Disability Benefits as an Incentive for Hysterectomy:

Uterine Fibroid Patients in Taiwan

Abstract

Worker compensation insurance in Taiwan ensures that a woman under the age of 45 who has her uterus removed can receive disability compensation benefits. This research investigates whether such a compensation policy impacts a woman's inclination to have a hysterectomy. We extract the records of 16,030 women diagnosed with uterine fibroids (UFs) between 2000 and 2010 from the Longitudinal Taiwan Health Insurance Database. The findings reveal that each age group has a significantly lower hysterectomy rate compared to that of the 44-year-old age group. Moreover, patients with lower monthly incomes are significantly more inclined to undergo hysterectomies than those with higher monthly incomes. Policy-makers should be aware that worker compensation regulations in Taiwan may influence and encourage women with economic needs to undergo hysterectomy surgery when approaching the age of 45.

1. Introduction

A hysterectomy is an operation that is universally performed for women in which the uterus is removed. The most common indication for hysterectomy is uterine fibroids (UFs) and benign tumors, as reported by countries such as the USA (40.7%) [1], Italy (41%) [2], South Africa (23%) [3], India (27.9%) [4], and Taiwan (46.2 %) [5].

A study conducted in 2009 on the prevalence of self-reported UFs across eight countries reveals a rate ranging from 4.5% (UK) to 9.8% (Italy) and reaching as high as 9.4% (UK) and 17.8% (Italy) in the 40-49 age group [6]. Even though many alternative treatments are currently available to improve symptoms related to UFs, including myomectomy, uterine artery embolization, and hormone replacement therapy [7,8,9], UF sufferers still account for a large percentage of hysterectomy patients. However, over 20% of patients undergo hysterectomy surgery for inappropriate reasons [5].

Previous epidemiological studies on hysterectomy have shown that factors associated with hysterectomy include patient age [1,2], race [10,11], preference [8], income [12,13,14], insurance [15,16], and socioeconomic status [2,17,18]. Moreover, the decision to have a hysterectomy is determined by multiple factors such as bothersome symptoms [11,19,20], opinions of an authority figure or relative [20,21,22,23], fears of decreased sexuality [20,23], the desire to give birth [21,24], and relationship status [11,23,25].

In addition to these factors, this study analyzes a unique phenomenon in Taiwan in which hysterectomy is closely related to monetary compensation for those under the age of 45. The

Taiwanese government regulates that during the period covered by labor insurance, an insured woman less than 45 years of age who loses her reproductive function due to ordinary injury or sickness (i.e., has her uterus removed) can claim disability benefits up to an amount equal to 160 days' wages. The benefits increase by a further 50% (for a total of 240 days' wages) for occupational injury or disease. These criteria for disability are based on the Labor Insurance Benefit Payment Criteria contained within the Labor Insurance Act since 1958 [26]. There are 15 levels of disabilities. The corresponding benefits are calculated on a daily basis according to the average daily pay insured from 1200 days for level 1 to 30 days for level 15. Losing reproductive function is accounted for as disability level 11. There have been several amendments to these benefits criteria since 1958 and the most recent amendment took place in 2013. However, there has been no change at all in terms of the age restriction for those who have had their uterus removed to be eligible for receiving the disability benefit. The same rule is applicable to those with farmers' insurance and fishermen's insurance.

Likewise, government employees with civil servant insurance in similar situations are qualified for benefits amounting to six months' wages [27]. However, a female soldier who loses her uterus due to injury or sickness can claim disability benefits for up to 20 months' wages and there is no age restriction [28].

With the additional medical fee coverage provided by the National Health Insurance (NHI), the benefit of six months' wages becomes a major incentive for insured women to undergo hysterectomy surgery. This, in addition to the age regulation in Taiwan, gives rise to a particularly influential factor

in the decision to remove the uterus, and one which is hardly seen in the US or other countries and contrasts with factors discussed in previous studies. For example, in the US, in order to receive compensation for the loss of reproductive ability, a patient must demonstrate that this loss is disabling and impedes the ability to work, as well as prove that work was the cause of such loss [29].

This paper focuses on UF patients in analyzing the hysterectomy rate in Taiwan and determining whether most UF patients undergo hysterectomy surgery at the age of 44 before becoming too old to receive insurance compensation. If the age restriction for disability compensation indeed leads UF patients to have unnecessary hysterectomies (as not all UF patients may necessarily require a hysterectomy), this insurance compensation policy requires a thorough review.

2. Methods

2.1 Data sources

Data for the period from 2000 to 2010 was obtained from the National Health Insurance Research Database (NHIRD), a national database, which was established in Taiwan in 1996 and currently contains information for 99% of the residents who are covered by the National Health Insurance (NHI) program. The National Health Research Institute (NHRI) maintains the annual claim data of the NHIRD and scrambles beneficiary identification for privacy protection before releasing the data for research. The claim data offers a broad picture of the operations performed on UF patients.

