CHAPTER 6

RESULTS

6.1 Break-even analysis

In the analysis of fixed cost, variable cost of the catheter unit, study has revealed that the maximum component was the variable cost with portion (56%) of the total cost, followed by fixed cost with portion (44%) of the same.

Table 6.1: Fixed cost and Variable cost of catheter unit in Ramallah Hospital, 2003

Cost Categories	Amount	%
Fixed cost	270,903.42	44%
Variable cost	342,641.21	56%
Total cost	**613,544.63**	**100%**

According to the fixed cost table (Table 6.2 in page 52), the equipment and furniture was the greatest cost ($149,245.00 or 55%), followed by salaries ($91,408.44 or 33.7%), followed by the overhead allocation (rent, utility, building maintenance, cleaning, management, doctors and nurses, and guard) with amount of $30,249.98 or 11.3%. Table 6.2 shows the details fixed cost of catheter unit.

According to the variable cost table (Table 6.3 in page 54), materials from central store was the greatest cost ($173,493.36 or 51%), followed by materials from medical centre store ($91,698.24 or 27%), followed by incentives ($62,886.89 or 18%), followed by sundry cost ($14,562.72 or 4%). Table 6.3 shows the details variable cost of catheter unit.

Table 6.2: Details Fixed Cost

	Fixed Cost									
	Overhead								Direct Government	Total FC
Month	Rent	Utility	Building Maintenance	Cleaning	Management	Doctors & Nurses	Guard	Salary	Equipment & Furniture	
Jan-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Feb-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Mar-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Apr-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
May-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Jun-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Jul-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Aug-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Sep-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Oct-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Nov-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Dec-03	78.28	1,301.19	104.44	475.27	403.52	99.59	58.53	7,617.37	12,437.08	22,575.29
Total	939.38	15,614.26	1,253.31	5,703.30	4,842.27	1,195.08	702.38	91,408.44	149,245.00	270,903.42

Source: Finance Department, MOH

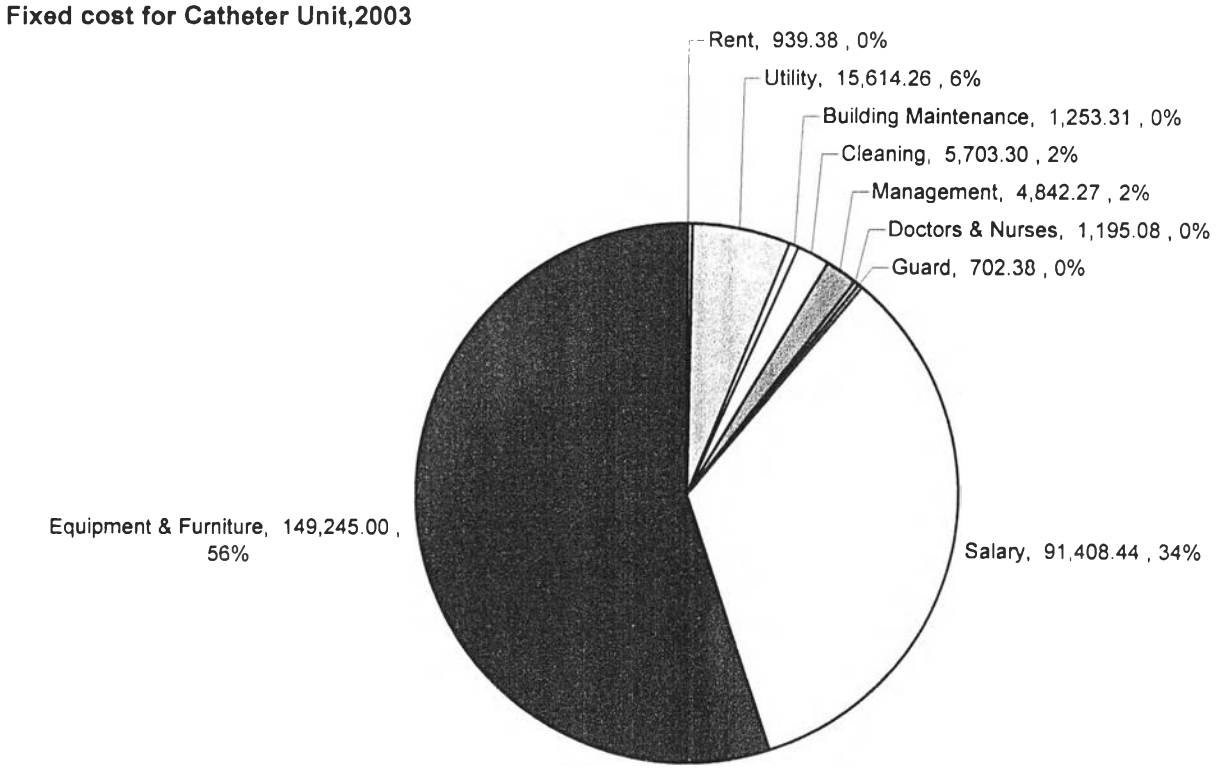

Figure 6.1: Details Fixed cost

Table 6.3 Details Variable Cost

Month	Incentives	Materials-Cen.Store		Material-Med.Store		Catheter	Total
		GOV.	Catheter	GOV.	Catheter		
Jan-03	4,795.11	4,999.10	3,184.00	-	9,022.22	326.40	22,326.83
Feb-03	4,795.11	29,915.14	-	-	12,888.89	387.23	47,986.38
Mar-03	5,948.67	8,451.45	-	3,021.22	-	202.70	17,624.04
Apr-03	5,905.11	8,823.21	8,190.00	5,150.89	875.56	329.74	29,274.51
May-03	1,691.11	7,975.43	-	-	-	195.74	9,862.29
Jun-03	6,661.11	4,618.24	2,125.56	-	-	587.58	13,992.48
Jul-03	5,707.11	35,494.56	-	-	3,866.67	229.99	45,298.33
Aug-03	7,100.89	31,413.57	-	39,825.00	-	217.78	78,557.23
Sep-03	4,024.67	5,989.72	-	-	-	425.78	10,440.17
Oct-03	6,248.44	4,571.88	9,793.56	-	-	11,141.11	31,754.99
Nov-03	3,844.22	15.72	4,066.67	4,132.80	-	160.00	12,219.41
Dec-03	6,165.33	2,332.22	1,533.33	12,915.00	-	358.67	23,304.56
Total	62,886.89	144,600.25	28,893.11	65,044.91	26,653.33	14,562.72	342,641.21

Source: Finance Department, MOH.

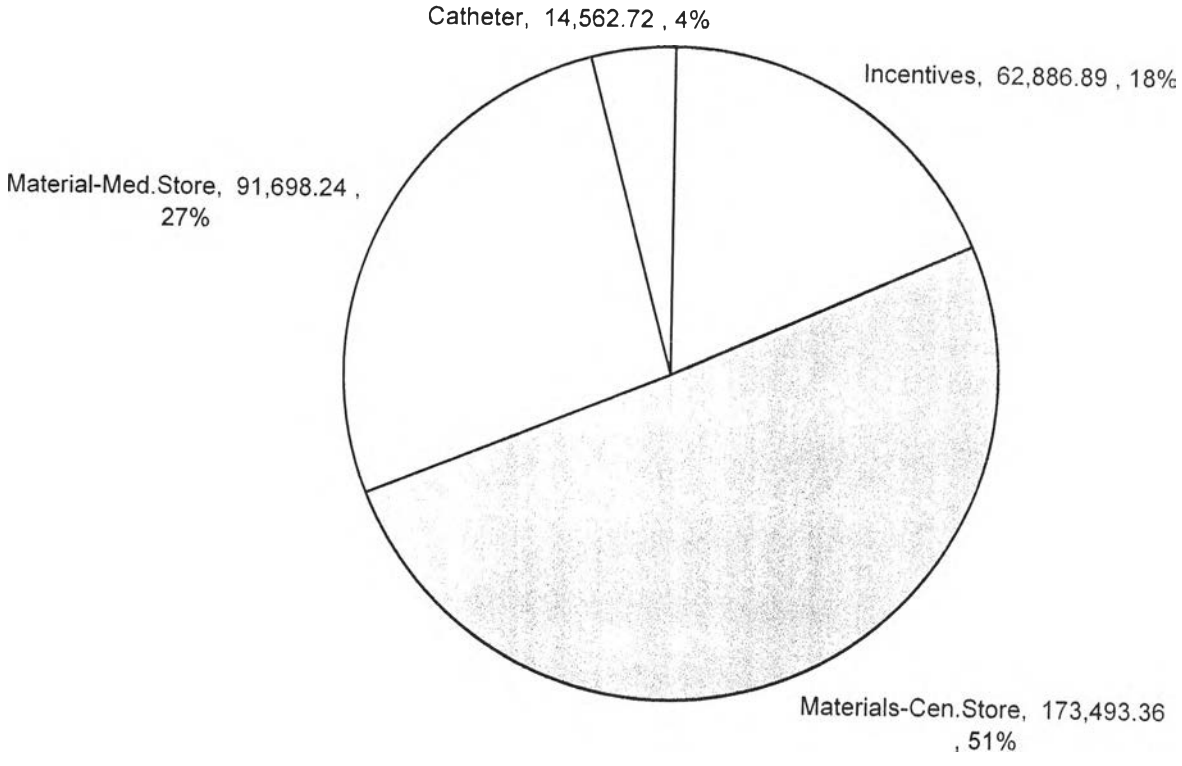

Figure 6.2:Details Variable cost

According to the formula VC= γ_1Diagnosis+γ_2Balloon+γ_3Pacemaker, data entered to estimate the unit variable cost for each function (Diagnosis, Balloon, and Pacemaker), it was found that the unit variable cost for diagnosis is $140.5139, unit variable cost for balloon is $532.3362, and unit variable cost for pacemaker is $1,689.898.

