute Utility model in context, the participating women were asked to indicate who provided their last Pap smear, their level of satisfaction with how their previous Pap smear was conducted, their knowledge about the recommended Pap smear interval and for whom the participants deemed it was most necessary to have a Pap smear. The responses to these contextual questions are presented in Tables 1, 2, 3 and 4 overleaf.

Table 1

Frequency of responses to ‘Who was the Provider of your last Pap smear?’

Response	Frequency	%
General Practitioners	115	82.1
Nurse	3	2.1
Health Clinic	10	7.1
Other	12	8.6
Total	140	100

As can be seen in Table 1, a general practitioner was the provider of the most recent previous Pap smear for the majority (82.1%) of the women in the present study. The remainder had a Pap smear performed by a nurse or at another Pap smear provider site such as a health clinic.

Table 2

Frequency of responses to ‘Please rate your satisfaction with how your most recent Pap smear was conducted’.

Response	Frequency	%
Very Satisfied	85	60.7
Satisfied	33	23.6
Mostly Satisfied	17	12.1
Dissatisfied	4	2.9
Very Dissatisfied	1	0.7
Total	140	100

Table 2 indicates that more than half of the participants rated their most recent Pap smear experience as very satisfactory. Overall, 96.4% of the respondents stated that they were satisfied

with their most recent Pap smear experience. Less than four percent of the sample indicated dissatisfaction with how their previous Pap smear was conducted.

Table 3  
Frequency of responses to ‘How often do you think women need to have a Pap smear?’

Response	Frequency	%
No Response	6	4.3
Yearly	46	32.9
Two Yearly	71	50.7
Three Yearly	7	5.0
As Directed By GP	2	1.4
No Fixed Interval	8	5.7
Total	140	100

The most frequent response to the required interval for Pap smear attendance was for two years, shown above in Table 3. More than 80% of the women correctly indicated the current recommended interval of one or two years between Pap Smears.

Table 4

Frequency of responses to ‘Which group of women do you think most need to have a Pap smear?’

Response	Frequency	%
No response	7	5.0
Sexually active women	16	11.4
Younger women	9	6.4
Women aged > 30 years	22	15.7
Women aged > 50 years	26	18.5
All women	44	31.4
Women with family history	9	6.4
Total	140	100

Table 4 shows that only 30% of the women indicated that all women needed Pap smears, while close to 20% indicated it was most necessary for those women who are sexually active, or with a family history of cervical cancer.

**Characteristics of the Regular and Non-Regular Pap Smear Attenders.**

Given the association of increasing age on decreased Pap smear attendance, analysis of the two age strata [50-59 years, (N = 84) and 60-69 years, (N = 56)] that comprise the present sample was undertaken. Initial independent samples t-test analysis indicated that there were no significant differences between the two groups. This finding was irrespective of attender status on the overall utility scores for the Pap smear decision, indicating that there were no significant differences in the overall value for the Pap smear decision for women in the two age groups. Accordingly, for the following analyses women aged between 50 and 69 years are represented in both the regular and non-regular attender categories.

In order to investigate how women rated each of the aspects of the Pap smear decision, and to identify barriers to regular Pap smear attendance, raw scores from the responses to the 16 questions in the two parts of the Cervical Cancer Screening Questionnaire were transformed into ‘utility’

scores. This procedure is outlined in Chapter Three, Method. For the purposes of the current study utility scores are the mean combined scores of the two parts of the questionnaire responses divided by 50 to ensure scores range from -1.00 to 1.00 in accordance with Multi-Attribute Utility theory reporting convention (Carter, 1990). Scores further from zero indicate a greater value, or utility, for that factor in the Pap smear decision. A negative (-) sign denotes a factor that is perceived to have a negative influence (barrier) on the decision to attend for regular Pap smears. A positive value denotes a factor that encourages attendance for a Pap smear.

The scores were ranked in descending order of utility value for each group, in order to determine the relative importance of each of the factors for the Pap smear decision for both regular and non-regular attenders. The rankings are presented in Table 5.

Table 5

Rank ordered mean utility scores and standard deviations for responses to the Women's Cervical Cancer Questionnaire by regular and non-regular Pap smear attenders.

<u>Regular Attenders</u>			<u>Non-Regular Attenders</u>		
<u>Factor Label</u>	<u>M</u>	<u>SD</u>	<u>Factor Label</u>	<u>M</u>	<u>SD</u>
Responsibility for health	0.80	0.30	Responsibility for Health	0.64	0.32
Usefulness of a PS	0.70	0.36	Confidence in GP	0.50	0.41
Confidence in GP	0.56	0.41	Usefulness of a PS	0.47	0.45
Ability to Detect CC	0.47	0.40	Familiarity with PS	0.31	0.38
Familiarity with PS	0.24	0.31	Ability to Detect CC	0.24	0.46
Accuracy of the PS	0.24	0.47	Difficulty Arranging	0.23	0.28
Family's Opinions	0.23	0.32	Time Taken to Have a PS	0.19	0.40
Diagnosis of CC	0.22	0.37	Risk of Having CC	0.18	0.47
Time Taken to Have a PS	0.21	0.32	Family's Opinions	0.16	0.34
Difficulty Arranging	0.20	0.28	Accuracy	0.14	0.51
Treatment for CC	0.19	0.31	Expense	0.14	0.19
Discomfort of a PS	0.18	0.33	Diagnosis of CC	0.11	0.38
Expense of a PS	0.17	0.24	Treatment for CC	0.09	0.40
Risk of Having CC	0.16	0.42	Friend's Opinions	0.04	0.16
Friend's Opinions	0.12	0.20	Discomfort of a PS	-0.03	0.26
Dislike of the Procedure	-0.11	0.36	Dislike of the Procedure	-0.18	0.41

Note. CC = Cervical cancer; PS = Pap smear; GP = General practitioner. n (Regular Attenders) = 92, n (Non-Regular Attenders) = 48.

Table 5 shows that dislike of the procedure was the only factor rated as a barrier by both groups, however this was the least important factor for both regular and non-regular attenders. Both regular and non-regular groups rated responsibility for health as the most important factor in the decision to have a Pap smear. As a whole, the scores for the various aspects of the Pap smear decision were higher and more positive for the regular attenders when compared to the non-regular attenders.

### **Overall Utility Values for the Regular and Non-Regular Attenders.**

In order to assess whether women who attend regularly for a Pap smear have more strongly positive values overall for the factors associated with cervical screening an Independent samples  $t$ -test was computed for the overall utility scores of regular and non-regular attenders. Assumptions of normality and homogeneity of variance were met, and the result indicated a significant difference between the regular and non-regular attenders:  $t(138) = 2.59, p < .05$ . The mean overall utility score for regular attenders was 0.27 ( $SD = 0.15$ ), compared to 0.20 ( $SD = 0.16$ ) for non-regular attenders.