This study uses the Longitudinal Health Insurance Database 2000 (LHID 2000), a subset of the NHIRD, to construct the study population. The LHID2000 was created as a result of the NHRI

randomly selecting one million insured people who had already used the NHI service from 1996 to

2000. Based on the NHRI report, the age and sex distributions were no different between the

LHID2000 and NHIRD. The NHI added the new claims data for these one million insured people to

the LHID every year. The NHRI created a scrambled, anonymous identification number for each

individual's information, which included a registry for beneficiaries, outpatient and inpatient records

and a registry of medical services and medication prescriptions. The socio-demographic information

for this study included the patient's birth date and monthly income for premium estimation.

The patient's disease history was collected from inpatient and outpatient files. The disease record

was coded according to the International Classification of Diseases, Ninth Revision, Clinical

Modification (ICD-9-CM).

2.2 Study Participants

This study was a nested case-control design. First, we constructed a UF cohort, which enrolled the

newly-diagnosed UF patient from 2000 to 2010, but excluded the female soldier cases. Second, the

case group consisted of the hysterectomy patients in the period under observation and the date of the

hysterectomy was set as the index date. We enrolled the 3,206 women admitted for hysterectomy

surgery. Since some of the patients did not have labor insurance or civil servant insurance, they were

not eligible for disability compensation. Therefore we established two subgroups in which one

comprised the compensation eligible group and the other the compensation ineligible group. Finally,

the 4-fold frequency-matched control subjects were randomly selected from the UF patient who had

not undergone a hysterectomy during the same time period for both the compensation eligible and

ineligible groups. The index date of the control group was randomly assigned a month and a day with

the same index year for the matched control subjects.   In total, for the compensation eligible group,

we had 2,865 patients who had undergone a hysterectomy and 11,460 who had not, respectively. The

respective figures for the compensation ineligible group were 341 and 1,364. Figure 1 demonstrates

the data distribution for the analytical sample.

This study obtained demographic data, including the patient's age and monthly income, from the

NHIRD database. To examine whether hysterectomy rates varied among UF patients in different age

groups, especially for the critical age group of those who were almost 45, we classified age into 12

categories: 30-39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50-59. In the NHI, the premiums for

most insured people are determined by their insured wage and premium rate. The monthly income

variable served as a proxy for socioeconomic status in this study and was classified into one of five

categories: less than 626 USD; 627-1,210 USD; 1,211-1,526 USD; 1,527-2,426 USD; and more than

2,426 USD.

This study also considers comorbidities as confounding factors. The comorbidities prior to the

index date include hypertension, diabetes, and hyperlipidemia.

2.3 Statistical Analysis

To illustrate the differences between the hysterectomy and comparison group, we focused on the

proportion of demographic characteristics, especially age and income. A chi-square test evaluated

category variables and a t-test assessed continuous variables to test the discrepancies between the demographic characteristics. The adjusted ORs and 95% confidence intervals (CIs) were measured in the multiple logistic regression models to estimate the association between age, monthly income, and the hysterectomy rate. The incidence rate for hysterectomy and UFs was also calculated. This study used SAS 9.1.3 software (SAS Institute, Cary, NC, USA) for all data management and statistical analyses. A p-value < .05 was considered to be statistically significant.

3. Results

This research was conducted based on a group of 2,865 UF patients who underwent hysterectomy surgery and a group of 11,460 UF patients who did not receive hysterectomies (Table 1a). Both groups were eligible for disability compensation. The mean age of the hysterectomy group was 45.6, which was higher than that of the comparison group, 44.8. Patients who had hysterectomies were more likely to be 44 years old (11.7%) with a monthly income of 627-1,210 USD (50.1%), followed by those with an income of less than 626 USD (40.3%). The comorbidity distributions between the two groups were no different, except for that for hypertension. To check whether disability compensation played some role, we compared the results with the subgroup of those ineligible for disability compensation (Table 1b). The mean ages were similar to those in Table 1a, but patients who had hysterectomies were more likely to be 46 years old (11.7%). It is worth noting that the majority of the patients in the ineligible subgroup had low income (88.0% for the comparison group and 85.3% for the hysterectomy group).

We ran the OR regression for demographic factors (age and monthly income) associated with hysterectomy. After adjusting the potential confounding factors and the duration from diagnosis to the operation date, this study led two major findings (Table 2a). First, each age group had a significantly lower hysterectomy rate than that of the 44-year-old group. Second, compared with the monthly income group with less than 627 USD, the 1,527-2,426 USD income groups had significantly lower hysterectomy rates, which indicated that patients uF a higher monthly income had significantly lower hysterectomy rates. None of the above findings could be found in the subgroup ineligible for disability compensation (Table 2b).

