Table 1. Results of multivariate logistic regression model identified factors related to acceptability of parents for HPV vaccination for their son

Age of son ≤ 12 1 10 >12 1.46 1.08 - 1.98 0.014 The eldest son No 1 1 The eldest son Yes 1.57 1.13 - 2.19 0.007 Defect/chronic disease of son No 0.82 0.33 - 2.01 0.664 Relations with son disease of son Father 1 1 1 Relations with son disease of son Father 1	Factors		OR	95% CI	p- value
No	Acaefaan	≤ 12	1		
The eldest son Yes 1.57 1.13 - 2.19 0.007 Defect/chronic disease of son No 0.82 0.33 - 2.01 0.664 Relations with son Father 1 ————————————————————————————————————	Age of soil	> 12	1.46	1.08 - 1.98	0.014
Defect/chronic disease of son Yes 1 Relations with son No 0.82 0.33 - 2.01 0.664 Relations with son Father 1 <	The aldest con	No	1		
$ \begin{array}{ c c c c } \hline \mbox{disease of son} & No & 0.82 & 0.33 - 2.01 & 0.664 \\ \hline \mbox{Relations with son} & Father & 1 \\ \hline \mbox{Mother} & 1.38 & 1.01 - 1.92 & 0.045 \\ \hline \mbox{Age of parents} & > 40 \mbox{ years old} & 1 \\ \hline \mbox{Secondary school and below} & 1 \\ \hline \mbox{Educational level} & High school & 1.35 & 0.89 - 2.03 & 0.150 \\ \hline \mbox{University and higher} & 1.65 & 1.11 - 2.46 & 0.014 \\ \hline \mbox{Residence} & Hue \mbox{city} & 1 \\ \hline \mbox{Other} & 0.26 & 0.06 - 1.11 & 0.069 \\ \hline \mbox{Marital status} & Living \mbox{ with wife/husband} & 1 \\ \hline \mbox{Separation/divorce/widow} & 1.74 & 0.87 - 3.45 & 0.115 \\ \hline \mbox{Characteristics of occupation} & No income & 1 \\ \hline \mbox{Sable income} & 1.78 & 0.67 - 4.69 & 0.245 \\ \hline \mbox{Cuny and proor} & 1.86 & 0.57 - 3.72 & 0.434 \\ \hline \mbox{Economic situation} & Poor/near poor & 1 \\ \hline \mbox{Non poor/near poor} & 1.36 & 0.56 - 3.32 & 0.495 \\ \hline \mbox{Number of children} & \geq 3 & 1 \\ \hline \mbox{Separation/divorce/widow} & 1.36 & 0.56 - 3.32 & 0.495 \\ \hline \mbox{Pour flat proor onear poor} & 1.36 & 0.56 - 3.32 & 0.495 \\ \hline \mbox{Pour flat proor onear poor} & 1.36 & 0.56 - 3.32 & 0.495 \\ \hline \mbox{Pumber of son} & \geq 2 & 1 \\ \hline \mbox{Pour flat proor onear poor} & 1.36 & 0.56 - 3.32 & 0.992 \\ \hline \mbox{Pamily history of} & Yes & 1 \\ \hline \mbox{Pour flat problem of} & No/don't remember} & 1.09 & 0.37 - 3.22 & 0.872 \\ \hline \mbox{Decision maker for} & Both & 1 \\ \hline \mbox{Pour flat problem of} & Father & 1.38 & 0.80 - 2.39 & 0.245 \\ \hline \mbox{Height problem of} & Father & 1.38 & 0.80 - 2.39 & 0.245 \\ \hline \mbox{Height problem of} & Mother & 0.75 & 0.53 - 1.08 & 0.124 \\ \hline \mbox{Knowledge of HPV} & Not good & 1 \\ \hline \mbox{Not good} & 1$	The eldest son	Yes	1.57	1.13 - 2.19	0.007
$ \begin{array}{ c c c c c } \hline Relations with son \\ \hline Residence \\ \hline Re$	Defect/chronic	Yes	1		