Despite the higher overall score for regular attenders, both groups had a positive value for the Pap smear decision, indicating that the benefits or Pros of the procedure outweighed the perceived negative aspects and barriers for this population. The scores indicate a favourable attitude towards Pap smears. An overall negative value would have indicated a decreased likelihood of the women in this study attending for cervical screening.

### **Discriminating Between Regular and Non-Regular Attenders.**

Discriminant Function Analysis was performed to determine the relative importance of the individual Pap smear utility scores in discriminating between regular and non-regular attenders and was performed as advocated by Tabachnick and Fidell (1996). Before commencing analysis, the study data was screened for both univariate and multivariate outliers. No outliers were found and all 140 cases were retained for the following analyses. The assumptions of the Discriminant Function Analysis were met, in particular that where unequal groups are used that the size of the smallest group exceeds the number of predictors entered into the analysis (Tabachnick & Fidell, 1996). The utility values of the 16 factors from the questionnaire were entered into the analysis along with the

mean values for one other factor that emerged as important in the research, namely Age ( $\bar{M}$  = 58.12 years). These 17 factors were used in the following analysis.

The Discriminant Function Analysis was used to classify each subject as a Regular or Non-Regular Attender on the basis of their utility scores (Table 6). Overall this analysis correctly classified 77.10% of the participants. Fully 89.10% of the regular attenders were correctly classified compared with 54.20% of the non-regular attenders.

Table 6.

Classification of Pap smear attendance based on predictions in Discriminant Function Analysis.

Actual Group	<u>N</u>	<u>Predicted Group Membership</u>	
		Regular Attender	Non-Regular Attenders
Regular Attenders	92	82 89.10%	10 10.90%
Non-Regular Attenders	48	22 45.80%	26 54.20%

Note. Percent of 'grouped' cases correctly classified = 77.10%.

The univariate F statistics process of the Discriminant Function Analysis allows inspection of the variables that differ between regular and non-regular attenders. This comparison is presented in Table 7.



Table 7.

Comparison of the utility scores with F-ratio and alpha for regular and non-regular attenders.

Factor Label	<u>Regular Attenders</u>		Factor Label	<u>Non-Regular Attenders</u>		<u>F Ratio</u>
	<u>M</u>	<u>SD</u>		<u>M</u>	<u>SD</u>	
Accuracy	0.24	0.47	Accuracy	0.14	0.51	1.38
Ability to detect CC	0.47	0.40	Ability to detect CC	0.24	0.46	9.28**
Confidence in GP	0.56	0.41	Confidence in GP	0.50	0.41	0.52
Diagnosis of CC	0.22	0.37	Diagnosis of CC	0.11	0.38	2.35
Difficulty Arranging	0.20	0.28	Difficulty Arranging	0.23	0.28	0.35
Discomfort	0.18	0.33	Discomfort	-0.03	0.26	0.98
Dislike of PS	-0.11	0.36	Dislike of PS	-0.18	0.41	1.32
Expense	0.17	0.24	Expense	0.14	0.19	0.24
Familiarity	0.24	0.31	Familiarity	0.31	0.38	1.24
Family Opinions	0.23	0.32	Family Opinions	0.16	0.34	1.40
Friend's Opinions	0.12	0.20	Friend's Opinions	0.04	0.16	4.61*
Responsibility for health	0.80	0.30	Responsibility for health	0.64	0.32	8.88*
Risk of CC	0.16	0.42	Risk of CC	0.18	0.47	0.90
Time taken for PS	0.21	0.32	Time taken for PS	0.19	0.40	0.10
Treatment for CC	0.19	0.31	Treatment for CC	0.09	0.40	2.11
Usefulness of PS	0.70	0.36	Usefulness of PS	0.47	0.45	10.70*
*Age	57.38	5.60	Age	59.79	6.16	5.45*

Note. CC = Cervical cancer; PS = Pap smear; GP = General practitioner. \*Scores for Age are not utility values. Mean scores are reported. Range (age) 50 to 69 years. N = 140. df = (1, 138).

\* $p < .05$ , \*\*  $p < .01$ .

Table 7 indicates that regular and non-regular attenders had significantly different utility values for the following five items; feeling responsible for their health, friend's opinions about Pap smears, age, usefulness of the Pap smear and the ability of the Pap smear to detect precancerous changes. However the dimensions that best discriminated between the two groups were, in order of standardised canonical discriminant function coefficients, Familiarity with the Pap Smear Procedure (-0.59), Responsibility for Health (0.55) and the Usefulness of the Pap smear (-0.51). For a complete table of standardised canonical discriminant function coefficients please refer to Appendix D. Overall, the canonical correlation coefficient was moderately high ( $r = 0.55$ ).

### **Summary.**

In summary, the overall scores for the Pap smear decision were positive for both groups. Regular attenders had a significantly higher overall value for the Pap smear decision than non-regular women. Differences between the relative ratings of the 16 factors were apparent between the two groups. Regular attenders had significantly different ratings of the following factors: feeling responsible for their health, friend's opinions about Pap smears, the usefulness of the Pap smear and the ability of the Pap smear to detect cervical cancer, and were younger than non-regular attenders. The factors which were the best predictors for distinguishing between the two groups were ratings of the usefulness of the Pap smear, familiarity with the procedure and responsibility for health. Almost 90% of the regular attenders were correctly classified, compared with less than 55% of non-regular attenders. This indicates a greater variability among the women who do not attend regularly for cervical screening.

## **Part Two.**

### **Pap Smear Provider Responses.**

The aim of the Pap Smear Provider form of the Cervical Cancer Questionnaire was to gather information about various aspects of performing cervical cancer screening procedures for older women. In light of the qualitative nature of this examination of provider views, no analyses other than a preliminary content analysis were performed. Due to space limitations and for clarity the

following tables provide only the most frequently endorsed statements. For the complete tables of all qualitative responses, please refer to Appendix E.

Table 8.

Five most frequent qualitative responses by Pap smear providers on the factors they perceive as inhibiting women aged 50-69 years from attending for Pap smears.

Ranking	Response	Percentage Endorsing
1	Embarrassment	21%
2	The women are not sexually active and the myth that only these women need a PS	17%
3	Women are unaware of the need for a regular PS	17%
4	Women's preference for a female PS provider, where family GP is male	13%
5	Fear of pain/discomfort	8%

Note. Percentages do not add up to 100. For the full table of qualitative responses, please refer to Table E1, Appendix E. PS = Pap smear, GP = General practitioner.

As seen in Table 8, the most frequently endorsed statement given as the reason providers perceive older women do not present for regular Pap smears was embarrassment. More than 30% of the providers in this sample stated that women do not present regularly for cervical cancer screening as they are unaware of the need of screening in general, or that older women believe only those women who are currently sexually active require regular screening.

Table 9 presents the most frequently endorsed barriers providers perceive as inhibiting the screening of older women.

Table 9.