VC=140.5139 Diagnosis+532.3362 Balloon+1,689.898 Pacemaker

se	(121.3900)	(870.3585)	(3939.648)
t-test	(1.15754)	(0.611629)	(0.428947)
prob.	(0.2768)	(0.5559)	(0.68780)

r^2=0.185624

Adjusted r^2=0.004651

n= 12

degree of freedom=9

Ordinary least Square (OLS) method has been used in estimating the result for unit variable cost of diagnosis, balloon, and pacemaker. However, in testing the significance of individual independent variables, t-test indicates that none of the independent variables are statistically significant at 5% level. Further, high standard error revealed that, independent variables are not good estimators in explaining dependent variables (variable cost). T-test indicates that the all independent variables are statically insignificant, it's important to check the overall significant of the model using F-test.

From F-test, it could be seen that the overall result is statistically insignificant. This implies that this model is not statistically significant in explaining the variable cost of patients.

The Coefficient of determination, r^2

The coefficient of determination r^2= 0.185624, which means that only 18.56% of the variation in the total variable cost can be explained by the explanatory variables (Diagnosis, Balloon, and Pacemaker).

In examining the above results, it could be seen that the model is statistically insignificant; this is due to the fact that the number of observations (12 observations) are not adequate to run a regression model. The insignificant number of observation cause explanatory variables (Diagnosis, Balloon, and Pacemaker) statistically insignificant and low r^2 (co-efficient of determination). However, in practice these three explanatory variables (Diagnosis, Balloon, and Pacemaker) play significant role in determining total variable cost. Therefore, in determining the break-even point, the above estimated unit variable cost will be used. From this result, the variable cost formula can be writing as follows:

$342,641.21=$140.5139*Diagnosis+$532.3362*Balloon+$1,689.898*Pacemaker

Calculate Break-even point

6.1.1 According to the previous formula, equivalent diagnosis (output) can be estimated, by convert each of balloon and pacemaker to diagnosis. Equivalent diagnosis (output) will be use to calculate VC, TR and Break-even point for all functions together to catheter unit. Cost ratio has been used to calculate equivalent diagnosis (output) by divided unit variable cost for each balloon and pacemaker upon the unit variable cost for diagnosis, the result will be multiply with the number of patients (number of balloon patients is 163, and number of pacemaker patients is 23).

$$= \frac{532.3362}{140.5139} = 3.7885$$

γ_2/γ_1 * Balloon=3.7885*163= 617.5255

$$\gamma_3/\gamma_1 = \frac{1,689.898}{140.5139} = 12.0266$$

γ_3/γ_1* Pacemaker=12.0266*23= 276.612

Equivalent Diagnosis (output) = Diag+γ_2/γ_1Ball+γ_3/γ_1 Pace

= 1557+617.5255+276.612= 2451.1375

This result means that there are 2451.1375 equivalent diagnosis (output) patients visited catheter unit in 2003.

6.1.2 Calculate average price for equivalent diagnosis by using the following formula

$$\text{Average price} = \frac{\sum Total\ \text{Re}venue}{EquivalentDiagnosis} = \frac{\$987{,}500.00}{2451.1375} = \$402.874$$

The amount $402.874 means Average price per patient for equivalent diagnosis (output).

6.1.3 Calculate Break-Even point by using the following formula

$$\frac{FixedCost}{\text{Pr}ice/unit - VC/unit}$$

$$= \frac{\$270{,}903.00}{402.874 - 140.5139}$$

$$= \frac{\$270{,}903.00}{\$262.36} = 1032.562$$

From this result, break-even point where total cost = total revenue were received with 1,032.562 equivalent number of patients. Table 6.4 explains break-even point for catheter unit.

Table 6.4: Break-even point for catheter unit, 2003

	Total Revenue	Total Cost
Fixed cost		$270,903.00
Variable cost = 1032.562*140.5139		$145,089.32
Total Revenue= 1032.562*402.874	$415,992.32	
Total	$415,992.32	$415,992.32

6.1.4 Calculate break-even point for each function (Diagnosis, Balloon, and Pacemaker). To calculate break-even point for each function, the following steps has been used.

Step 1: Calculate the equivalent number of patients for each function by divided the equivalent diagnosis (output) that represent for break-even point upon the equivalent number of patients requested, the result will be multiply with equivalent number of patients requested for each function (number of patients requested for diagnosis is 1557, number of patients requested for balloon is 617.5255, and number of patients requested for pacemaker is 276.612).

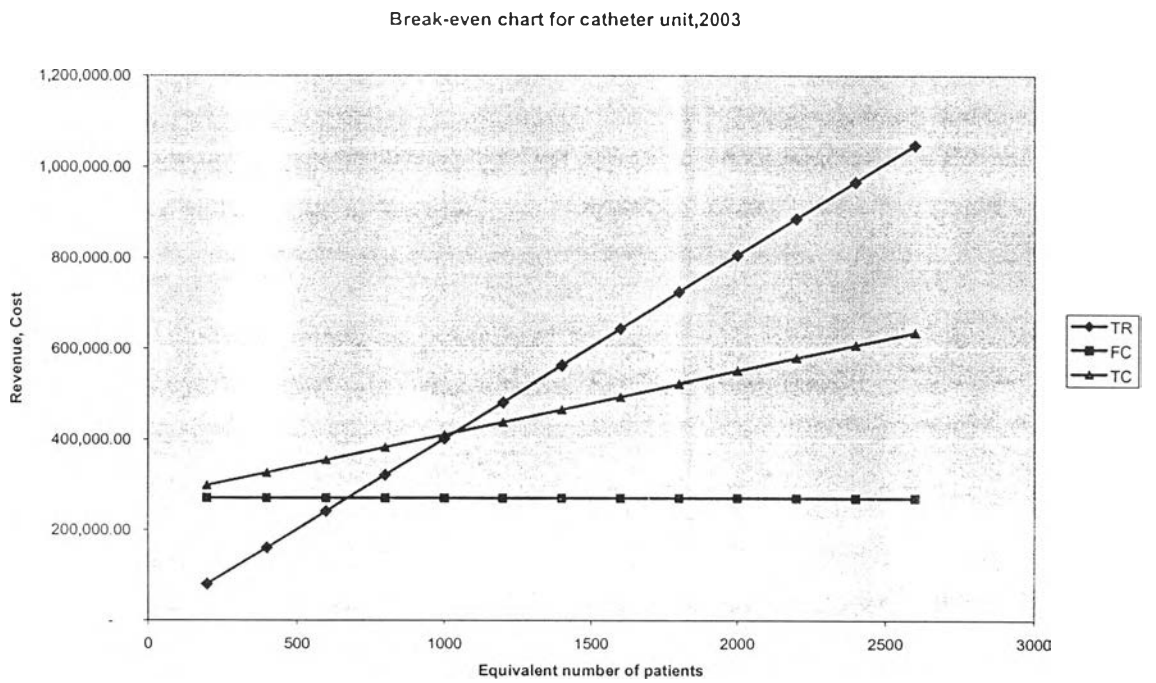

Figure 6.3: Break-even chart for catheter unit, 2003

Equivalent number of diagnostic patients= $\frac{1032.562}{2451.1375}$ *1557=655.899

Equivalent number of balloon patients= $\frac{1032.562}{2451.1375}$ *617.5255= 260.138

Equivalent number of pacemaker patients= $\frac{1032.562}{2451.1375}$ *276.612= 116.525

Step 2: Convert equivalent patients to real number of patients for each function in the catheter unit to estimate the break-even point for each function by using cost ratio. To receive at break-even point for each function, unit variable cost for diagnosis (γ_1) is divided upon unit variable cost for balloon and pacemaker (γ_2, γ_3), the result will be multiply with equivalent number of patients for balloon and pacemaker (equivalent number of patients for balloon is 260.138, and equivalent number of patients for pacemaker is 116.525).

$\gamma_1/\gamma_2 = \frac{140.5139}{532.3363} = 0.26396$

γ_1/γ_2* Equivalent Balloon= 0.26396 *260.138=68.665

$\gamma_1/\gamma_3 = \frac{140.5139}{1689.898} = 0.08315$

γ_1/γ_3* Equivalent Pacemaker =0.08315*116.525=9.689

From this results, study has revealed that the break-even point for patients in the catheter unit in 2003 actualize with approximately 656 diagnostic patients, 69 balloon patients, and 10 pacemaker patients.