This study further analyzed the average duration from UF diagnosis to hysterectomy surgery among women in different age groups (Fig. 2). For the compensation eligible group (solid line), those in the 30-39 age group had the longest average duration (35.4 months) from UF diagnosis to hysterectomy surgery, whereas those in the 50-59 age group had the shortest average duration (5.5 months). There was a decreasing trend in average duration from age 40 to 44: after the shortest duration of 13.2 months for the 44-year-old age group, the average duration increased to 16.4 months for the 45 age group, and then decreased and continued to shorten. For the compensation ineligible group, the pattern was similar before the age of 45 but there was a huge drop in the duration period at the age of 46.

This study also observed the proportion for those diagnosed with UF among different age groups of women (Fig. 3), as well as the hysterectomy rate for different age groups of women with UFs (Fig.

4) during the period from 2000 to 2010. The proportion for those diagnosed with UF at the age of 44 was the highest both for the eligible (6.24%) and ineligible groups (6.16%). There was a downward trend after the age of 44 for both groups. Regarding the hysterectomy rate for different age groups of women, there was a precipitous drop between the ages of 44 and 45. Women with UFs exhibited the highest hysterectomy rate (6.23%) at the age of 44 for the eligible group and at the age of 46 for the ineligible group (6.1%). A lower hysterectomy rate gap appeared for those aged 45 for both groups (5.48% for the eligible group and 5.34% for the ineligible group).

4. Discussions

The results of this study revealed that women aged 44 with UFs had significantly higher hysterectomy rates than women in any other age group, and also had a shorter duration between UF diagnosis and hysterectomy surgery than women under the age of 45. In addition, the peaks of both the UF diagnosis rate and hysterectomy rate occurred at the age of 44 (Fig. 3 and Fig. 4). This phenomenon was not a coincidence, but rather highlighted the possibility that when women in Taiwan with UFs decide to undergo hysterectomy surgery, the existing regulations regarding worker compensation for those qualifying due to their age might play an important role.

When it comes to the UF diagnosis rate, it needs to be asked why the peak was at age 44 in Taiwan. International evidence does not indicate a similar trend; for example, the mean age of UF diagnosis ranges from 35.8 in Spain to 43.5 in Italy [30]. In the US, the proportion of women newly diagnosed with UFs with no previous UF history increases with age and is the highest for those aged 45 and

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above [31]. The age at which hysterectomy surgery takes place produces a similar pattern. The age of UF patients with the highest hysterectomy rate was revealed to be 44 in Taiwan, but is 40 for African American women and 45 for Caucasian women in the US [32]. Irrespective of UF cases, the incidence rate for all hysterectomy patients is the highest for women aged 45 to 54 in Australia [33].

The fact that both the peaks of UF diagnosis and hysterectomy take place at the age of 44 in Taiwan leads to a natural conjecture: regulations regarding qualified disability compensation for those younger than 45 does indeed inspire some women approaching 44 to actively check for the existence of UFs. Therefore, the UF diagnosis rate rises, as does the possibility of hysterectomy surgery. As a result, women under the age of 45 who have no plans to give birth in the future may be more likely to choose hysterectomies as their preferred treatment for symptomatic UFs.

The effect of regulations for age restricted disability compensation on the decision to have a hysterectomy is even more profound when examining the duration from UF diagnosis to hysterectomy surgery. The results show that women who are younger have the longest duration between UF diagnosis and surgery; there is a decreasing trend in this duration for those aged 30 to 44 that reaches the shortest duration at 44, then increases at 45 and drops again after 46. This phenomenon reveals that women aged 44 do have pressure to more quickly make a decision about hysterectomy surgery. In addition, the standard deviation of duration consistently decreases with age, indicating that the variations in the decision time interval became smaller for women in the older age groups. Obviously, for older women who do not plan to give birth or who have already reached

menopause, symptoms in the body decrease the quality of life, making it easier to make a rapid

decision to have a hysterectomy.

The current phenomenon in Taiwan is closely related to the incentive generated by a disability

compensation policy which has been analyzed in previous research. Before the 1990s, the US worker

compensation policy often led to moral hazard. When the standard compensation for disabled

workers rose, the duration of paid benefit due to lost wages greatly increased [34,35,36] as the

application cases increased as well [35,37,38]. After lowering the standard amount of compensation

and strictly regulating the conditions for qualifying for disability benefit, the amount of

compensation paid greatly decreased [39]. Similar cases of ex-post moral hazard occurred due to

incentives from insurance schemes [16,40,41]. Insured patients were seeking health services earlier

than uninsured ones [16] and were more likely to use outpatient facilities and public providers [41].

Although moral hazard usually coexists with the insurance system, the situation in Taiwan is more

severe as the current worker compensation policy contains an incentive to receive potentially

unnecessary hysterectomies. Compared with the moral hazard in related studies, such as inflated

benefit claims that are not harmful to workers, needless hysterectomy operations for women with

UFs seem rather destructive.