Five most frequent qualitative responses by providers on barriers for providers in screening women aged 50-69 years.

Ranking	Response	Percentage Endorsing
1	Length of consult needed to do a PS on older women	30%
2	No barriers to screening older women	17%
3	If seeing an older female patient for non-sexual consult	13%
4	Embarrassment	8%
5	Getting women to attend scheduled PS appointments	8%

Note. Percentages do not add up to 100. For the full table of qualitative responses, please refer to Table E2, Appendix E. PS = Pap smear.

The most frequently stated barrier for providers themselves in screening older women is the amount of time taken for such a consultation. Close to 20% of the respondents stated that they had no barriers in screening older women but embarrassment and getting women to attend designated appointments were other factors raised.

Table 10.

Three most frequent responses by Pap smear providers on what influences whether they will recommend having a Pap smear to their older female clients.

Ranking	Response	Percentage Endorsing
1	Usually suggest to all women	39%
2	If interval between PS has been longer than 2 years	21%
3	If previous PS results were irregular	10%

Note. Percentages do not add up to 100. For the full table of qualitative responses, please refer to Table E3, Appendix E. PS = Pap smear.

Table 10 indicates that the most common response by the provider participants was that they routinely recommend a Pap smear to all their female clients. Other important factors were time lapsed since the previous Pap smear or where no previous Pap smears had been performed.

Table 11.

Frequency of responses to ‘What proportion of the women aged 50-69 you have seen in the past year have you recommended to have a Pap smear?’.

Response	Frequency	%
All eligible women 50-69 years	14	60.9
Nearly all eligible women 50-69 years	7	30.4
Half of all eligible women 50-69 years	2	8.7
Less than half all eligible women 50-69	0	0
No eligible women 50-69 years.	0	0
Total	23	100

Ninety percent of the providers indicated that they had recommended having a Pap smear to all or nearly all the eligible women in the previous year, in Table 11. All the providers in this study indicated they recommended a Pap smear to at least 50% or more of their eligible older female patients.

Table 12.

Frequency of responses to ‘of the women you recommend to have a Pap smear how many have one?’

Response	Frequency	%
All of the women you recommend	1	4.3
Nearly all the women you recommend	17	73.9
Half of the women you recommend	2	8.7
Less than half of women you recommend	1	4.3
Unknown	2	8.7
Total	23	100

Less than 10% of the providers indicated uncertainty about the level of adherence to Pap smear recommendations, shown above in Table 12. Nearly 80% of the participants indicated that all, or nearly all the women they recommend to have a Pap smear are subsequently screened.

Table 13.

Frequency of responses to ‘Level of satisfaction with information disseminated to Pap smear providers regarding Pap smears and cervical cancer screening recommendations for women aged 50-69 years’.

Response	Frequency	%
Very Satisfied	12	52.2
Satisfied	8	34.8
Mostly Satisfied	3	13.0
Dissatisfied	0	0
Very Dissatisfied	0	0
Total	23	100

No providers indicated dissatisfaction with the level of information provided to them about screening recommendations for older women, in Table 13.

Eight providers responded to an optional question, 'Please comment on any other issues you feel are important for cervical cancer screening'. The issues of the need to keep media advertising high to reinforce the regular screening message and of educating general practitioners and women were proposed as important issues in screening older women for cervical cancer. For a full table of other recommendations, please refer to Table E4, Appendix E.

### **Summary.**

The issues raised by Pap smear providers are diverse. Overall, the providers of Pap smears to older women appear to be satisfied with the level of information given to them about screening procedures and protocols, have high self-reported rates of recommending Pap smears to their patients and compliance with these recommendations. There were also indications of provider awareness of a range of barriers to screening older women for cervical cancer. Provider barriers centred upon the time and nature of the consult needed to perform a Pap smear as well as the importance of getting women to attend designated Pap smear appointments.

**Chapter 5: Discussion**



## **Overview.**

The Discussion section will present the findings of the study in order of the primary research questions. Firstly, the expectation that there will be differences between women who attend regularly for Pap smears and those women who do not will be examined, followed by a presentation of the findings of this study and the implications for addressing the needs of an at-risk population. Suggestions for increasing compliance with Pap smear recommendations and future research are also proffered.

The results of the present study indicated support for the hypothesis that regular attenders would score more highly on, and rate more positively, those factors perceived as positive aspects of having Pap smears, while non-regular attenders would rate perceived negative aspects more strongly. Across all the factors, regular attenders had a significantly higher overall value for the positive aspects associated with having Pap smears, such as ratings of higher levels of confidence in their providers. The findings of significantly different overall values for the Pap smear decision and distinct dimensions along which the two groups differ provide support that differences exist between those women who regularly attend for cervical screening and those who do not.

## **The Relative Importance of Identified Factors to Regular and Non-Regular Attenders.**

In order to establish the relative importance of identified barriers to cervical cancer screening the results of the ratings of each of the 16 factors of the Pap smear decision were rank-ordered. This allowed a determination of those factors most important for and against the decision to have a Pap smear. In providing rankings, those women in the present study who attend regularly for Pap smears can be compared to those women who do not attend regularly for a Pap smear. Presented below is a discussion of those factors that were rated significantly differently by each group, as well as an examination of the top three factors for the Pap smear decision for regular and non-regular attenders.

In constructing a hierarchy of the relative importance of the identified factors to the Pap smear decision the top three factors emerged as the same for both regular and non-regular attenders, although both groups differed in their ratings and order of these factors. Responsibility for health was rated the most important item for both groups. Regular attenders had significantly higher ratings

for this item than had non-regular attenders. The significance of this finding is that a feeling of responsibility for one's own health was the most important factor that positively influenced both regular and non-regular attenders to attend for a Pap smear. The level of responsibility for health was also one of the items that significantly discriminated between the two groups.

Peters et al. (1989) cite evidence indicating that, when compared to regular attenders, women who fail to respond to an offer of a Pap smear or of follow-up after an abnormal Pap smear express less concern over their health, and more dislike of the pelvic exam. Dislike of the procedure was the only factor rated as a barrier by both regular and non-regular attenders. This was however the least important factor in the hierarchy of both groups. It may well be that higher levels of personal responsibility for health moderate the effects of other factors such as dislike of the examination. This may indicate that the longer-term consequences of having a Pap smear, as a preventive health mechanism with the ability to detect precancerous changes, appears to be more influential than the more temporary negative aspects of having a smear taken, for those women who feel responsible for their health. Conversely, the discomfort attendant upon having a Pap smear and other negative factors associated with having a Pap smear were more important in the relative rankings of those women who did not attend regularly for Pap smears, and where lower levels of responsibility for health were indicated.