Table 6.5 demonstrates the break-even point for each functions, the requested number of patients for each function were higher than the break-even point.

Table 6.5: The number of patients requested and the break-even point

Catheter Unit functions	**Break-even point (Number of patients)**	**Number of patients requested**
Diagnosis	656	1557
Balloon	69	163
Pacemaker	10	23
Total	**735**	**1743**

6.2 Willingness to Pay (WTP)

The results of the study include two main categories:

1) Profile of the study population: general, social, and living environment.
2) Relationships between independent variables and WTP for Diagnosis, Balloon, and Pacemaker.

Primary data -see appendix- was collected by using random sample for population inside houses from Nablus, Ramallah cities, 4villages and 2camps around these cities.

This sample includes information about general, social, and living environment that influence on WTP for diagnosis and treatment in the catheter unit.

6.2.1 Profile of the study population

Table 6.6: General results for profile population sample

General (Gender, age, education, income, work status, marital status, number of children, place of resident, health insurance, type of health insurance, heart disease, problem heart, kind of heart disease).

Table 6.6.a: Gender, frequency, and percent for population sample

Gender	Frequency	Percent%
Male	61	55
Female	50	45
Total	111	100

Table 6.6.b: Age, frequency, and percent for population sample

Age	Frequency	Percent%
Less than 30	28	25.2
30-39	34	30.6
40-49	28	25.2
50-59	9	8.1
More than 60	12	10.8
Total	111	100

Table 6.6.c: Education, frequency, and percent for population sample

Education	Frequency	Percent%
Illiterate	11	9.9
Basic school	14	12.6
Secondary school	17	15.3
University	69	62.2
Total	111	100

Table 6.6.d: Income, frequency, and percent for population sample

Income	Frequency	Percent%
Less than 300	34	30.7
300-600	48	43.2
601-900	13	11.7
901-1,200	8	7.2
1,201-1,500	4	3.6
More than 1,500	4	3.6
Total	111	100

Table 6.6.e: Work status, frequency, and percent for population sample

Work status	Frequency	Percent%
Government sector	54	48.6
Private sector	30	27
NGOs	4	3.6
Unemployed	23	20.7
Total	111	100

Table 6.6.f: Marital status, frequency, and percent for population sample

Marital status	Frequency	Percent%
Married	67	60.4
Divorced	14	12.6
Single	30	27
Total	111	100

Table 6.6.g: Number of children, frequency, and percent for population sample

Number of children	Frequency	Percent%
1	7	6.3
2	7	6.3
3	7	6.3
4	10	9
5	12	10.8
6	8	7.2
7	4	3.6
8	1	.9
10	1	.9
0	54	48.6
Total	111	100

Table 6.6.h: Place of resident, frequency, and percent for population sample

Place of resident	Frequency	Percent%
City	72	64.9
Village	24	21.6
Camps	15	13.5
Total	111	100

Table 6.6.i: Health insurance, frequency, and percent for population sample

Health insurance	Frequency	Percent%
No	25	23.4
Yes	85	76.6
Total	111	100

Table 6.6.j: Type of health insurance, frequency, and percent for population sample

Type of health insurance	Frequency	Percent%
Government compulsory insurance	51	45.9
Government voluntary insurance	20	18
Private insurance	15	12.6
No insurance	25	23.4
Total	111	100

Table 6.6.k: Family cardiovascular disease, frequency, and percent for population sample

Family Cardiovascular disease	Frequency	Percent%
No	73	65.8
Yes	38	34.2
Total	111	100

Table 6.6.l: cardiovascular disease, frequency, and percent for population sample

Cardiovascular disease	Frequency	Percent%
No	93	83.8
Yes	18	16.2
Total	111	100

Table 6.6.m: Kind of CVD, frequency, and percent for population sample

Kind of CVD	Frequency	Percent%
Hypertensive disease	12	10.8
Ischemic heart disease	5	4.5
Other heart disease	1	.9
No heart disease	93	83.8
Total	111	100

Table 6.6.a-m shows the distribution of samples as follows:

1. 55% of the study sample were males, 45% were females.
2. 25.20% of the study sample less than 30 years old, 30.60 % was in 30-39 years old, 25.2 % were in 40-49years old, 8.1%were in 50-59 & 10.8% were more than 60 years old.
3. 9.9% of the study sample illiterate study level, 12.6% basic school, 15.3% secondary school, 62.2% university level study.
4. 30.7% of the study sample income less than $300, 43.2% were in $300-600 income, 11.7% were in $601-900, 7.2% were in $901-1,200, 3.6%were in $1,201-1,500, 3.6% were more than $1,500.
5. 48.6%of the study sample working in government sector, 27%working in private sector, 3.6% working in NGOs, 20.7% unemployed.
6. 60.4% of the study sample is married, 12.6% are divorced, and 27% are single.
7. 6.3% of the study sample one children, 6.3% two children, 6.3% three children, 9% four children, 10.8% five children, 7.2% six children, 3.6% seven children, 0.9% eight children, 0.9% ten children.
8. 64.9% of the study sample living in city, 21.6 % living in village, and 13.5% living in camps.
9. 23.4% of the study sample hadn't health insurance, 76.6% had health insurance.
10. 45.9% of the study sample has government compulsory insurance, 18% have government voluntary insurance, and 12.6% have private insurance.
11. 65.8% answer no family heart disease, 34.2% answer yes.
12. 83.8% no problem in his heart, 16.2% answered yes problem in his heart.
13. 10.8% own hypertensive disease, 4.5% own ischemic heart disease, 0.9% own other heart disease.

Chi-square Distribution

To identify the difference between variance in each group, Chi-square distribution is more appropriate, i.e. $\sigma_1^2, \sigma_2^2, and \sigma_n^2$.

Table 6.7: Diagnosis

Variable name	Chi value	Chi critical	P value
Age	35.925	55.758	0.654
Education	39.255	43.77	0.120
Income	49.435	67.50	0.496
Work status	33.58	43.77	0.298
Gender	9.482	18.30	0.487
Marital status	36.053	31.41	0.015*
Number of children	67.944	79.08	0.344
Place of resident	38.363	31.41	0.08
Health insurance	11.631	18.30	0.311
Type of health insurance	13.482	28.869	0.762
Family heart disease	14.429	18.30	0.154
Problem heart	15.391	18.30	0.118
Kind of heart disease	9.685	21.026	0.644

** means statistically significant*

Table 6.8: Balloon

Variable name	Chi value	Chi critical	P value
Age	59.303	67.42	0.127
Education	70.113	55.758	0.001*
Income	67.656	79.08	0.232
Work status	53.67	55.758	0.029*
Gender	15.860	21.026	0.198
Marital status	37.15	36.415	0.042*
Number of children	96.305	113.145	0.256
Place of resident	41.991	36.415	0.013*
Health insurance	22.577	21.026	0.032*
Type of health insurance	29.64	36.415	0.197
Family heart disease	20.701	21.026	0.055
Problem heart	30.881	21.026	0.002*
Kind of heart disease	10.38	23.689	0.732

* *means statistically significant*

Table 6.9: Pacemaker

Variable name	Chi value	Chi critical	P value
Age	76.64	90.53	0.221
Education	70.90	67.504	0.034*
Income	108.21	101.87	0.046*
Work status	72.72	55.758	0.025*
Gender	22.062	27.587	0.182
Marital status	38.635	43.77	0.195
Number of children	121.484	113.145	0.040*
Place of resident	46.912	43.77	0.069
Health insurance	26.254	27.587	0.070
Type of health insurance	32.128	43.77	0.460
Family heart disease	26.356	27.58	0.068
Problem heart	31.136	27.58	0.019*
Kind of heart disease	10.40	23.68	0.732

* *means statistically significant*

The relationship between independent variables (age, education, income, work status, gender, marital status, place of resident, type of health insurance, knowledge about heart disease, and heart disease) and WTP can be obtained. The age group 30-39 willing to pay for diagnosis more than another age groups (mean $290), followed by age group less than 30 (mean $264.29), followed by age group 40-49 (mean $255.54), followed by age group more than 60 (mean $254.55), and followed by age group 50-59 (mean $211.11).

Age group less than 30 are willing to pay for balloon more than another age groups (mean $526.78), followed by age group 30-39 (mean $521.88), followed by age group 40-49 (mean $494.64), followed by age group 50-59 (mean $400), and followed by age group more than 60 (mean $350).

Age group 30-39 are willing to pay for cardiac pacemaker more than other age groups (mean $973.44), followed by age group less than 30 (mean $932.15), followed by age group 40-49 (mean $921.43), followed by age group 50-59 (mean $644.44), and followed by age group more than 60 (mean $550). Table 6.10 shows the relationship between age and WTP.

