Chapter One

Introduction

1.1. Motivation

Ever since the 1990s, cervical cancer has become one of the most common forms of cancer occurring amongst women in Taiwan. At between 50-60 cases per 100,000 women, the incidence rate is one of the highest for all female malignancies. Furthermore, the mortality rate for cervical cancer currently stands at 8.5-9.5 per 100,000 women, the fourth or fifth highest cause of death from all female malignancies (Taiwan Cancer Registry).

In the ongoing efforts aimed at reducing the mortality rate resulting from cervical cancer, it has long been recognized that the most effective method is Papanicolaou (Pap) smear testing (Guzick, 1978; Clarke and Anderson, 1979). Indeed, both the early detection and effective treatment of cervical cancer can be achieved through such testing. Many countries throughout the world have therefore placed considerable effort into promoting the use of Pap smear screening so as to detect and prevent the rise in incidences of cervical cancer.

The use of Pap smear screening in Taiwan began in 1974; however, the initial

usage rate for this test was very low, with only 2.38 per cent of Taiwanese women seeking such tests between 1974 and 1978. At the time, the low rate may well have been attributable to the likelihood that women in Taiwan did not realize the importance of Pap smear screening, that they were embarrassed by the tests, or that they were afraid of the possible outcome. Nevertheless, by 1984, as a result of the government's efforts to promote more widespread usage, the Pap smear screening rate had almost doubled, to 4.49 per cent (Chou and Lai, 1993).

In an attempt to further raise the utilization rate of Pap smear testing, free cervical cancer screening was made available under the National Health Insurance (NHI) program in July 1995, just four months after the inauguration of the NHI; thereafter, all women aged 30 years or above became eligible for one test per year. As a result, the Pap smear testing utilization rate jumped from 10 per cent in 1995 to 30 per cent in 1998 (Health Statistics, 2004). Nevertheless, despite the testing rate having risen significantly under the NHI system, it still remains much lower than the average rate of approximately 70-80 per cent in most of the developed countries (Guzick, 1978).

Hence, the purpose of this dissertation is to investigate the demand for Pap-smear cervical cancer testing amongst women in Taiwan under the NHI system, and to determine the factors influencing their use of such screening. This dissertation features three empirical analyses based upon three different nationwide survey datasets. The

results of our study should be of significant importance to health policy decision makers in their ongoing attempts to reduce the incidences of cervical cancer and the overall mortality rate.

1.2. Structure of the Dissertation

The remainder of this dissertation is presented in the following five chapters. In Chapter 2, we attempt to analyze the theoretical foundations and summarize the extant literature through a review of the demand for preventive care services. The empirical essays are presented in the three subsequent chapters.

Chapter 3 presents data obtained from the 1992 (pre-NHI) and 1998 (post-NHI) surveys on 'Knowledge, Attitudes and Practice' (KAP) administered by the Provincial Institute of Family Planning in Taiwan. In this essay, we apply a logit model to compare the effects of the factors influencing the use of Pap-smear testing both before and after the implementation of the NHI system in Taiwan. We also pool the two-year datasets to explore the direct and indirect effects of the NHI program on the demand for Pap-smear testing.

In Chapter 4, we set out to investigate the impact of different levels of urbanization on the use of female preventive care services under the NHI program. The dataset used in this chapter comprises of nationwide survey data from the 2001

National Health Interview Survey (NHIS) compiled by the National Health Research Institutes in Taiwan. This essay is undertaken using a bivariate probit model followed Green (2003), with correlated disturbances between the Pap smear test and breast cancer screening.

A two-stage estimation econometric model, as proposed by Maddala (2004), is applied in Chapter 5 to investigate the determinants of healthcare information amongst Taiwanese women, and their association with cervical cancer screening. In the first stage, the determinants are estimated under the 'ordinary least squares' (OLS) method, with the predicted values of the healthcare information then being linked to the decision to undergo Pap-smear testing. The nationwide survey dataset for this third essay was obtained from the 2002 'Health Promotion of Knowledge, Attitudes and Practice' (HPKAP) compiled by the Bureau of Health Promotion in Taiwan.

Finally, the main results of each of the chapters are summarized in Chapter 6, which also presents some important policy implications and further discussion on issues relating to the utilization of Pap-smear testing amongst women in Taiwan.