$ \begin{array}{ c c c c } \hline Relations with son \\ \hline Mother & 1.38 & 1.01-1.92 & 0.045 \\ \hline Age of parents & > 40 \ years \ old & 1 \\ \hline & \le 40 \ years \ old & 1.03 & 0.73-1.45 & 0.863 \\ \hline & \le 240 \ years \ old & 1.03 & 0.73-1.45 & 0.863 \\ \hline & Secondary \ school \ and \ below & 1 \\ \hline & Beducational \ level & High \ school & 1.35 & 0.89-2.03 & 0.150 \\ \hline & University \ and \ higher & 1.65 & 1.11-2.46 & 0.014 \\ \hline & Hue \ city & 1 \\ \hline & Other & 0.26 & 0.06-1.11 & 0.069 \\ \hline & Marital \ status & Living \ with \ wife/husband & 1 \\ \hline & Separation/divorce/widow & 1.74 & 0.87-3.45 & 0.115 \\ \hline & No \ income & 1 \\ \hline & Stable \ income & 1.78 & 0.67-4.69 & 0.245 \\ \hline & Unstable \ income & 1.46 & 0.57-3.72 & 0.434 \\ \hline & Economic \ situation & Poor/near \ poor & 1 \\ \hline & Non \ poor/near \ poor & 1.36 & 0.56-3.32 & 0.495 \\ \hline & Stable \ income & 1.36 & 0.56-3.32 & 0.495 \\ \hline & Stable \ income & 1.36 & 0.56-3.32 & 0.495 \\ \hline & Number \ of \ children & \ge 3 & 1 \\ \hline & \le 2 & 0.99 & 0.69-1.43 & 0.972 \\ \hline & Pamily \ history \ of & Yes & 1 \\ \hline & HPV-related \ cancers & No/don't \ remember & 1.09 & 0.37-3.22 & 0.872 \\ \hline & Decision \ maker \ for \ health \ problem \ of & Father & 1.38 & 0.80-2.39 & 0.245 \\ \hline & Knowledge \ of \ HPV & Not \ good & 1 \\ \hline \end{array}$	disease of son	No	0.82	0.33 - 2.01	0.664
Mother 1.38 1.01 – 1.92 0.045 Age of parents > 40 years old 1 Secondary school and below 1 Educational level High school 1.35 0.89 – 2.03 0.150 University and higher 1.65 1.11 – 2.46 0.014 Residence Hue city 1 Other 0.26 0.06 – 1.11 0.069 Marital status Living with wife/husband 1 0.87 – 3.45 0.115 Characteristics of occupation No income 1 0.87 – 3.45 0.115 Characteristics of occupation No income 1 0.67 – 4.69 0.245 Unstable income 1.78 0.67 – 4.69 0.245 Unstable income 1.46 0.57 – 3.72 0.434 Economic situation Poor/near poor 1 1 1 Number of children ≥ 3 1 1 2 0.99 0.69 – 1.43 0.972 Number of son 1 0.97 0.72 – 1.31 0.839 0.892 <td>Polotions with son</td> <td>Father</td> <td>1</td> <td></td> <td></td>	Polotions with son	Father	1		
Age of parents ≤ 40 years old 1.03 0.73 − 1.45 0.863 Educational level Secondary school and below 1 1 1 High school 1.35 0.89 − 2.03 0.150 University and higher 1.65 1.11 − 2.46 0.014 Residence Hue city 1 1 0.069 Marital status Living with wife/husband 1 1 0.87 − 3.45 0.115 Characteristics of occupation No income 1 1 0.87 − 3.45 0.115 Economic situation occupation Poor/near 1.78 0.67 − 4.69 0.245 Unstable income 1.46 0.57 − 3.72 0.434 Economic situation occupation Poor/near poor 1 1 0.56 − 3.32 0.495 Number of children occupation ≥ 3 1 0.56 − 3.32 0.495 Number of son occupation 1.36 0.56 − 3.32 0.495 Number of son occupation 2 1 0.97 0.72 − 1.31 0.839 Number of son occupation 1 0.97 0.72 − 1.31 0.839	Kelations with son	Mother	1.38	1.01 - 1.92	0.045
Educational level Secondary school and below 1 1 Beducational level High school 1.35 0.89 - 2.03 0.150 University and higher 1.65 1.11 - 2.46 0.014 Residence Hue city 1 0.26 0.06 - 1.11 0.069 Marital status Living with wife/husband 1 0.74 0.87 - 3.45 0.115 Characteristics of occupation No income 1 0.78 0.67 - 4.69 0.245 Unstable income 1.46 0.57 - 3.72 0.434 Economic situation 2 1 0.007/near poor 1 0.36 0.56 - 3.32 0.495 Number of children 2 2 0.99 0.69 - 1.43 0.972 Number of son 3 1 0.972 Family history of HPV-related cancers 1 0.90 0.37 - 3.22 0.872 Decision maker for health problem of health problem of health problem of health problem of their children 1.38 0.80 - 2.39 0.245 Knowledge of HPV Not good 1 1 0.001	Age of parents	> 40 years old	1		
		≤ 40 years old	1.03	0.73 - 1.45	0.863