Table 6.10: The relationship between age & WTP

Age		Diagnosis	Balloon	Pacemaker
less than 30	Mean	264.2857	526.7857	932.1429
	N	28	28	28
30-39	Mean	290.0000	521.8750	973.4375
	N	34	32	32
40-49	Mean	255.5357	494.6429	921.4286
	N	28	28	28
50-59	Mean	211.1111	400.0000	644.4444
	N	9	9	9
More than 60	Mean	254.5455	350.0000	550.0000
	N	11	12	12
Total	Mean	264.6818	487.1560	875.6881
	N	110	109	109
ANOVA Test	$p <$	(0.759)	(0.462)	(0.302)
	F	(0.468)	(0.908)	(1.231)

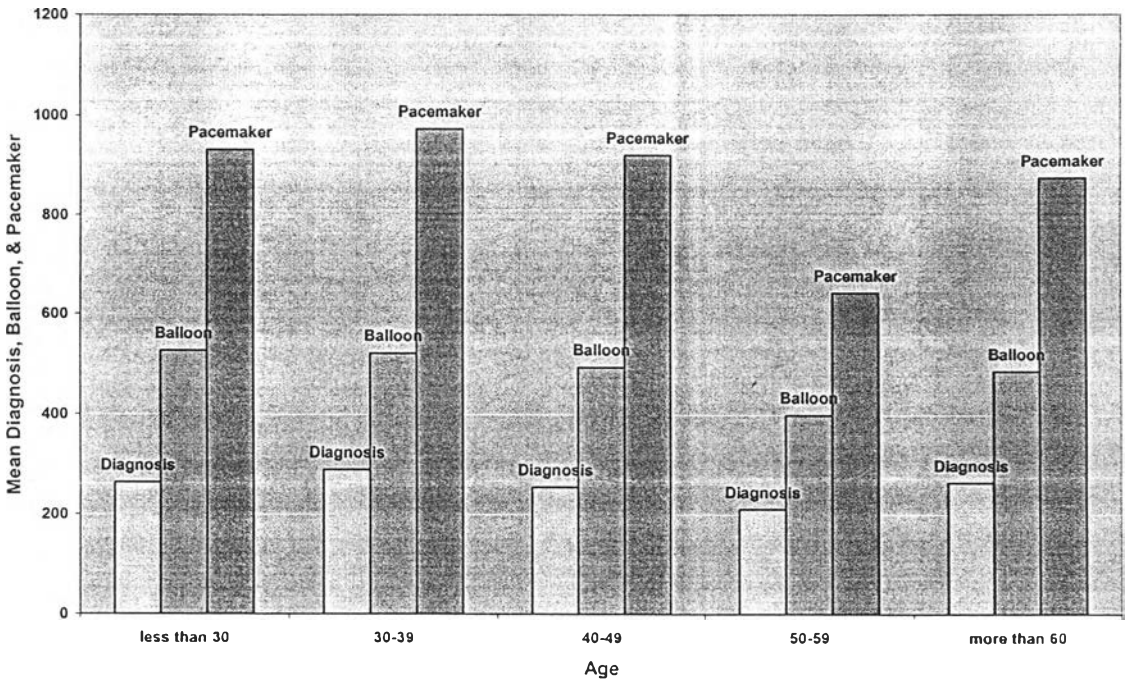

Figure 6.4: Age & Mean Diagnosis, Balloon, and Pacemaker

The relationship between education and WTP shows that individuals with university degree are willing to pay for diagnosis more than another groups (mean $291.67), followed by individuals with secondary school degree (mean $242.86), followed by individuals with basic school degree (mean $231.43), and followed by illiterate individuals (mean $160).

Individuals with university degree are willing to pay for balloon more than another groups (mean $566.17), followed by individuals with basic school degree (mean $403.57), followed by individuals with secondary school degree (mean $338.46), and followed by illiterate individuals (mean $290.90).

Individuals with university degree are willing to pay for pacemaker more than another groups (mean $1,064.71), followed by individuals with basic school degree (mean $657.14), followed by individuals with secondary school degree (mean $500), and followed by illiterate individuals (mean $445.46). Table 6.11 shows the relationship between education and WTP.

Table 6.11: The relationship between education & WTP

Education		Diagnosis	Balloon	Pacemaker
Illiterate	Mean	160.0000	290.9091	445.4545
	N	10	11	11
Basic school	Mean	231.4286	403.5714	657.1429
	N	14	14	14
Secondary school	Mean	242.8571	338.4615	500.0000
	N	14	13	13
University	Mean	291.6667	566.1765	1,064.7059
	N	69	68	68
Total	Mean	265.0935	488.2075	877.3585
	N	107	106	106
ANOVA Test	$p <$	(0.083)	(0.007)*	(0.001)*
	F	(2.288)	(4.251)	(5.772)

* Statically significant

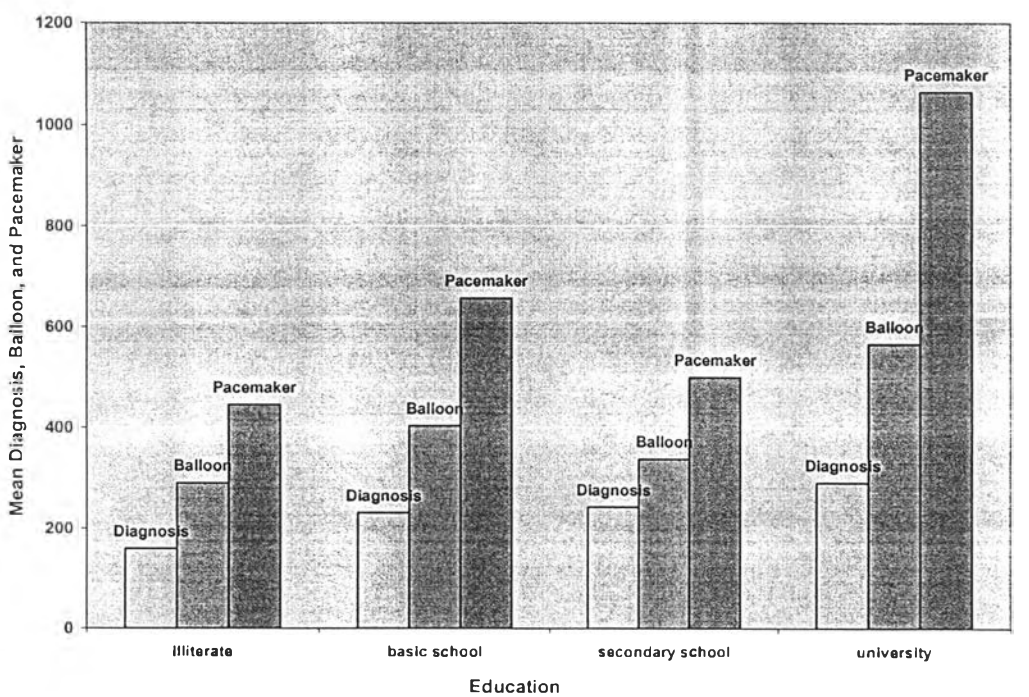

Figure 6.5: Education & Mean Diagnosis, Balloon, and Pacemaker

The relationship between income and WTP shows that individuals who have income more than $1,500 are willing to pay for diagnosis more than another income groups (mean $375), followed by income group $601-900 (mean $292.31), followed by income group $300-600 (mean $285.63), followed by income group less than $300 (mean

$240.38), followed by income group $1,201-1,500 (mean $163.75), and followed by income group $901-1,200 (mean $162.50).

Income group more than $1,500 are willing to pay for balloon more than another income groups (mean $850), followed by income group $300-600 (mean $551.04), followed by income group $601-900 (mean $542.30), followed by income group 901-$1,200 (mean $412.50), followed by income group $1,201-1,500 (mean $400), and followed by income group less than $300 (mean $388).

Income group more than $1,500 are willing to pay for pacemaker more than another groups (mean $1,600), followed by income group $601-900 (mean $1,100), followed by income group $300-600 (mean $982.29), followed by income group $901-1,200 (mean $812.50), followed by income group $1,201-1,500 (mean $800), and followed by income group less than $300 (mean $648). Table 6.12 shows the relationship between income and WTP.