Based on the above findings, a reform of the disability compensation policy in Taiwan is

necessary. First of all, the age restriction for the compensation of female workers who undergo

hysterectomy surgery is inappropriate; there is no substantial foundation for exercising this age

regulation. Instead, two alternatives that might be feasible are: 1) to continue to compensate for

hysterectomy surgery without an age restriction, or 2) to suspend compensation unless the

hysterectomy is due to work-related causes. The former solution may relieve the pressure for women

aged 44 to make a decision about having a hysterectomy, but also may create a greater incentive for

women of all ages with UFs to undergo hysterectomy surgery to obtain the disability benefits,

regardless of whether it is necessary or not. To get rid of the moral hazard due to the attraction of

disability benefit, restricting compensation to work-related hysterectomy surgery, such as in the US,

seems to be a superior solution.

Second, since their opinions heavily influence patients' final decisions, doctors play a major role

and should consider other alternatives, offering suggestions to patients under the age of 45 and facing

the decision whether to undergo hysterectomy surgery. As the major figures who perform the surgery,

doctors carry some of the responsibility for unnecessary operations, even though they have no right

to prevent female workers who prefer to receive disability benefits from having a hysterectomy.

In this study, insured women with lower incomes were more associated with an increased

hysterectomy rate; indeed, for lower income families, 160 days' salary in disability benefits is

attractive. Although this compensation may not explain all of the cases, similar findings in the US

have indicated that women with lower household incomes also have a higher rate of hysterectomy

[13,14]. Thus, the receipt of counseling and advice from a doctor could potentially be helpful.

There are some limitations to this study. First, the sample population from the NHIRD did not

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contain any information regarding infertility, which usually greatly impacts the decision to undergo hysterectomy surgery. Second, most women with UFs are asymptomatic, meaning that they may not visit hospitals or seek treatment. Thus, the number of patients diagnosed with UFs is less than the current number of UF patients, which affected the hysterectomy incidence rate.

5. Conclusions

This research revealed that the policy in Taiwan which restricts compensation for hysterectomy surgery to those under the age of 45 years old conversely encourages more women to have their uterus removed at the age of 44. For Taiwanese women, the peak in hysterectomies fell at the age of 44, an unnatural phenomenon from either a physiological or medical perspectives and seemingly motivated by the compensation regulation. Thus, eradicating this unnatural (age) restriction and allowing women to consider surgery without outside influences should be the major goals of the Taiwanese administration when correcting and improving the current worker compensation regulations.

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Table 1a: Baseline demographic status and comorbidity between hysterectomy and comparison group during 2000-2010 (Eligible for disability compensation)

Variable	Comparison group N = 11460 (%)	Hysterectomy group N = 2865 (%)	p-value
Age, mean (SD)*	44.8 (7.0)	45.6 (4.7)	<0.0001
30-39	3004 (26.2)	308 (10.8)	
40	437 (3.8)	129 (4.5)	
41	485 (4.2)	167 (5.8)	
42	549 (4.8)	199 (6.9)	
43	548 (4.8)	238 (8.3)	
44	559 (4.9)	334 (11.7)	
45	597 (5.2)	188 (6.6)	
46	642 (5.6)	236 (8.2)	
47	608 (5.3)	197 (6.9)	
48	585 (5.1)	197 (6.9)	
49	582 (5.1)	172 (6.0)	
50-59	2864 (25)	500 (17.5)	
Age of UF diagnosis, mean (SD)*	42.0 (6.9)	44.0 (5.1)	<0.0001
Insurance amounts			0.0134
≦626	4682 (40.9)	1156 (40.3)	
627-1210	5440 (47.5)	1434 (50.1)	
1211-1526	647 (5.6)	137 (4.8)	
1527-2426	652 (5.7)	132 (4.6)	
>2426	39 (0.3)	6 (0.2)	
Insurance type (Occupation)			<0.0001
Civil servant insurance	1328 (11.6)	255 (8.9)	
Labor insurance	8986 (78.4)	2240 (78.2)	
Farmer & Fishman insurance	1146 (10.0)	370 (12.9)	
Comorbidity			
Hypertension	1732 (15.1)	492 (17.2)	0.0065
DM	685 (6.0)	164 (5.7)	0.6079
Hyperlipidemia	1540 (13.4)	361 (12.6)	0.2372

Notes: Chi-Square Test; *: t-test; p-value < .05 was considered to be statistically significant.