This finding supports the research of Orbell (1996) who highlights the importance of 'personal moral obligation' as a factor influencing attendance for cervical screening. She argues that this is a factor which is an important omission from current theoretical models of health behaviour and that compliance with a preventive health check may be viewed as behaviour that is consistent with personal values, and not only as a response to a threat of disease. Currently there is a dearth of literature that investigates the concepts of responsibility or moral obligation as promoting factors in preventive health: the findings of the present study indicate a need for further research to elucidate this concept, and more importantly, how to encourage such obligation or responsibility in women who do not regularly attend for preventive health exams.

Importantly, levels of confidence in their general practitioner was rated as more important than the usefulness of the procedure for non-regular attenders. This may indicate that, relative to women who are screened regularly, there appears to be an increased influence of the provider upon attendance by those women who do not have regular Pap smears. In addition to level of

responsibility for health and confidence in their provider, the next most important factor in the Pap smear decision was the usefulness of the procedure, or the ability of a Pap smear to give women useful information about an aspect of their health status. This was rated as the second most important item for regular attenders, and third for non-regularly screened women. There exists significant research that emphasises the role of perceived test efficacy and related attendance for health screening. For instance, as early as 1965, Kegeles et al. found a single factor that differentiated between women who did and women who did not have cervical screening. This was the stated belief in the efficacy of professional detection in the absence of any physical symptoms, or the ability of the Pap smear to detect early precancerous changes. Significantly, this finding was consistent across all levels of education and income groups. More recently Hill et al. (1985) found moderate correlations between the intention to have a Pap smear and a belief in the ability of the test to detect cancer in the early stages.

Aside from usefulness, ratings of the ability of the Pap smear to detect cervical cancer differed significantly between the two groups in the present study, indicating different attitudes to test efficacy held by regular and non-regular attenders. Those women who do not attend for regular cervical screening have a less positive value for the efficacy of Pap smears, as measured by the factors usefulness, the ability of the test to detect precancerous changes and test accuracy, when compared to women who have Pap smears regularly. The emerging importance of this aspect of attitudes about Pap smears provides valuable information for intervention. Promotion of the efficacy and the accuracy of the test is vital to address the education needs of underscreened women.

Interestingly, regularly screened women had significantly higher and more positive ratings of their friend's opinions than did non-regular attenders. Even so, this factor was ranked as the second least important factor for both groups in the present study. Similarly, family opinions of Pap smears were ranked seventh and tenth respectively in the hierarchies of regularly and non-regularly screened women, after the various elements of the screening test itself. This finding is unexpected, given the centrality of contextual norms to the tenets of the Theory of Reasoned Action and Straughn's (1994) assertion that social support for screening has a positive effect upon participation. The answer may lie in the nature of the test itself. It may be that the issue of cervical screening, unlike many other health behaviours, is one that does not engender public discussion, and therefore

there exists less social support for regular Pap smear attendance. This aspect of screening remains to be investigated.

### **Differentiation of Predictors between Regular and Non-Regular Attenders.**

In addition to the rankings of the 16 factors the results of the Discriminant Function Analysis found that three items significantly discriminated between the two groups. Aside from responsibility for health, ratings of the usefulness of the test and familiarity with the Pap test were the best predictors that classified women as either regular or non-regular attenders. Such a finding is of fundamental importance: if a woman is not familiar with the procedure or does not perceive the test to have benefit, regular participation in screening is unlikely.

There are two aspects of knowledge necessary to Pap smear uptake; firstly women must be aware of the Pap smear and its function, and secondly have an awareness of who needs a Pap smear, and how often. Issues related to these aspects have emerged as important in the findings of the current study. This was evidenced both in the different ratings by the two groups and the finding that the usefulness of, and familiarity with, the test were the primary dimensions along which regular and non-regular attenders differed.

Eighty percent of the women in the present study indicated that the required interval between screens was either one or two years. The remaining 20% ranged over responses from no fixed interval, to 'as directed by their general practitioner'. Given this variability, even among well-motivated women, the provision of distinct directives as to the correct interval is clearly necessary. This issue is of primary importance; if women do not know when to present for screening they are unlikely to be screened regularly, even discounting for the effects of the other aspects of making a decision to attend for cervical screening.

Further support is evidenced by the findings of the present study where ratings of familiarity with Pap smears were associated with the regularity of screening: women less familiar with the Pap smear procedure are being screened less regularly. This concurs with the findings of Mamon et al. (1990) who noted that confusion over the purpose of the Pap smear and about the requisite screening interval was associated with significantly lower screening rates. In the present study, not only did non-regular and regular attenders significantly differ in their ratings of the usefulness of the Pap smear, but also in their ratings of its ability to detect precancerous changes. Peters et al. (1989) found

that knowledge about the purpose and accuracy of the test was a powerful predictor of regular screening, along with knowledge of the recommended screening interval.

Currently the provision of organised screening services incorporating a reminder system are being promoted. Straton (1994) points out that in the presence of an efficient reminder system knowledge of the appropriate screening interval is not as crucial. The Cervical Cytology Registry has recently been established in Western Australia, with the aim of sending reminders to women indicating the need for their annual or biennial Pap smear. Progress is being made, however an issue with such registries is that they are only effective if all smears are registered, if women indicate their consent to be placed on the registry and if address and general practitioner details are kept current. It must also be noted that this system is unlikely to include women who have never been screened, or those who have not been screened since the establishment of the register (Sutherland et al., 1996). A concerted effort is needed to reach those women who are not being screened. The necessity of a detailed information campaign to both women and their general practitioners seems warranted, especially for the provision of services to at-risk groups such as women aged over 50 years.

Additionally, there is a need for education that *all* eligible women need regular Pap smears, that is those women who have ever had sexual intercourse and have not had a complete hysterectomy. Only 30% of the women in the current study indicated that all eligible women should be screened. Cogent recommendations to target interventions at older women have suggested a focus that includes knowledge regarding risk factors for cervical cancer and 'appropriate periodicity', or the recommended length of interval between screens, to improve screening rates (Mamon et al., 1990). The findings of the present research lend support to such recommendations and reiterate the call for specific interventions for target groups, in the context of more general intervention to increase the awareness of the need for prevention, and preventive health services. The current strategies to increase rates of screening are those with an individual focus, such as recruiting women from a target population, and attempts to improve the rate and availability of opportunistic screening (Straton, 1994). Opportunistic screening relies upon offering women who are unlikely to have been screened the opportunity to receive a Pap smear, when they present for unrelated services such as a hospital admission (Sutherland et al., 1996). An important aspect of increasing the viability of such opportunistic screening methods is to raise general awareness about the Pap smear in particular, and the importance of preventive screening in general. Such a general intervention is warranted by the

nature of preventive screening; where in the absence of symptoms to highlight the need for examination, education about the need for, and the role of, prevention is crucial to utilisation of these services. This is central to efforts to increase participation in preventive screening, and in order to meet Federal health targets for incidence rates of cervical cancer.