Table 6.12: The relationship between income & WTP

Income ($)		Diagnosis	Balloon	pacemaker
less than 300	Mean	240.3846	388.0000	648.0000
	N	26	25	25
300-600	Mean	285.6250	551.0417	982.2917
	N	48	48	48
601-900	Mean	292.3077	542.3077	1,100.0000
	N	13	13	13
901-1200	Mean	162.5000	412.5000	812.5000
	N	8	8	8
1201-1500	Mean	163.7500	400.0000	800.0000
	N	4	4	4
More than 1500	Mean	375.0000	850.0000	1,600.0000
	N	4	4	4
Total	Mean	264.2233	504.9020	919.1176
	N	103	102	102
ANOVA Test	$p <$	(0.171)	(0.073)	(0.076)
	F	(1.588)	(2.093)	(2.068)

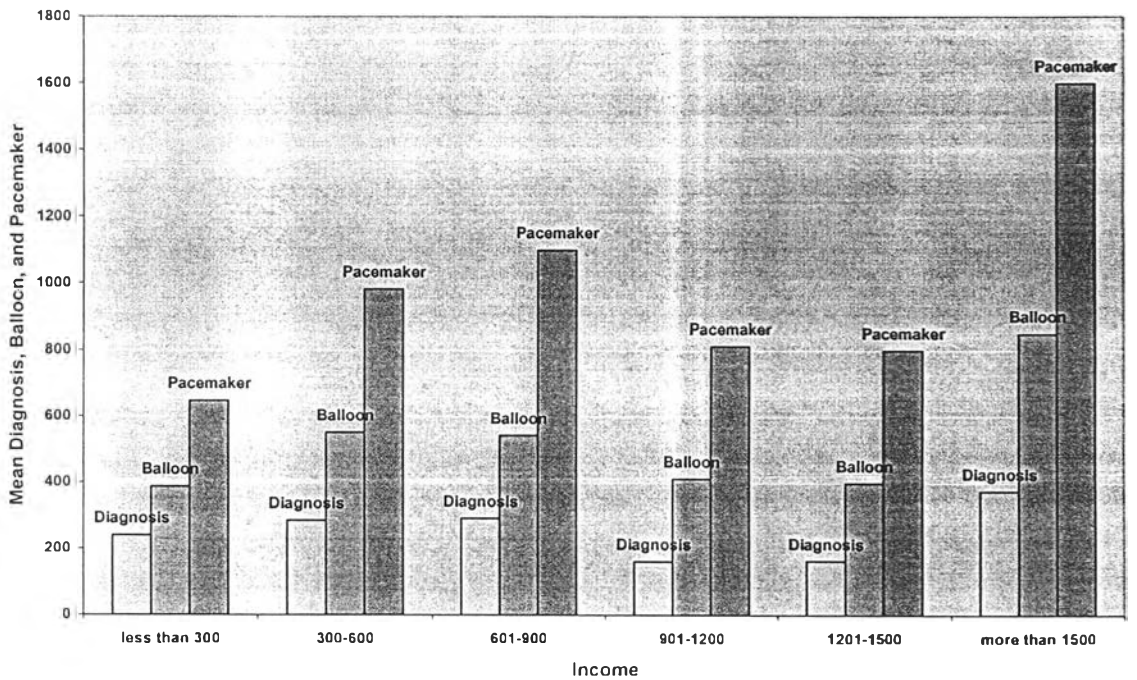

Figure 6.6: Income & Mean Diagnosis, Balloon, and Pacemaker

The relationship between work status and WTP shows that NGOs employee are willing to pay for diagnosis, balloon and pacemaker more than another groups (mean \$487.50, \$737.50, and \$1,037.50 respectively), private sector employee are willing to pay for diagnosis more than government sector and unemployed (mean \$269.66, \$263.43, and \$207.50 respectively), but government sector employee are willing to pay for balloon and pacemaker more than private sector and unemployed (mean \$517.30, \$513.33, and \$307.14 respectively for balloon, \$999.04, \$913.33, and \$445.24 respectively for pacemaker). Table 6.13 shows the relationship between work status and WTP.

Table 6.13: The relationship between work status & WTP

Work status		Diagnosis	Balloon	Pacemaker
Government sector	Mean	263.4259	517.3077	999.0385
	N	54	52	52
Private sector	Mean	269.6667	513.3333	913.3333
	N	30	30	30
NGOs	Mean	487.5000	737.5000	1,037.5000
	N	4	4	4
Unemployed	Mean	207.5000	307.1429	445.2381
	N	20	21	21
Total	Mean	263.1019	483.1776	867.7570
	N	108	107	107
ANOVA Test	$p <$	(0.017)*	(0.019)*	(0.011)*
	F	(3.536)	(3.446)	(3.882)

* Statically significant

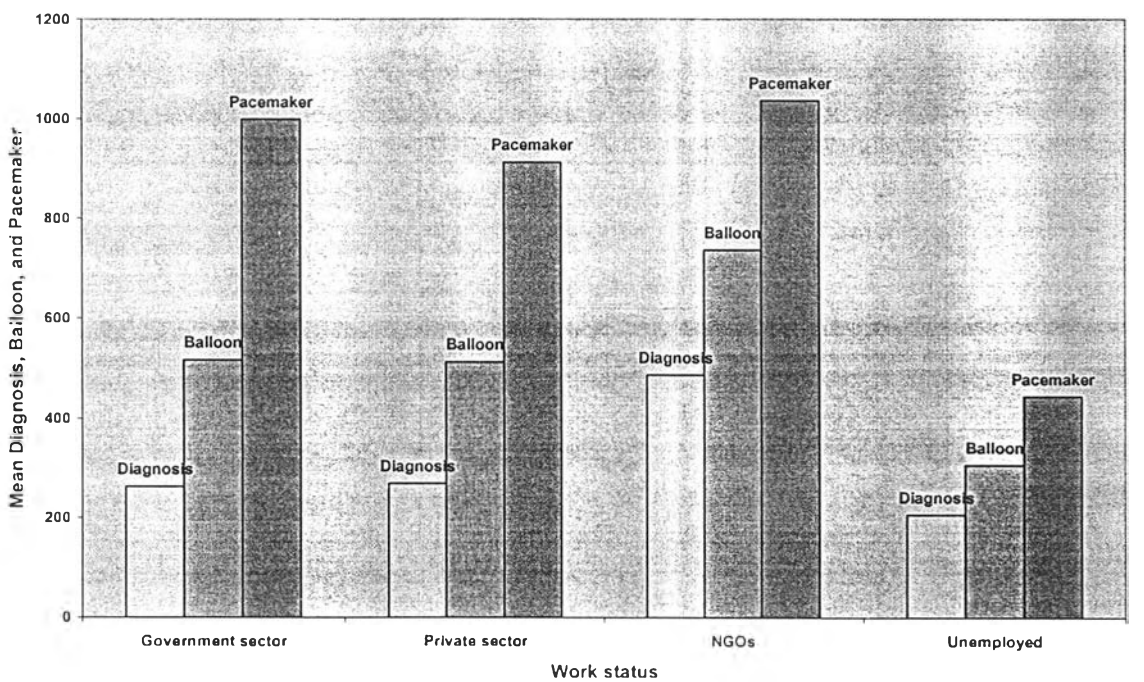

Figure 6.7: Work status & Mean Diagnosis, Balloon, & Pacemaker

The relationship between gender and WTP shows that females are willing to pay for diagnosis, balloon, and pacemaker more than male (mean 284, and 542.71, and $978.12 respectively). Males are willing to pay for diagnosis, balloon, and pacemaker (mean 248.58, 443.44, and $795.08 respectively). Table 6.14 shows the relationship between gender and WTP.

Table 6.14: The relationship between gender & WTP

Gender		Diagnosis	Balloon	Pacemaker
Male	Mean	248.5833	443.4426	795.0820
	N	60	61	61
Female	Mean	284.0000	542.7083	978.1250
	N	50	48	48
Total	Mean	264.6818	487.1560	875.6881
	N	110	109	109
t-test	$p <$	(0.260)	(0.111)	(0.159)
	F	(0.008)	(0.271)	(0.076)

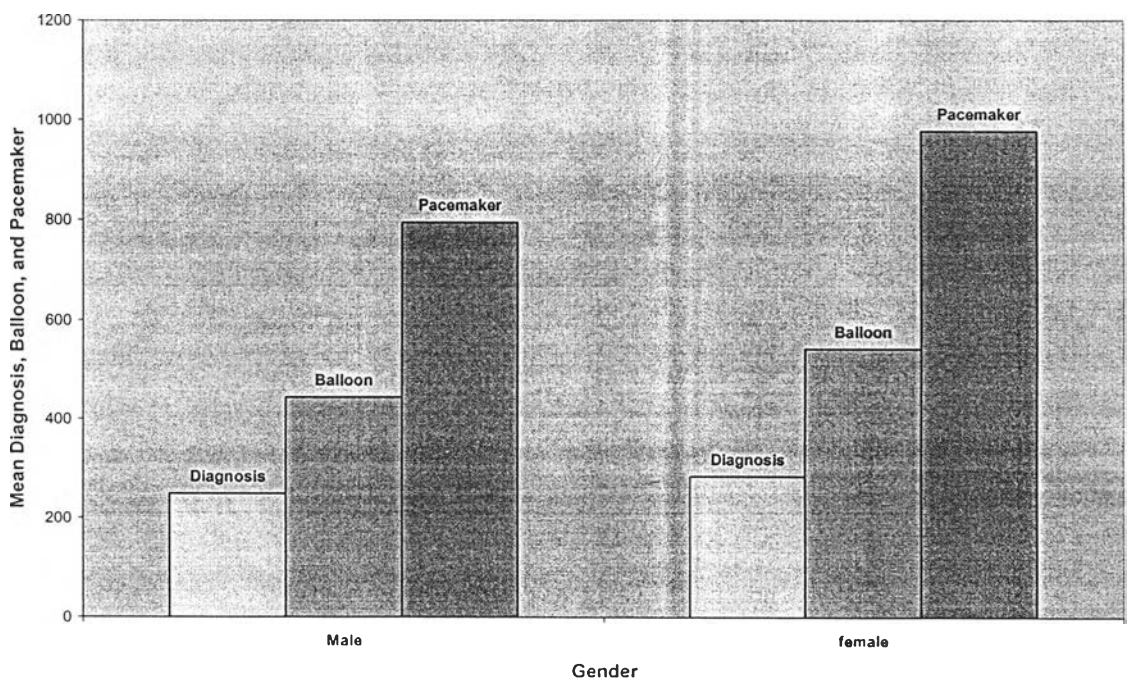

Figure 6.8: Gender & Mean Diagnosis, Balloon, & Pacemaker

The relationship between marital status and WTP shows that single is willing to pay for diagnosis, balloon, and pacemaker more than married and divorced (mean $294.83, $525, and $923.21 respectively), followed by married (mean $261.97 for diagnosis, mean $485.07 for balloon, and mean $868.66 for pacemaker), and divorced is willing to pay for diagnosis, balloon, and pacemaker (mean $183.93, $361.54, and $707.69 respectively). Table 6.15 shows the relationship between marital status and WTP.