Table 1b: Baseline demographic status and comorbidity between hysterectomy and comparison group during 2000-2010 (Ineligible for disability compensation)

Variable	Comparison group N = 1364 (%)	Hysterectomy group N = 341 (%)	p-value
Age, mean (SD)*	44.9 (7.3)	45.7 (5.0)	0.0115
30-39	370 (27.1)	42 (12.3)	
40	49 (3.6)	18 (5.3)	
41	50 (3.7)	16 (4.7)	
42	60 (4.4)	19 (5.6)	
43	75 (5.5)	22 (6.5)	
44	70 (5.1)	31 (9.1)	
45	69 (5.1)	22 (6.5)	
46	64 (4.7)	40 (11.7)	
47	64 (4.7)	23 (6.7)	
48	62 (4.5)	21 (6.2)	
49	69 (5.1)	19 (5.6)	
50-59	362 (26.5)	68 (19.9)	
Age of UF diagnosis, mean (SD)*	42.1 (7.3)	44.3 (5.3)	<0.0001
Insurance amounts			0.3234
≦626	1201 (88.0)	291 (85.3)	
627-1210	140 (10.3)	42 (12.3)	
1211-1526	12 (0.9)	6 (1.8)	
1527-2426	11 (0.8)	2 (0.6)	
Comorbidity			
Hypertension	188 (13.8)	54 (15.8)	0.3313
DM	67 (4.9)	20 (5.9)	0.4744
Hyperlipidemia	170 (12.5)	46 (13.5)	0.6103

Notes: Chi-Square Test; *: t-test; p-value < .05 was considered to be statistically significant.

Table 2a: The odds ratios regression of demographic factors associated with hysterectomy during 2000-2010 (Eligible for disability compensation)

N = 14325

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
Age of enrolled in the study		
30-39	0.17 (0.14-0.21)***	0.79 (0.77-0.80)
40	0.49 (0.39-0.63)***	0.16 (0.14-0.20)***
41	0.58 (0.46-0.72)***	0.49 (0.38-0.62)***
42	0.61 (0.49-0.75)***	0.55 (0.44-0.69)***
43	0.73 (0.59-0.89)**	0.59 (0.48-0.74)**
44	ref	ref
45	0.53 (0.43-0.65)***	0.53 (0.43-0.66)***
46	0.62 (0.50-0.75)***	0.62 (0.51-0.77)***
47	0.54 (0.44-0.67)***	0.54 (0.43-0.66)***
48	0.56 (0.46-0.70)***	0.57 (0.46-0.71)***
49	0.49 (0.40-0.61)***	0.53 (0.42-0.66)***
50-59	0.29 (0.25-0.34)***	0.35 (0.30-0.42)***
Income (month)		
≦626	ref	ref
627-1210	1.07 (0.98-1.16)	0.96 (0.87-1.05)
1211-1526	0.86 (0.71-1.04)	0.86 (0.70-1.06)
1527-2426	0.82 (0.67-1.00)*	0.79 (0.64-0.97)*
>2426	0.62 (0.26-1.48)	0.50 (0.21-1.22)
Insurance type (Occupation)		
Civil servant insurance	ref	ref
Labor insurance	1.30 (1.13-1.50)**	1.29 (1.11-1.50)**
Farmer & Fishman insurance	1.68 (1.41-2.01)***	1.58 (1.31-1.92)***
Hypertension		
No	ref	ref
Yes	1.16 (1.04-1.30)**	1.20 (1.06-1.36)**
Diabetes		
No	ref	ref
Yes	0.96 (0.80-1.14)	0.98 (0.81-1.18)
Hyperlipidemia		
No	ref	ref
Yes	0.93 (0.82-1.05)	0.92 (0.80-1.06)

Note: 1 adjusted for income, occupation, hypertension, diabetes, hyperlipidemia, occupation, income and duration from diagnosis to entry date.

2 *<0.05; ** < 0.01;*** < 0.0001

Table 2b: The odds ratios regression of demographic factors associated with hysterectomy during 2000-2010 (Ineligible for disability compensation)

N = 1705

Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
Age of enrolled in the study		
30-39	0.26 (0.15-0.44)***	0.26 (0.15-0.45)***
40	0.83 (0.42-1.65)	0.86 (0.42-1.75)
41	0.72 (0.36-1.46)	0.68 (0.33-1.40)
42	0.72 (0.37-1.39)	0.73 (0.37-1.46)
43	0.66 (0.35-1.25)	0.72 (0.37-1.39)
44	ref	ref
45	0.72 (0.38-1.36)	0.74 (0.38-1.43)
46	1.41 (0.79-2.52)	1.55 (0.85-2.83)
47	0.81 (0.43-1.53)	0.82 (0.42-1.58)
48	0.76 (0.40-1.47)	0.79 (0.40-1.55)
49	0.62 (0.32-1.20)	0.64 (0.32-1.27)
50-59	0.42 (0.26-0.70)**	0.52 (0.31-0.88)*
Income (month)		
≦626	ref	ref
627-1210	1.24 (0.86-1.79)	1.29 (0.87-1.90)
1211-1526	2.06 (0.77-5.54)	1.83 (0.64-5.26)
1527-2426	0.75 (0.17-3.40)	0.97 (0.19-4.78)
Hypertension		
No	ref	ref
Yes	1.18 (0.85-1.64)	1.29 (0.89-1.88)
Diabetes		
No	ref	ref
Yes	1.21 (0.72-2.02)	1.1 (0.62-1.95)
Hyperlipidemia		
No	ref	ref
Yes	1.10 (0.77-1.55)	1.08 (0.72-1.60)

Note: 1 adjusted for income, hypertension, diabetes, hyperlipidemia and duration from diagnosis to entry date.