### **Pap Smear Provider Barriers.**

Some discrepancies between provider-rated barriers and those indicated by the women in the present study were noted. For providers, more than 20% indicated that embarrassment was a major barrier to participation of older women. Embarrassment, as measured indirectly by the factor 'dislike of the procedure' was not rated among the most important variables, being ranked last for both regular and non-regular attenders. Confidence in their provider did however emerge in the top three factors for both groups, with non-regular attenders rating confidence above even the usefulness of the procedure. More research is needed to conceptualise how the patient-provider relationship can facilitate attendance for screening by underscreened women.

Less than 17% of the providers indicated that a barrier for women attending for cervical screening was knowledge. This disparity contrasts markedly with the strong research findings of the importance of knowledge about the Pap smear as the primary factor predicting regularity of screening (Peters et al., 1989). Provider education and interventions to address provider awareness of women's knowledge about Pap smears would complement the provision of clear information highlighting the need for, and appropriate interval between, Pap smears for women.

Worldwide, the predominant issues that have emerged as barriers to regular uptake of cervical screening, and other preventive health measures, are a lack of consumer knowledge about screening, including knowledge about the interval between examinations, the need for the procedure as well as the necessity of improving general practitioner referral and/or provision of services (Peters et al., 1989; Vellozzi, Romans, & Rothenberg, 1996). Comments by the providers who participated in the current study concur with the following recommendation that "the challenge lies in motivating general practitioners, in facilitating the process of recruitment for cervical cancer screening in general practice and the acquisition of smear taking skills among general practitioners" (Ward et al., p. 63). The need for ongoing skill development and education for general practitioners must go hand in hand in the recruitment of women to have Pap smears. Oleszkowicz, Kresch, and Painter (1994)

concluded from a study of 5526 women in nine general practice surgeries in regional America that, “there appears to be a need for *education of physicians and patients* [italics added]” (p. 650). An approach that is collaborative, that is one which focuses upon both the women in the target population and their providers is much more likely to improve rates of preventive screening, than where women are the sole focus of intervention efforts (Rakowski et al., 1992).

As illustrated by the findings of this study, discrepancies exist between provider views of barriers for older women, and the barriers the women themselves indicate. Education of providers about such discrepancies and about the barriers expressed by older women is necessary to ensure that they are facilitating the inclusion of women in screening programs by targeting real barriers to participation. This is especially important given that the major proportion of Pap smears are taken by general practitioners (Straton, 1994). Additionally, the introduction of greater provider-initiated strategies has been proffered as the most efficient way to surmount the barriers of underscreened women (Eardley et al., 1985).

An important issue stressed by several of the providers in this study was the necessity of emphasising that a positive result does not equal cancer, and the sensitive provision of test result information to women who attend for screening. Fear of the test results has emerged as a barrier to cervical screening in other research (White, 1995), although such findings did not figure prominently in the present study: fear of being diagnosed with cancer was not ranked among the top 10 factors for either regular or non-regular attenders. One often-unacknowledged feature of the expansion of screening and the uptake of health preventive services is that with more people being screened, more abnormalities will be detected, and hence more people will be advised of an abnormal test result (Paskett & Rimer, 1995). The advantages of detecting early precancerous changes are lost if treatment for suspected abnormalities is not commenced. “Health care providers are the focal point for motivating patients to return for treatment and (to attend for) future screening” (Paskett & Rimer, 1995, p. 73). Given this importance, it would be useful to assess the behavioural intention to have a Pap smear in studies of cervical screening.

Providers themselves indicated practical barriers to screening older women, namely the length of consult needed to perform a Pap smear on older women, women’s preference for a female provider and the difficulty in getting women to attend designated Pap smear appointments. The establishment of a ‘clinic’ or specialist services, offering women a choice of female provider, may

address these issues. Where practical impediments interfere with the implementation of screening, screening rates will not rise. The implementation of strategic planning at provider sites to account for such issues will certainly complement intervention to increase attendance by older women.

Recommendations to accomplish this have been suggested; firstly by designing services to meet the needs of consumers, such as providing a female provider and appointment reminders (Lurie et al., 1997) and also by implementing changes to surgery practice to encourage smear taking (Oleszkowicz et al., 1994) by all providers. Some studies have proposed an 'anniversary screening date' (Mandelblatt et al., 1993; Marlin et al., 1996). The principle behind this proposal is that having a biennial date for screening procedures such as mammography is likely to assist in overcoming barriers associated with hassle factors such as difficulty arranging, or of forgetting. The use of anniversary screening for medical check-ups and/or the provision of specialist clinics at general practices may increase the amount of health protective behaviours people engage in.

#### **The Use of Value Expectancy Theories to Assess Health Behaviour Decisions.**

The use of a combination of the best features of two theoretical models, the Theory of Reasoned Action and Multi-Attribute Utility theory, for understanding health behaviour has been of value in designing an instrument to tap the attitudes and opinions of older women about the diverse factors associated with attendance for cervical cancer screening. The use of this method has allowed for a determination of the relative importance of the identified barriers for both regularly and non-regularly screened women, with the establishment of hierarchies for both groups. Additionally the simplification of the Multi-Attribute Utility operationalisation with input from the Theory of Reasoned Action to allow for postal distribution of questionnaires has implications for improving the number and representativeness of participants and cost effectiveness of future studies, who may choose to utilise this method. This is particularly appropriate for studies that seek to clarify abundant diverse research via an overriding theoretical framework and where identification of the most important elements of a decision is a primary research goal. Even where research does not exist, this simplification of the method for modeling a decision and gaining utility values still has implications in decreasing the currently time-intensive methods which are complex and thus susceptible to participant error (Carter, 1990). A further advantage of this method is that it allows for the comparison of results between studies using such methodologies.



Compared with similar studies into barriers for women's preventive health screening that have utilised the theoretical frameworks of the Theory of Reasoned Action and Multi-Attribute Utility Theory, some evidence of general factors has emerged. The importance of the health care provider has emerged as primary in studies of mammography (Salazar & de Moor, 1995) and of compliance with treatment for abnormal Pap smear results (Paskett et al., 1990). Responsibility to self and confidence in test efficacy were rated as the most important factors influencing mammography participation in a sample of 87 working women, aged between 39 to 75 years of age (Salazar & de Moor, 1995). Efficacy was also of importance to treatment follow-up for women who received an abnormal Pap smear result (Paskett et al., 1990). The correspondence with the results of the present study are striking, and indicate support for the presence of general factors that may hinder the uptake of preventive services. This is contrary to the assertion of Gillam (1991) who states that factors associated with specific health protective behaviours can not be generalised. Given the similar aims of preventive exams, and the intimate nature of these tests which many view as invasive (Hill et al., 1985), it is not surprising that barriers to the uptake of screening may be similar across test procedures. The research of Savage and Clark (1996) strengthens this contention: they report that performance of a related health behaviour such as a Pap smear was positively associated with adequacy of attendance for mammographic screening. The implications of this support for the presence of some general factors are for implementing strategies to target general factors such as increasing confidence in test efficacy and test providers, and knowledge of appropriate screening intervals. Such interventions could be valuable to increase participation levels in preventive screening across the board. With the empirical validation of other preventive screening tests, for the detection of prostate cancer among others, such postulations may be researched more thoroughly. It is important to note however that the issues for the participation of specific groups may not generalise across all populations, thus lending credence to the assertion that further research needs to be conducted with groups of interest (Kiernan & Frame, 1996).