$ \begin{array}{ c c c c c } \hline & University and higher \\ \hline & Hue city \\ \hline & Other \\ \hline & O.26 \\ \hline & O.06-1.11 \\ \hline & O.069 \\ \hline \\ Marital status \\ \hline & Living with wife/husband \\ \hline & Separation/divorce/widow \\ \hline & 1.74 \\ \hline & O.87-3.45 \\ \hline & O.115 \\ \hline \\ Characteristics of occupation \\ \hline & No income \\ \hline & Unstable income \\ \hline & Unstable income \\ \hline & Unstable income \\ \hline & 1.78 \\ \hline & 0.67-4.69 \\ \hline & 0.245 \\ \hline & Unstable income \\ \hline & 1.46 \\ \hline & 0.57-3.72 \\ \hline & 0.434 \\ \hline \\ Economic situation \\ \hline & Poor/near poor \\ \hline & 1 \\ \hline & Non poor/near poor \\ \hline & 1 \\ \hline & Non poor/near poor \\ \hline & 1 \\ \hline & 2 \\ \hline & 2 \\ \hline & 0.99 \\ \hline & 0.69-1.43 \\ \hline & 0.972 \\ \hline \\ Pamily history of \\ HPV-related cancers \\ \hline & No/don't remember \\ \hline & 1.09 \\ \hline & 0.37-3.22 \\ \hline & 0.872 \\ \hline \\ Decision maker for health problem of Father \\ \hline & 1.38 \\ \hline & 0.80-2.39 \\ \hline & 0.245 \\ \hline & Unit begod \\ \hline \\ \hline & 1 \\ \hline & 1.38 \\ \hline & 0.80-2.39 \\ \hline & 0.245 \\ \hline & 0.245 \\ \hline \\ \hline \\ \hline & 0.245 \\ \hline \\ \hline \\ \hline & 0.245 \\ \hline \\ $	Educational level	Secondary school and below	1		
$ \begin{array}{ c c c c c } \hline Residence & Hue city & 1 \\ \hline Other & 0.26 & 0.06 - 1.11 & 0.069 \\ \hline Marital status & Living with wife/husband & 1 \\ \hline Separation/divorce/widow & 1.74 & 0.87 - 3.45 & 0.115 \\ \hline Characteristics of occupation & 1 \\ \hline Stable income & 1 \\ \hline Stable income & 1.78 & 0.67 - 4.69 & 0.245 \\ \hline Unstable income & 1.46 & 0.57 - 3.72 & 0.434 \\ \hline Economic situation & Poor/near poor & 1 \\ \hline Non poor/near poor & 1 \\ \hline Non poor/near poor & 1.36 & 0.56 - 3.32 & 0.495 \\ \hline Stable income & 1.36 & 0.56 - 3.32 & 0.495 \\ \hline Number of children & \geq 3 & 1 \\ \hline \leq 2 & 0.99 & 0.69 - 1.43 & 0.972 \\ \hline Number of son & 1 \\ \hline Family history of & Yes & 1 \\ \hline HPV-related cancers & No/don't remember & 1.09 & 0.37 - 3.22 & 0.872 \\ \hline Decision maker for health problem of & Father & 1.38 & 0.80 - 2.39 & 0.245 \\ \hline their children & Mother & 0.75 & 0.53 - 1.08 & 0.124 \\ \hline Knowledge of HPV & Not good & 1 \\ \hline \end{array}$		High school	1.35	0.89 - 2.03	0.150
Residence Other 0.26 0.06 – 1.11 0.069 Marital status Living with wife/husband 1 Characteristics of occupation No income 1 Stable income 1.78 0.67 – 4.69 0.245 Unstable income 1.46 0.57 – 3.72 0.434 Economic situation Poor/near poor 1 1 Number of children ≥ 3 1 1 ≤ 2 0.99 0.69 – 1.43 0.972 Number of son 1 0.97 0.72 – 1.31 0.839 Family history of HPV-related cancers Yes 1 1 0.97 0.37 – 3.22 0.872 Decision maker for health problem of health problem of their children Both 1 1 1 0.80 – 2.39 0.245 Knowledge of HPV Not good 1 1 0.53 – 1.08 0.124		University and higher	1.65	1.11 - 2.46	0.014
Marital status Living with wife/husband Separation/divorce/widow 1 0.26 0.06 - 1.11 0.069 Characteristics of occupation Separation/divorce/widow 1.74 0.87 - 3.45 0.115 Characteristics of occupation No income 1	Residence	Hue city	1		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Other	0.26	0.06 - 1.11	0.069