   2 *<0.05; ** < 0.01;*** < 0.0001

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┌─────────────────────────────────────────────────┐
│  Taiwan Longitudinal Health Insurance Database 2000  │
│         (One million insured random sample)          │
└─────────────────────────────────────────────────┘
                        │
┌─────────────────────────────────────────────────┐
│  Uterine Fibroids patients with hysterectomy         │
│  (Excluding female soldiers)             3,206       │
└─────────────────────────────────────────────────┘
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Compensation ineligible group (Spouse of the insured, people without labor insurance) 341

Compensation eligible group (Government employees, workers, farmers and fishermen) 2,865

Analytic group B (Tables 1b and 2b)

matching

matching

Analytic group A (Tables 1a and 2a)

Comparison group (4-fold frequency-matched subjects were randomly selected from the UF patients ineligible for compensation but without a hysterectomy) 1,364

Comparison group (4-fold frequency-matched subjects were randomly selected from the UF patients eligible for compensation but without a hysterectomy) 11,460
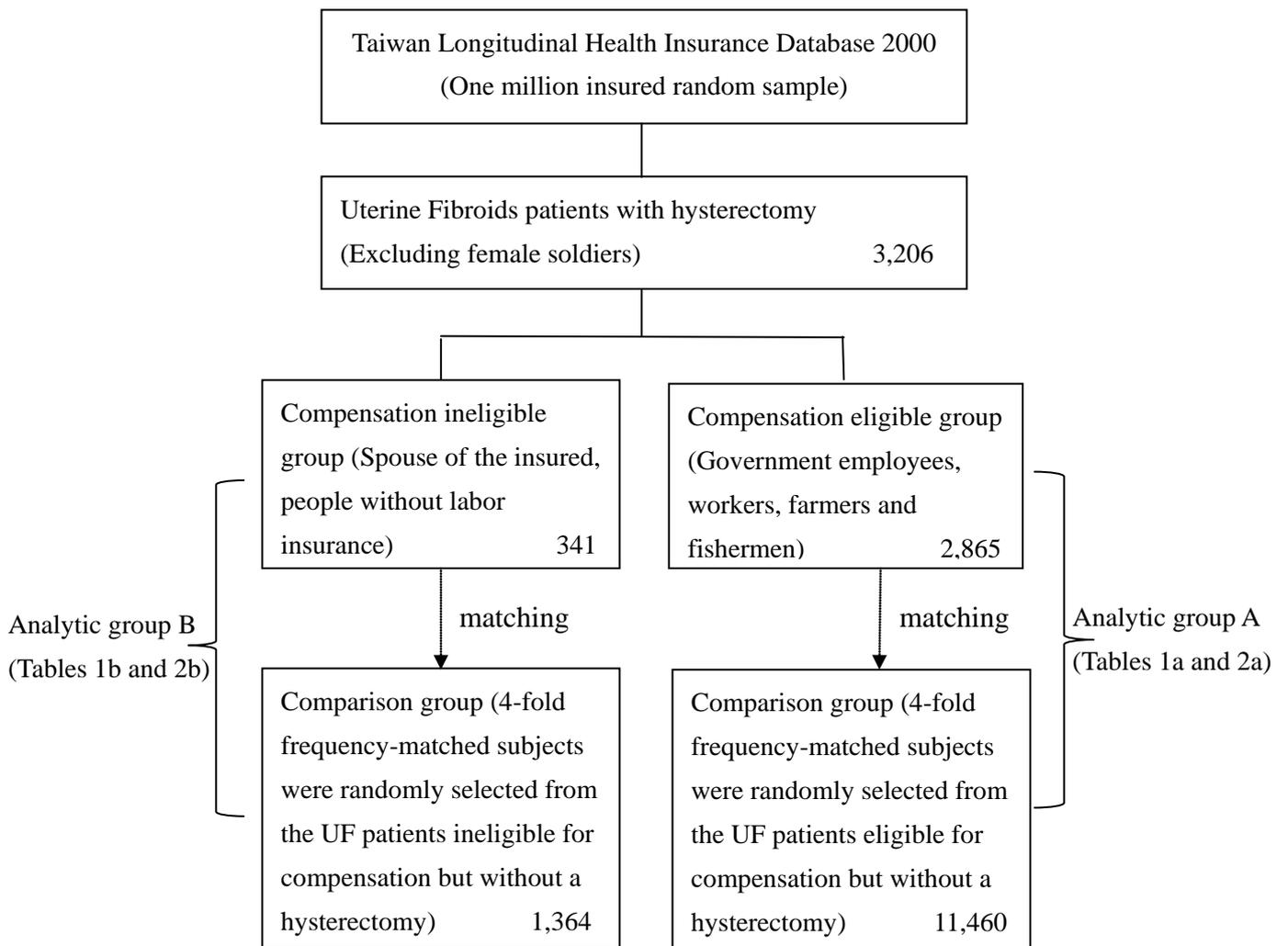
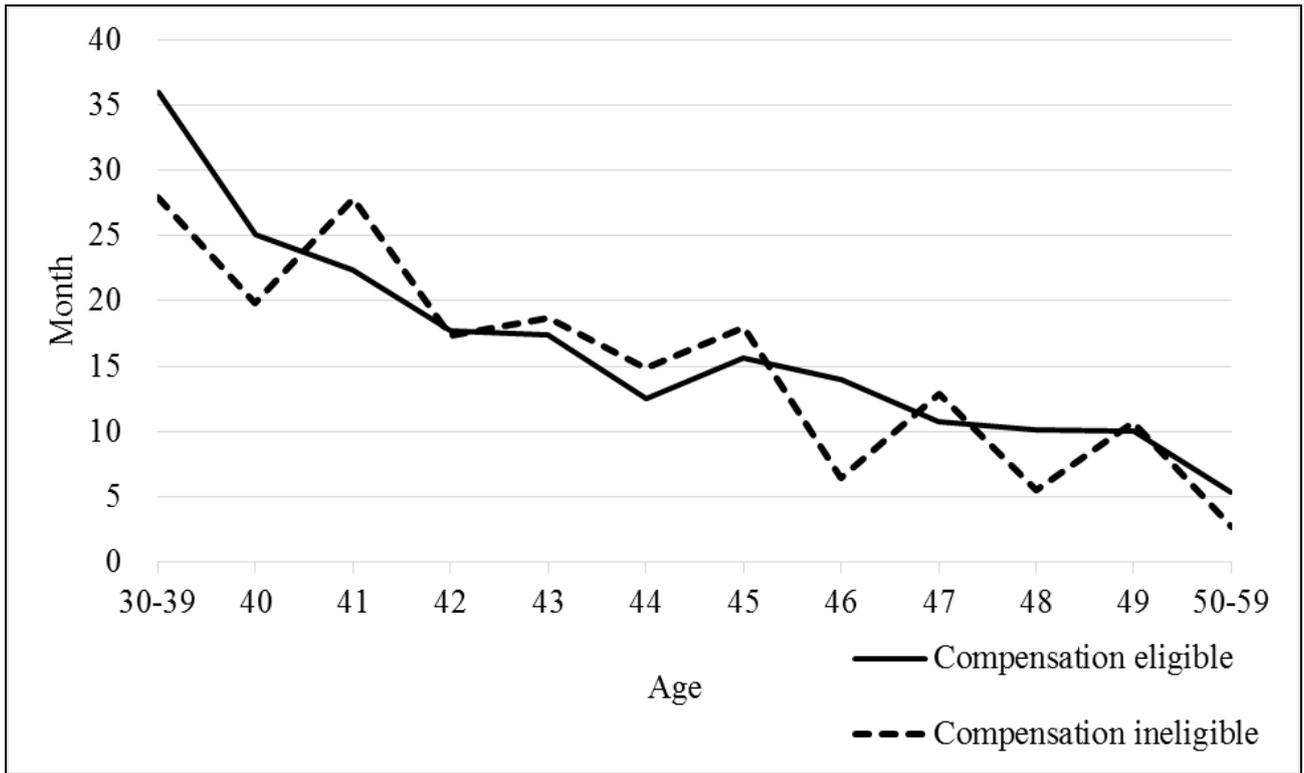Fig. 1 Data distribution of compensation eligible and ineligible groups