### **Limitations of the Present Study.**

Some limitations with the present research must be noted. Firstly, there was an absence of women who had never been screened represented in this sample. Accessing women who do not comply with screening recommendations or who have never been screened is a difficulty that has

been encountered in other studies into cervical cancer, where as little as three percent of the sample may be non-compliers (White, 1995). Straton (1994) suggests that women lie along a continuum that may be thought of as spanning women who will always attend for screening to those women who will never be screened. This was reflected in comments by several participants in the present study who indicated that while the factors being assessed were important, they would attend for screening anyway. Such a finding may be explained by the responsibility for health factor, and indicates the importance of further research to address how to encourage this feature in all women. It is thought that the majority of women lie somewhere on the middle of this continuum, and it is to these women that existing interventions are addressed. In finding ratings of factors which discriminated between regular and non-regular attenders, and that characterised non-regular attenders, such as increased age, different ratings of the perceived usefulness of the test and feeling less responsibility for their health, this information may be used in the provision of targeted interventions to increase screening rates for cervical cancer in older women. It must be acknowledged however that it may well be that the reasons surrounding non-participation differ from those reported here by regularly and less-regularly screened women.

It is reasonable to assume that the providers who participated in the present study were well motivated and are therefore likely to report high rates of recommending Pap smears to their patients, and compliance with their recommendations. While this does not invalidate the results of the current study, it is important to realise that even patients drawn from among well-motivated practitioners had varying rates of regularity and knowledge of the correct Pap smear interval and still expressed barriers to regular screening. The finding of the 1989-1990 National Health survey (Australian Bureau of Statistics, 1992), that 59% of general practitioners expressed difficulties in talking about Pap smears with their patients, highlights this need. Replication of the present study on a more general group of Pap smear providers may uncover additional factors important to screening for cervical cancer in older women: the inclusion of women who have never had a Pap smear, and ways of accessing these women, are important issues for future researchers.

## **Conclusions.**

In conclusion, the findings of this study provide useful information about the characteristics of regular and non-regular attenders as well as detailing the dimensions along which these two groups

differ. Additionally, insights have been gained into provider barriers hindering screening in this population. The use and application of these findings may overcome the issue of inconsistency of health promotion to older women (White, 1995) when incorporated into interventions designed to target the specific attitudes expressed by non-regularly screened women in the present study.

The generally high response rate of nearly 50% is significantly higher than the average response rate of 20 to 30% for survey type instruments (Berdie, Anderson, & Niebuhr, 1986; Bowling, 1997). This may reflect the tendency of older adults and women in particular to respond to questionnaires as well as the combined effects of both mail-distributed and direct request procedures. Practitioners were also well represented in the study.

The findings of this study are immediately applicable to the recommendations of the West Australian Cervical Cancer Prevention program and the stated objectives to increase participation in cervical cancer screening and understanding of the barriers affecting underscreened women. This can be achieved by the use of the findings of the present study to assist in the development of a program to encourage the recruitment of women in target groups, such as older women, to take up regular cervical screening. More research into general strategies to increase the uptake of preventive health screening as a whole may make for cost effective interventions to improve preventive screening across the population, in addition to targeted interventions to certain at-risk groups. The results of this research indicate the continuing importance of providing clear information to older women about the correct screening interval, the benefits of the test, what the test does and what it involves, in order to address impediments to regular screening.

Hennig and Knowles (1990) make recommendations about improving education interventions for women, and in particular, older women. They assert, “educational campaigns should emphasise the benefits of regular tests, persuade women they are not (unduly) physically uncomfortable and stress that older women should continue regular testing” (p. 1620). The findings of this study provide more specific information about the education needs of older, non-regularly screened women; namely the inclusion of information about the usefulness and accuracy of Pap smears.

The participation of Pap smear providers and the detailed findings reported above provide further impetus to the inclusion of providers, both in research into the uptake of preventive health

behaviours and as targets themselves for education programs, in order to increase the overall level of preventive screening in the community.

The concerted campaign to remove women's barriers to participation in mammography for breast cancer has shown promising results. The application of such a program, when combined with interventions that specifically target barriers to regular screening for older women, and general interventions to increase knowledge about preventive screening tests, has good prospects for reducing the morbidity and mortality associated with cancer of the cervix.

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## **Appendices**

## **Appendix A**

### **Cervical Cancer Screening Questionnaire.**

#### **[Women's Form]**

**CERVICAL  
CANCER  
SCREENING  
QUESTIONNAIRE**

**Instructions:**

Please think about the following aspects that are part of having a Pap Smear. For each one, please rate how strongly you feel about each factor.

**Example:**

Do you think having a Pap Smear is embarrassing ?

☐    ☐    ☐    ☐    ☒    ☐    ☐    ☐    ☐    ☐

Not at all Embarrassing                          Very Embarrassing

**For the example above, if you feel having a Pap Smear is very embarrassing you would tick the box as shown.**

1. Do you feel it is difficult to arrange to have a Pap Smear ?

☐    ☐    ☐    ☐    ☐    ☐    ☒    ☐    ☐

Not at all DifficultVery Difficult

2. Do you feel that a Pap Smear is a useful procedure ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all Useful Very Useful

3. Do you think that it is time consuming to have a Pap Smear ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all Time Consuming Very Time Consuming

4. Do you think having a Pap Smear is expensive ?

[illegible]

5. Are you afraid that if you have a Pap Smear you may be diagnosed with cancer ?

☐      ☐      ☐      ☐      ☐      ☐      ☐      ☐      ☐      ☐

Not at all AfraidVery Afraid

6. How much do you dislike the Pap Smear procedure ?

[illegible]

7. Are you afraid if you have a Pap Smear, you may have to get treatment for cancer ?

[illegible]

8. Do you feel you are at risk to have cancer ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all at Risk Very at Risk

9. What are your family's opinions about Pap Smears ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Positive Very Positive

10. Do you feel confident that a Pap Smear is accurate ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Confident Very Confident

11. How familiar are you with what a Pap Smear involves ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Familiar Very Familiar

12. How responsible do you feel for your own health ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Responsible Very Responsible

13. Do you have confidence in your General Practitioner ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Confident Very Confident

14. How uncomfortable do you think a Pap Smear is ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Uncomfortable Very Uncomfortable

15. What are your friend's opinions about Pap Smears ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Positive Very Positive

16. Do you think Pap Smears are able to detect early pre-cancerous changes ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Able to detect early changes Very Able to detect early changes

## Part 2:

Without referring back to your answers on the previous pages, please indicate how important each factor below is in your decision to have a Pap Smear.