Table 6.15: The relationship between marital status & WTP

Marital status		Diagnosis	Balloon	Pacemaker
Married	Mean	261.9697	485.0746	868.6567
	N	66	67	67
Divorced	Mean	183.9286	361.5385	707.6923
	N	14	13	13
Single	Mean	294.8276	525.0000	923.2143
	N	29	28	28
Total	Mean	260.6881	480.5556	863.4259
	N	109	108	108
ANOVA Test	$p <$	(0.099)	(0.302)	(0.627)
	F	(2.363)	(1.209)	(0.470)

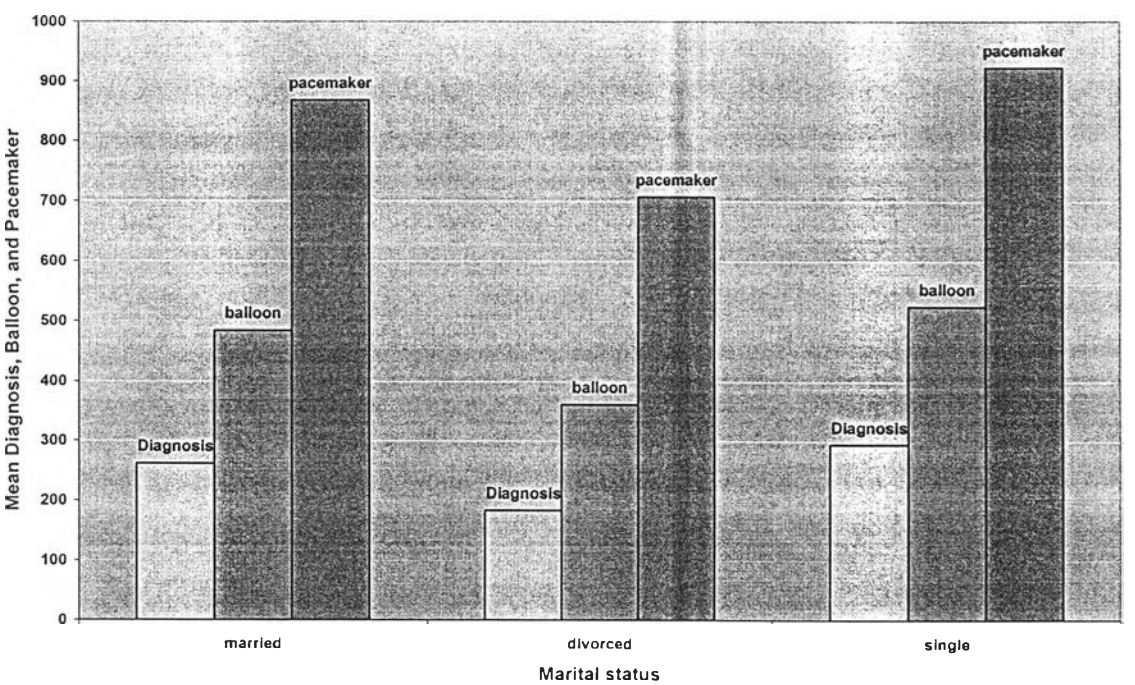

Figure 6.9: Marital status & Mean Diagnosis, Balloon, & Pacemaker

The relationship between place of resident and WTP shows that individuals who stay in cities are willing to pay for diagnosis, balloon, and pacemaker more than another individuals who stay in villages and camps (mean $298.59, $531.69, and $945.07 respectively), followed by individuals who stay in villages willing to pay for diagnosis, balloon, and pacemaker (mean $204.79, $420.833, and $820.833 respectively), followed

by individuals who stay in camps (mean \$200, \$375, and \$617.85 respectively). Table 6.16 shows the relationship between place of resident and WTP.

Table 6.16: The relationship between place of resident & WTP

Place of resident		Diagnosis	Balloon	Pacemaker
City	Mean	298.5915	531.6901	945.0704
	N	71	71	71
Village	Mean	204.7917	420.8333	820.8333
	N	24	24	24
Camps	Mean	200.0000	375.0000	617.8571
	N	15	14	14
Total	Mean	264.6818	487.1560	875.6881
	N	110	109	109
ANOVA Test	$p <$	(0.012) *	(0.130)	(0.228)
	F	(4.588)	(2.076)	(1.501)

* Statically significant

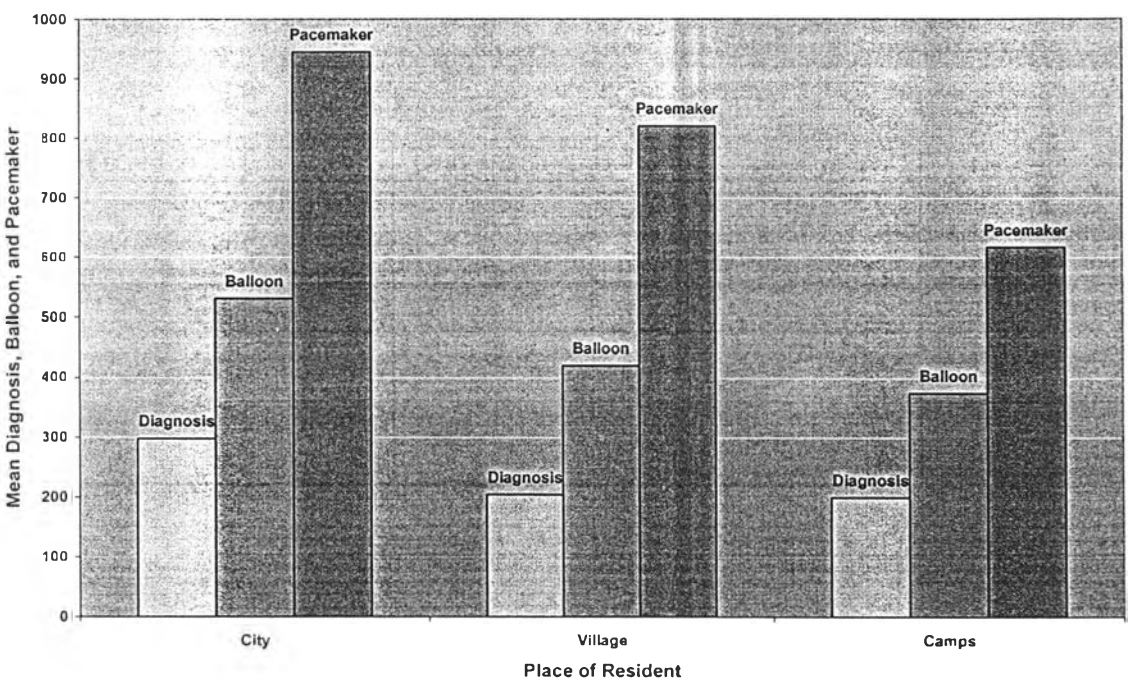

Figure 6.10: Place of resident & Mean Diagnosis, Balloon, & Pacemaker

The relationship between health insurance and WTP shows that health insurance participants are willing to pay for diagnosis, balloon and pacemaker more than individuals who haven't health insurance (mean \$281.84, \$518.072, and \$943.37 respectively), for individuals who haven't health insurance are willing to pay for

diagnosis, balloon, and pacemaker (mean $213.6, $384, and $646 respectively). Table 6.17 shows the relationship between health insurance and WTP.