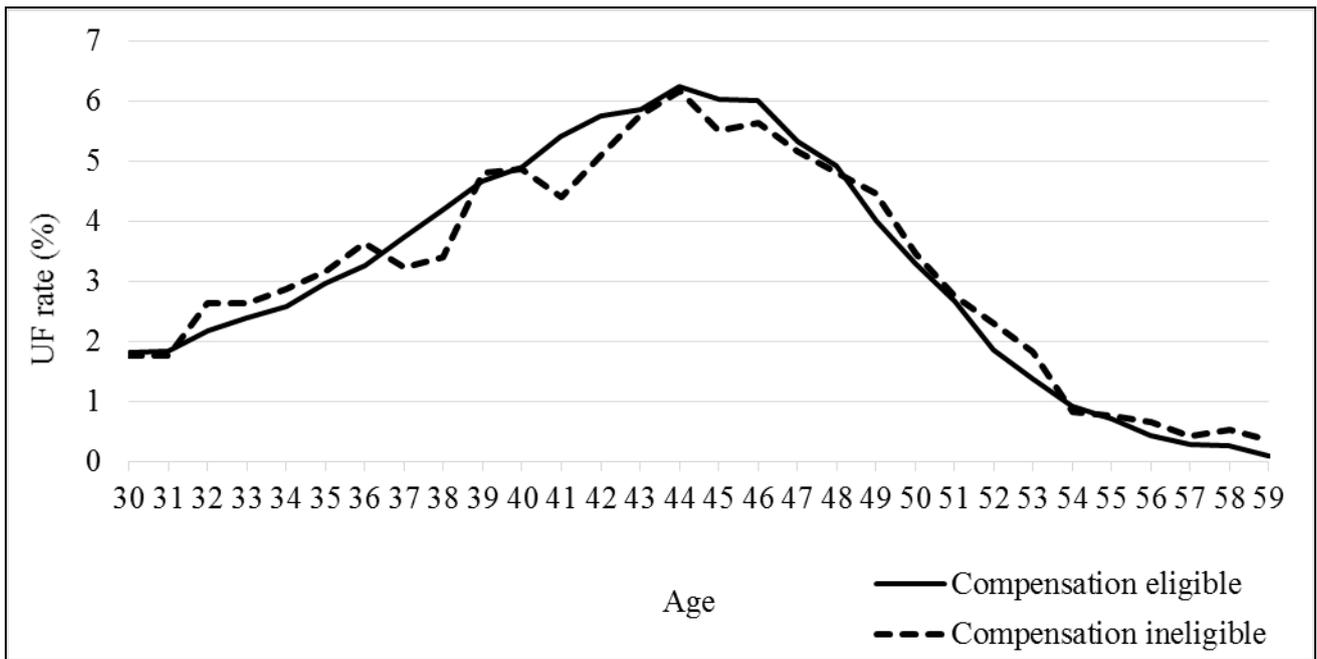Fig. 2. The average duration from UF diagnosis to hysterectomy surgery among women in different age groups.