$ \begin{array}{c} \text{Characteristics of occupation} \\ \hline \text{Characteristics of occupation} \\ \hline \\ \text{Stable income} \\ \hline \\ \text{Unstable income} \\ \hline \\ \text{Unstable income} \\ \hline \\ \text{I.46} \\ \hline \\ \text{O.57} - 3.72 \\ \hline \\ \text{O.434} \\ \hline \\ \hline \\ \text{Economic situation} \\ \hline \\ \text{Poor/near poor} \\ \hline \\ \text{Non poor/near poor} \\ \hline \\ \text{I.36} \\ \hline \\ \text{O.56} - 3.32 \\ \hline \\ \text{O.495} \\ \hline \\ \text{O.495} \\ \hline \\ \text{Number of children} \\ \hline \\ \hline \\ \text{Suble income} \\ \hline \\ \text{I.36} \\ \hline \\ \text{O.56} - 3.72 \\ \hline \\ \text{O.495} \\ \hline \\ \text{O.495} \\ \hline \\ \text{O.495} \\ \hline \\ \text{O.99} \\ \hline \\ \text{O.69} - 1.43 \\ \hline \\ \text{O.972} \\ \hline \\ \text{O.972} \\ \hline \\ \text{O.99} \\ \hline \\ \text{O.72} - 1.31 \\ \hline \\ \text{O.839} \\ \hline \\ \text{Family history of} \\ \hline \\ \text{HPV-related cancers} \\ \hline \\ \text{Poor/near poor} \\ \hline \\ \text{I.09} \\ \hline \\ \text{O.72} - 1.31 \\ \hline \\ \text{O.839} \\ \hline \\ \text{HPV-related cancers} \\ \hline \\ \text{Decision maker for} \\ \hline \\ \text{health problem of} \\ \hline \\ \text{Father} \\ \hline \\ \text{I.38} \\ \hline \\ \text{O.80} - 2.39 \\ \hline \\ \text{O.245} \\ \hline \\ \text{their children} \\ \hline \\ \hline \\ \text{Mother} \\ \hline \\ \hline \\ \text{Not good} \\ \hline \\ \text{I.} \\ \hline \\ \text{I.} \\ \hline \\ \text{Not good} \\ \hline \\ \text{I.} \\ \hline \\ \text{I.} \\ \hline \\ \text{O.75} \\ \hline \\ \text{O.53} - 1.08 \\ \hline \\ \text{O.124} \\ \hline \\ \hline \\ \text{Knowledge of HPV} \\ \hline \\ \hline \\ \text{Not good} \\ \hline \\ \hline \\ \text{I.} \\ \hline \\ \text{I.} \\ \hline \\ \text{I.} \\ \hline \\ \text{O.75} \\ \hline \\ \text{O.53} - 1.08 \\ \hline \\ \text{O.124} \\ \hline \\ \hline \\ \\ \text{O.124} \\ \hline \\ \hline \\ \hline \\ \hline \\ \text{Not good} \\ \hline \\ \hline \\ \text{I.} \\ \hline \\ \hline \\ \text{I.} \\ \hline \\ \text{O.75} \\ \hline \\ \text{O.53} - 1.08 \\ \hline \\ \hline \\ \text{O.124} \\ \hline \\ \hline \\ \hline \\ \\ \text{Nowledge of HPV} \\ \hline \\ \hline \\ \text{Not good} \\ \hline \\ \hline \\ \text{I.} \\ \hline \\ \\ \text{I.} \\ \\ \text{O.55} - 3.72 \\ \hline \\ \\ \text{O.55} - 3.32 \\ \hline \\ \\ \text{O.80} \\ \hline \\ \\ \text{O.575} \\ \hline \\ \\ \text{O.53} - 1.08 \\ \hline \\ \\ \text{O.124} \\ \hline \\ \\ \text{I.} \\ \hline \\ \\ \text{O.50} \\ $	Marital status	Living with wife/husband	1		
		Separation/divorce/widow	1.74	0.87 - 3.45	0.115
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		No income	1		
		Stable income	1.78	0.67 - 4.69	0.245
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Unstable income	1.46	0.57 - 3.72	0.434
Number of children ≥ 3 1 ≤ 2 0.99 0.69 − 1.43 0.972 Number of son ≥ 2 1 Family history of HPV-related cancers Yes 1 HPV-related cancers No/don't remember 1.09 0.37 − 3.22 0.872 Decision maker for health problem of their children Both 1 health problem of their children Father 1.38 0.80 − 2.39 0.245 Knowledge of HPV Not good 1	Economic situation	Poor/near poor	1		