Table 6.17: The relationship between health insurance & WTP

Health Insurance		Diagnosis	Balloon	Pacemaker
No	Mean	213.6000	384.0000	646.0000
	N	25	25	25
Yes	Mean	281.8452	518.0723	943.3735
	N	84	83	83
Total	Mean	266.1927	487.0370	874.5370
	N	109	108	108
t-test	$p <$	(0.067)	(0.069)	(0.053)
	F	(5.815)	(2.723)	(1.721)

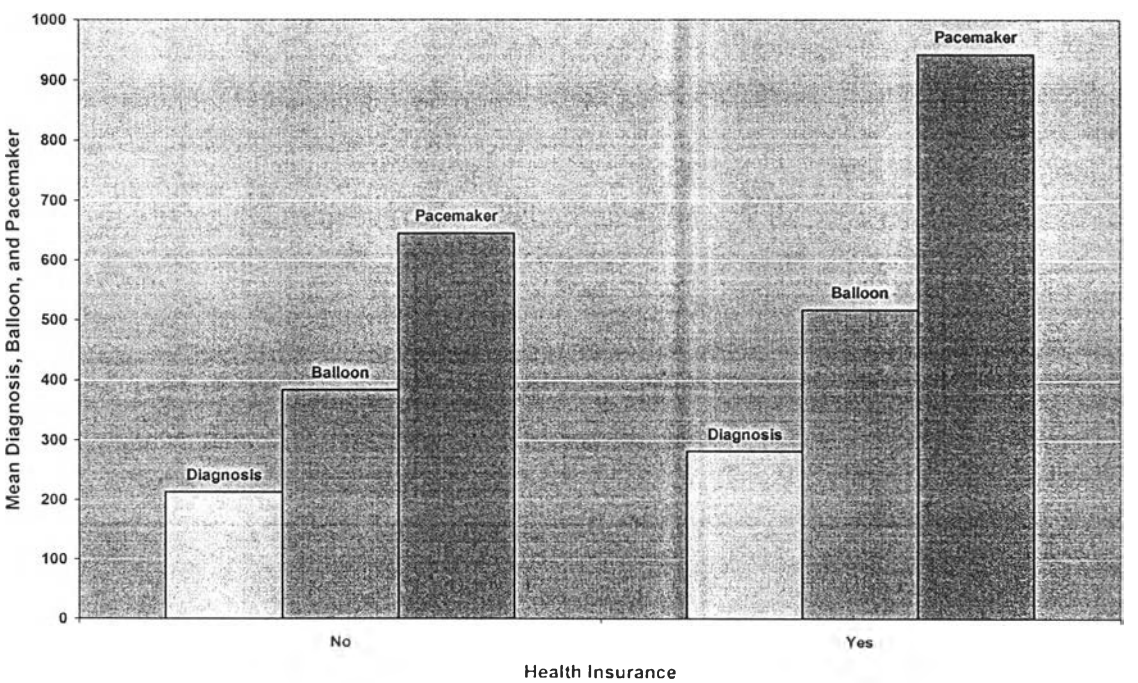

Figure 6.11: Health insurance & Mean Diagnosis, Balloon, Pacemaker

The relationship between family CVD and WTP shows that individuals without family CVD are willing to pay for diagnosis, balloon, and pacemaker more than another group (mean $267.33, $496.57, and $882.19 respectively), individuals with family CVD are willing to pay for diagnosis, balloon, and pacemaker (mean $259.72, $470, and $870 respectively). Table 6.18 shows the relationship between family CVD and WTP.

Table 6.18: The relationship between family CVD & WTP

Family CVD		Diagnosis	Balloon	Pacemaker
No	Mean	267.3288	496.5753	882.1918
	N	73	73	73
Yes	Mean	259.7222	470.0000	870.0000
	N	36	35	35
Total	Mean	264.8165	487.9630	878.2407
	N	109	108	108
t-test	$p <$	(0.821)	(0.691)	(0.930)
	F	(0.742)	(5.462)	(7.685)

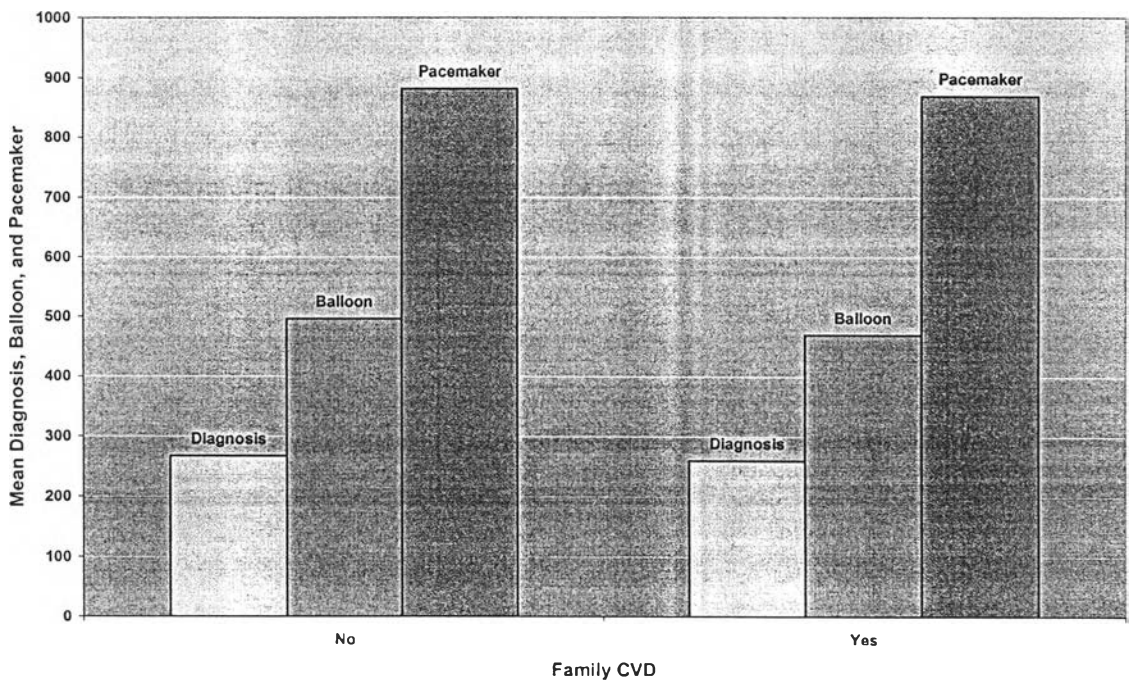

Figure 6.12: Family CVD & Mean Diagnosis, Balloon, & Pacemaker

The relationship between CVD and WTP shows that individuals without CVD are wiiling to pay for diagnosis, balloon, and pacemaker more than another group (mean $278.98, $512.63, and $928.02 respectively), individuals with CVD are willing to pay for diagnosis, balloon, and pacemaker ($182.50, $350, and $588.26 respectively). Table 6.19 shows the relation between CVD and WTP.

Table 6.19: The relationship between CVD & WTP

Have you had CVD		Diagnosis	Balloon	Pacemaker
No	Mean	278.9785	512.6374	928.0220
	N	93	91	91
Yes	Mean	182.5000	350.0000	588.2353
	N	16	17	17
Total	Mean	264.8165	487.0370	874.5370
	N	109	108	108
t-test	$p <$	(0.029)*	(0.057)	(0.057)
	F	(0.389)	(3.489)	(5.975)

* Statically significant

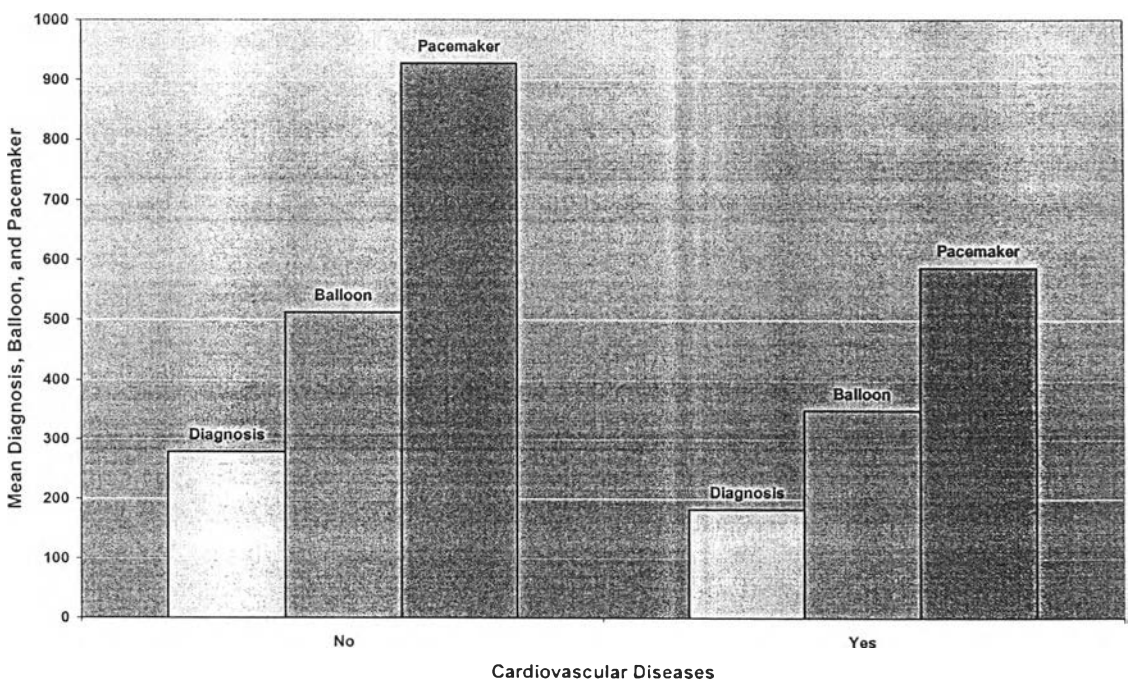

Figure 6.13: Cardiovascular disease & Mean Diagnosis, Balloon, & Pacemaker

Table 6.20 shows the minimum, maximum, and mean WTP for each functions, the research found that the minimum WTP for diagnosis, balloon, and pacemaker are ($5, $50, and $50 respectively), maximum WTP for diagnosis, balloon, and pacemaker are ($700, $1,200, and $2,500 respectively), and the mean WTP for diagnosis, balloon, and pacemaker are ($264.68, $487.15, and $875.69 respectively).