Fig. 3. UF diagnosis rate among age groups; diagnosis rate = (# of each age of uterine fibroid patients/ # of total uterine fibroid patients)
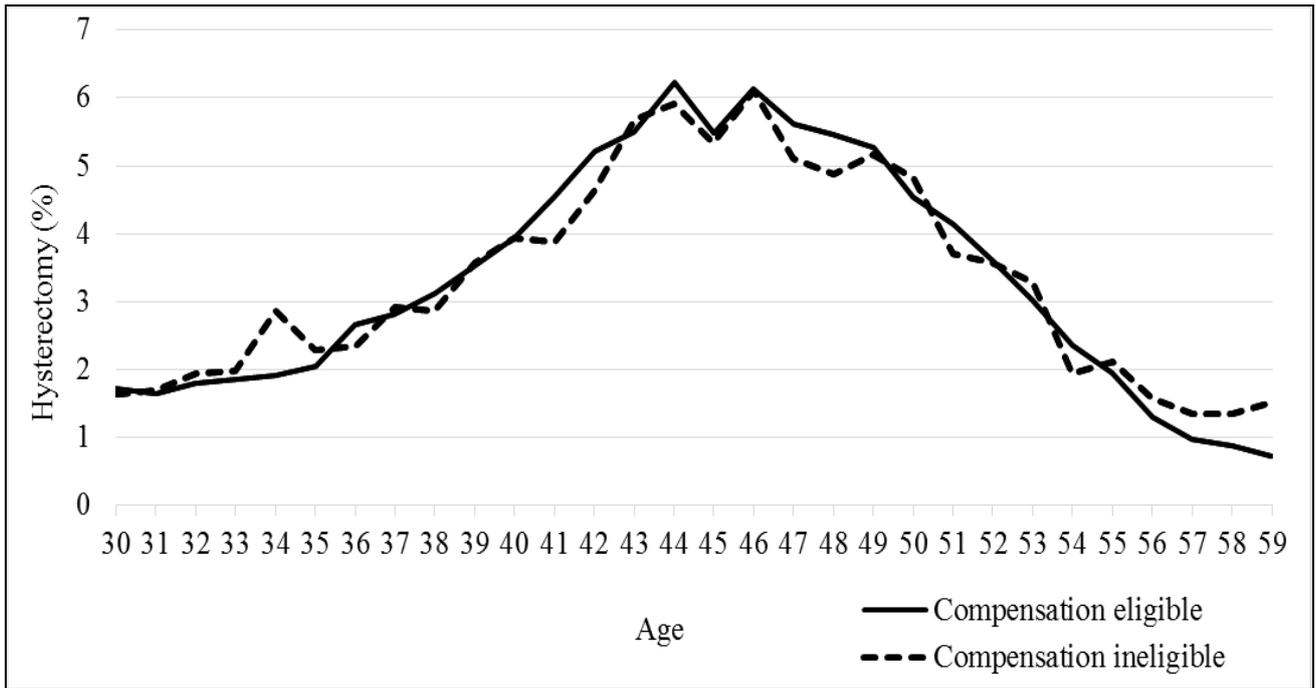
Fig. 4. Hysterectomy rate (HR) among women of different ages with uterine fibroid diagnosis; HR= (# of each age of hysterectomy patients, indication is uterine fibroid / # of total hysterectomy patients, indication is uterine fibroid)