Example: How important is your level of embarrassment in making your decision whether or not to have a Pap Smear ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

1. Think about your decision whether or not to have a Pap Smear. How important is your confidence or lack of confidence in the accuracy of a Pap Smear in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

2. Think about your decision whether or not to have a Pap Smear. How important is your view of the usefulness or lack of usefulness of the procedure in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

3. Think about your decision whether or not to have a Pap Smear. How important is the amount of time taken in having a Pap Smear in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

4. Think about your decision whether or not to have a Pap Smear. How important is the expense of having a Pap Smear in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

5. Think about your decision whether or not to have a Pap Smear. How important is your fear or lack of fear of being diagnosed with cancer in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

6. Think about your decision whether or not to have a Pap Smear. How important is your dislike of having a vaginal examination in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important



7. Think about your decision whether or not to have a Pap Smear. How important is your fear or lack of fear of receiving treatment for cancer in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

8. Think about your decision whether or not to have a Pap Smear. How important is the difficulty or lack of difficulty in arranging a Pap Smear in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

9. Think about your decision whether or not to have a Pap Smear. How important are your friend's opinions in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

10. Think about your decision whether or not to have a Pap Smear. How important is your concern about the discomfort of the procedure or lack of concern about the discomfort in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

11. Think about your decision whether or not to have a Pap Smear. How important is your familiarity or lack of familiarity with the procedure in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

12. Think about your decision whether or not to have a Pap Smear. How important is your feeling of responsibility for your health or lack of feeling responsible for your health in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

13. Think about your decision whether or not to have a Pap Smear. How important is your confidence or lack of confidence in your G.P in making your decision ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐  
Not at all Important Very Important

14. Think about your decision whether or not to have a Pap Smear. How important is your family's opinion in making your decision whether or not to have a Pap Smear ?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all Important Very Important

15. Think about your decision whether or not to have a Pap Smear. How important is your risk or relative lack of risk of having cancer in making your decision ?

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☐

Not at all Important

Very Important

16. Think about your decision whether or not to have a Pap Smear. How important is your confidence or lack of confidence in the ability of a Pap Smear to detect early pre-cancerous changes in making your decision ?

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Not at all Important

Very Important

**Part 3:**  
**Please complete the following:**

Your age \_\_\_\_\_

Have you ever had a Pap Smear? ☐ YES ☐ NO

If YES, please indicate the approximate date of your last examination \_\_\_\_\_

Who was the provider of your last Pap Smear? (Please Tick)

☐ General Practitioner

☐ Nurse

☐ Health Clinic

☐ Other

Please rate your level of satisfaction with how your most recent Pap Smear was conducted. (Please Tick)

☐ Very Satisfied

☐ Mostly Satisfied

☐ Very Dissatisfied

☐ Satisfied

☐ Dissatisfied

Do you have regular Pap Smears ? ☐ YES ☐ NO

How often do you think women need to have Pap Smears ? \_\_\_\_\_

Which group of women do you think most need to have Pap Smears ? \_\_\_\_\_

**Thankyou for your participation in this study. Your responses are appreciated.**

Please place in the enclosed envelope and return by Wednesday, the 22nd of October, 1998.

## **Appendix B**

**Cervical Cancer Screening Questionnaire.**

**[Pap Smear Provider Form]**

# **CERVICAL CANCER SCREENING QUESTIONNAIRE**

## **Pap Smear Provider Form**

**Please indicate the factors you perceive as inhibiting women aged 50-69 years from attending for screening for cervical cancer.**

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Please go back to the factors you have identified above and rate them in descending order of importance. Please write a number next to each factor, where 1 is most important.

**Please indicate the factors that you perceive as barriers for Providers in screening for cervical cancer in women aged 50-69 years.**

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Please rate these factors in descending order of importance where 1 is most important.

**Please think about the women you have in your practice aged 50-69 years, that you have seen over the past year. What proportion of these women have you recommended to have their biannual Pap Smear?**

- ☐ All eligible women aged 50-69 years.
- ☐ Nearly all eligible women aged 50-69 years.
- ☐ Half of all eligible women aged 50-69 years.
- ☐ Less than half of all eligible women aged 50-69 years.
- ☐ No eligible women aged 50-69 years.

**What influences whether you as a General Practitioner will advise your older female patients to have a Pap Smear?**

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**Of the women you recommend to have a Pap Smear, how many have one?**

- ☐ All of the women you recommend.
- ☐ Nearly all of the women you recommend.
- ☐ Half of the women you recommend.
- ☐ Less than half of the women you recommend.
- ☐ None of the women you recommend.

**Please rate your level of satisfaction with the provision of information to general practitioners regarding Pap Smears and Cervical Cancer Screening recommendations for women aged 50-69 years.**

- ☐ Very Satisfied.
- ☐ Satisfied.
- ☐ Mostly Satisfied.
- ☐ Dissatisfied.
- ☐ Very Dissatisfied.

**Please comment on any other issues you feel are important to screening for cervical cancer.**

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**Thankyou for your participation. Your responses are appreciated.**

## **Appendix C**

### **Information for Participants.**

**Contents**

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C2	Explanatory Pamphlet accompanying the Cervical Cancer Screening Questionnaire [Women’s Form]	83

## Women's Cervical Cancer Screening Project

Dear Doctor,

May I extend an invitation for your participation in the Women's Cervical Cancer Screening Project? This project is being conducted as part of my Master of Psychology (Clinical) degree at Edith Cowan University. I'd like to outline the context of the study and how you can help. Below I outline how you can assist in this project.

### **The Context of the Study:**

At present cervical cancer is the eighth most common cancer in Australia. It is also largely preventable: with estimates that up to 90% of cervical cancers are preventable with two-yearly Pap Smears. As you may be aware, mortality from cervical cancer is most notable in women aged 50 to 69 years; the women who comprise this group are also the least represented in screening for cervical cancer.

Recent recommendations have focused upon improving the screening rates of many groups of underscreened women, including older women. Several key factors have been identified as barriers to regular screening, such as a fear of being diagnosed with cancer or dislike of the examination. As yet, there has been no research which has identified which of these variables are the most important. That is, those factors which represent the most significant barriers to regular attendance for screening in this age group. The aim of this project is that with such information we will be able to more effectively target older women to address these barriers.