Table 6.20: Willingness to Pay for Catheter unit

	N	Minimum	Maximum	Mean
Diagnosis	111	5.00	700.00	264.6818
Balloon	111	50.00	1,200.00	487.1560
Pacemaker	111	50.00	2,500.00	875.6881

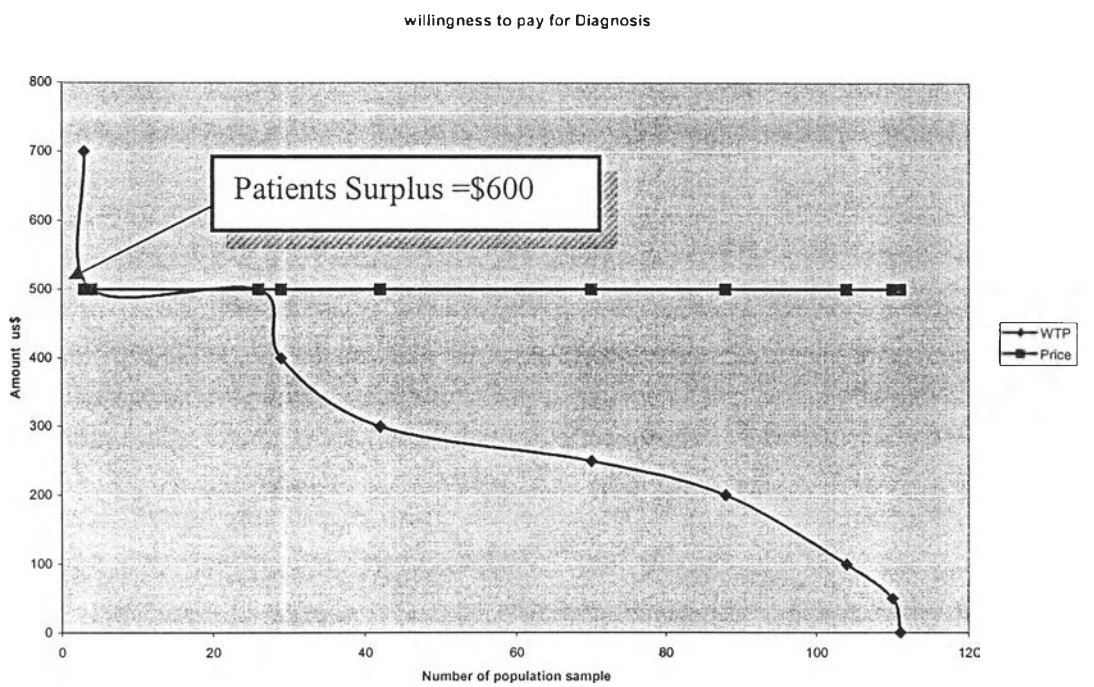

Figure 6.14: Willingness to Pay for Diagnosis

According to the figure 6.14, the study has found that the patients surplus - difference between WTP and the current price- is $600, because there are 3 patients willing to pay for Diagnostic test $700, so the current price is $500, by subtract the WTP for these patients from the price, patients surplus can be obtained.

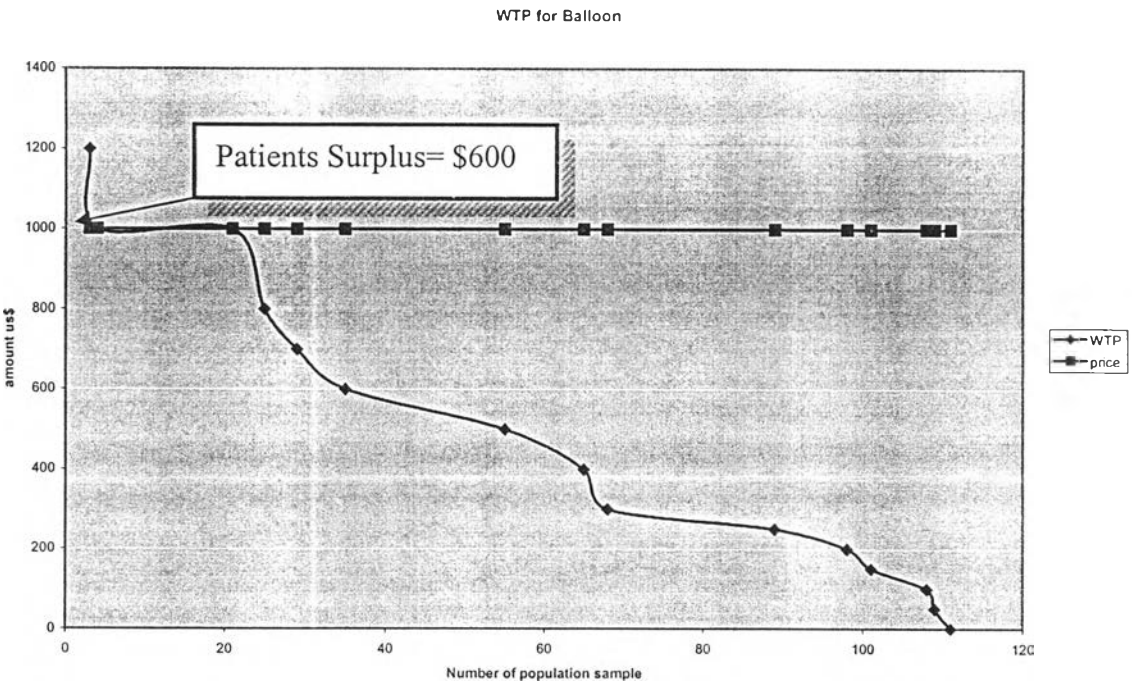

Figure 6.15: Willingness to Pay for Balloon

According to the figure 6.15, the study has found that the patients surplus - difference between WTP and the current price- is $600, because there are 3 patients willing to pay for Balloon $1,200, so the current price is $1,000, by subtract the WTP for these patients from the price, patients surplus can be obtained.

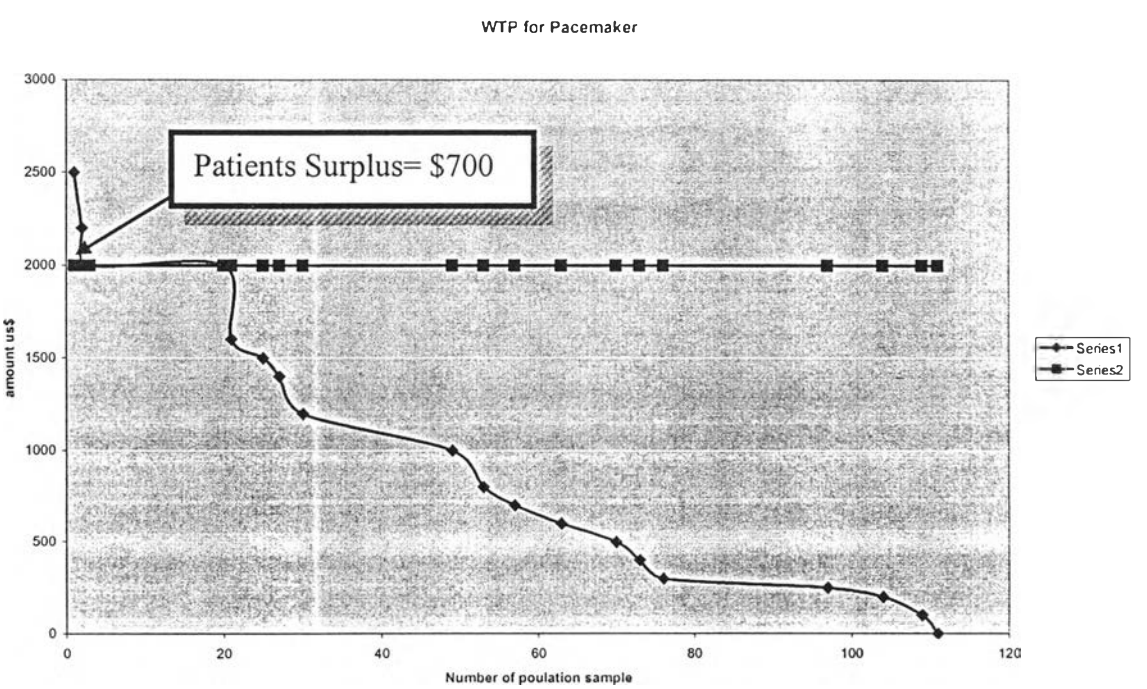

Figure 6.16: Willingness to pay for Pacemaker

According to the Figure 6.16, the study has found that the patients surplus - difference between WTP and the current price-is $700, because there are two patients willing to pay more than current price for Pacemaker, one of them is willing to pay $2,500, and the other is willing to pay $2,200, so the current price is $2,000, by subtract the WTP for these patients from the price, patients surplus can be obtained.