As well as determining the relative importance of identified barriers to Cervical Cancer screening; this study also gives you the chance to voice your views on this important subject. As general practitioners comprise the largest providers of Pap Smears, I am particularly interested in the opinions of general practitioners on this matter. If you agree to participate in this study you will be asked to do the following:

### **How You Can Help:**

- Fill in the short General Practitioner's questionnaire (the blue form, included overleaf) which asks for your views on several aspects of screening women aged 50-69 years. Your responses will be completely anonymous.
- The questionnaire for the women can be distributed as follows (in order of preference):
  - (1) Receptionist/Clerical staff are given 'questionnaire packs', containing the questionnaire, information pamphlet and return envelope, and address them to ten to twenty older female patients from names chosen randomly from your patient lists. The packs are postage paid and need only be mailed. This ensures confidentiality.
  - (2) As for (1) above, where independent clerical staff can be provided to do the actual addressing of the envelopes, with the randomly chosen names.
  - (3) If (1) and (2) above are not suitable then the questionnaires may be handed out to patients as they use your service, or in your waiting room.
  - (4) A combination of both (1) and (3) may be used.

In return for your valued participation, you will receive a concise summary of the results of this study. This will be made available in the form of a flier, which may be placed in your surgery in order to inform your patients who participated of the results.

**If you would like to be involved in this project please call the number below by Thursday, 2nd October leaving your name, telephone number and the best time to call.**

I will arrange a convenient time to deliver the questionnaire packs. I welcome any queries or comments you may have: there is space dedicated for this purpose on the blue questionnaire. However, if you would like to make any comments to me personally, please contact me on the number below.

Yours Sincerely,

Nerida Beaumont

Dr Susan Gee (Project Supervisor)



## **We'd like to hear your view !**

**C2**

Hi, my name is Nerida Beaumont. I invite you to tell us what you think about Pap Smears. This study is being conducted as part of my Master of Psychology degree at Edith Cowan University. The aim of this research is to provide information on those factors which influence a woman's decision to participate in Cervical Cancer screening, that is what influences women to have Pap Smears. A Pap Smear involves taking cells from the cervix to identify any potential pre-cancerous cell changes.

*We are counting on people like you to be a part of this study.*

### **What is involved ?**

Your General Practitioner has sent this information on to you: no identifying information has been disclosed to any other person. As a participant in this study I would like you to answer the questions on the following pages, which detail the factors which may influence a woman's decision to have a Pap Smear. The questionnaire will take approximately ten minutes to complete. The questions deal with aspects of your health behaviour. The questionnaire sets out different views people may hold on cervical cancer screening. You will be asked to read a series of descriptions and tell us how much these descriptions reflect your own views.

### **Thankyou !**

Thank you for your interest in this project, I welcome your help. Your participation is entirely voluntary and if you agree to participate you may decline to answer any or all of the questionnaire. As all information will be completely anonymous, there is no need for you to record your name or any information that could identify you on the questionnaire. Your doctor will not have any information on how you reply and your answers will in no way affect your future medical treatment.

### **What is the survey for ?**

It is anticipated that the information obtained from this research will help to provide more detailed information on screening rates among women and assist in the provision of targeted education programs.

The questionnaire, once completed, should be placed into the postage paid response envelope (enclosed) and returned. The answers from all the participants will be summarised and published. I'd like to emphasise that no-one will know which questionnaire is yours: individual answers will be completely anonymous.

### **We look forward to your help. Thankyou for your time.**

Should you have any queries please contact me at the address below.

Edith Cowan School of Psychology, Joondalup Drive, Joondalup, 6127. Phone: 9400 5526.

## Appendix D

### Rank-ordered Standardised Canonical Discriminant Function Coefficients from the Discriminant Function Analysis.

Factor	Standardised canonical discriminant function coefficients
Familiarity with the Pap smear procedure	-0.59
Feeling responsibility for my health	-0.55
Usefulness of the Pap smear procedure	0.51
Age	-0.44
Ability of the Pap smear to detect cervical cancer	0.43
Friend's opinions	0.37
Accuracy of the Pap smear	-0.28
Having to get treatment for cervical cancer	0.19
Risk of cervical cancer	-0.19
Discomfort of the procedure	0.11
Family opinions	-0.10
Confidence in General Practitioner	-0.09
Being diagnosed with cervical cancer	0.06
Difficulty arranging to have a Pap smear	-0.05
Time taken to have a Pap smear	0.04
Expense of having a Pap smear	0.03
Dislike of the Pap smear	0.02

Note. N=140, \*p<.05, \*\* p<.01.

## **Appendix E**

### **Qualitative Responses by Pap Smear Providers to the Cervical Cancer Screening Questionnaire.**

**[Pap Smear Provider Form]**

**Contents**

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E3	Qualitative responses by Pap smear providers on what influences whether they will recommend having a Pap smear to their older female patients.	90
E4	Qualitative responses by Pap smear providers on other issues important to screening for cervical cancer.	91

Table E1.

The qualitative responses by Pap smear providers on the factors they perceive as inhibiting women aged 50-69 years from attending for Pap smears.

Response	Percentage Endorsing
Embarrassment	21%
The women are not sexually active and the myth that only Currently sexually active women need a Pap smear	17%
Women are unaware of the need for a regular Pap smear	17%
Women's preference for a female Pap smear provider, where Family GP is male	13%
Fear of pain/discomfort	8%
Fear of diagnosis of cancer	8%
Previously painful Pap smear	8%
Cultural reasons/Background	4%
Procedure is time consuming	4%
Menopause	4%
Hysterectomy	4%
No previous Pap smear experience	4%
History of sexual abuse	4%

Note. Percentages do not add up to 100. GP = General Practitioner. N = 23.

Table E2.

The qualitative responses by Pap smear providers on barriers for Pap smear providers in screening women aged 50-69 years.

Response	Percentage Endorsing
Time taken/Length of consult needed to do Pap smear on older women	30%
No barriers to screening older women	17%
If seeing an older female patient for non-sexual consult	13%
Lack of facilities and/or equipment	13%
Embarrassment	8%
Getting women to attend scheduled Pap smear appointments	8%
More important issues at consult	4%
Illness or inability to examine	4%
Male GPs leaving for female colleagues to perform Pap smears	4%

Note. Percentages do not add up to 100. GP = General Practitioner. N = 23.

Table E3.

Responses by Pap smear providers on what influences whether they will recommend having a Pap Smear to their older female clients.

Response	Percentage Endorsing
Usually suggest to all women	39%
If interval between Pap smears has been longer than two years	21%
If previous Pap smear results were irregular	10%
If patient requests a Pap smear	4%
If patient reports intramenstrual/post-coital bleeding	4%
If patient is on Hormone Replacement Therapy	4%

Note. Percentages do not add up to 100. N = 23.

Table E4.

Comments by Pap smear providers on issues important to screening for cervical cancer.

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Recommendations

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Need for constant media attention to attract older women for screening.

Pap smears do not fit well into current Medical Benefits schedule.

Emphasising that a negative result does not equal cancer.

More education needed for providers on correct Pap smear taking technique.

More training for isolated practitioners.

Doctors need to be proactive and offer Pap smears routinely.

Establish regular Pap smear clinics with female providers.

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Note. Responses to this question were optional. N = 8.