Number of son ≤ 2 0.99 0.69 − 1.43 0.972 Number of son ≥ 2 1 0.97 0.72 − 1.31 0.839 Family history of HPV-related cancers Yes 1 1 HPV-related cancers No/don't remember 1.09 0.37 − 3.22 0.872 Decision maker for health problem of their children Both 1 1 health problem of their children Father 1.38 0.80 − 2.39 0.245 their children Mother 0.75 0.53 − 1.08 0.124 Knowledge of HPV Not good 1		Non poor/near poor	1.36	0.56 - 3.32	0.495
Number of son ≤ 2 0.99 0.69 − 1.43 0.972 Number of son ≥ 2 1 0.97 0.72 − 1.31 0.839 Family history of HPV-related cancers Yes 1 1 HPV-related cancers No/don't remember 1.09 0.37 − 3.22 0.872 Decision maker for health problem of their children Both 1 1.38 0.80 − 2.39 0.245 their children Mother 0.75 0.53 − 1.08 0.124 Knowledge of HPV Not good 1	Number of children	≥ 3	1		
Number of son ≥ 2 1 1 0.97 0.72 − 1.31 0.839 Family history of HPV-related cancers Yes 1 HPV-related cancers No/don't remember 1.09 0.37 − 3.22 0.872 Decision maker for health problem of their children Both 1 1 health problem of their children Father 1.38 0.80 − 2.39 0.245 Knowledge of HPV Not good 1			0.99	0.69 - 1.43	0.972
Number of soil 1 0.97 0.72 – 1.31 0.839 Family history of HPV-related cancers Yes 1 HPV-related cancers No/don't remember 1.09 0.37 – 3.22 0.872 Decision maker for health problem of their children Both 1 1 0.80 – 2.39 0.245 their children Mother 0.75 0.53 – 1.08 0.124 Knowledge of HPV Not good 1	Number of son		1		
HPV-related cancers No/don't remember 1.09 0.37 - 3.22 0.872 Decision maker for health problem of their children Both 1 Father 1.38 0.80 - 2.39 0.245 their children Mother 0.75 0.53 - 1.08 0.124 Knowledge of HPV Not good 1			0.97	0.72 - 1.31	0.839
Decision maker for health problem of their children Both Halth problem of their children 1.38 (0.80 - 2.39) (0.245) (0.75) (0.53 - 1.08) (0.124) Knowledge of HPV Not good 1	Family history of	Yes	1		
health problem of their childrenFather 1.38 $0.80-2.39$ 0.245 Mother 0.75 $0.53-1.08$ 0.124 Knowledge of HPVNot good 1	HPV-related cancers	No/don't remember	1.09	0.37 - 3.22	0.872
their children Mother 0.75 0.53 – 1.08 0.124 Knowledge of HPV Not good 1	Decision maker for	Both	1		
Knowledge of HPV Not good 1	health problem of	Father	1.38	0.80 - 2.39	0.245
	their children	Mother	0.75	0.53 - 1.08	0.124
and HPV vaccine Good 1.81 1.22 – 2.67 0.003	Knowledge of HPV	Not good	1		
	and HPV vaccine	Good	1.81	1.22 - 2.67	0.003

Table 2A. Results of Spearman correlation to identify factors associated with WTP for HPV vaccine among participants

Factors	WTP			
	Rho	p- value		
Total mean score of knowledge	0.11	0.028		
Parent's age	0.05	0.288		
Son's age	-0.05	0.352		
Number of children	-0.08	0.130		
Number of sons	-0.06	0.240		

Table 2B. Results of non-parametric tests to identify factors associated with WTP for HPV vaccine among participants (n=386)

Factors		_	Median	Range	n volus	
		n	(VND)	(VND)	p- value	
Relation with male student	Mother	244	2,980,000	3,980,000	- 0.159	
	Father	142	3,180,000	3,880,000		
Residence	Hue city	383	3,180,000	3,980,000	- 0.410	
	Other	3	3,580,000	600,000		
Educational level	Secondary school and below	96	2,980,000	3,880,000		
	High school	87	2,980,000	3,480,000	0.148	
	University and higher	203	3,180,000	3,980,000	-	
Characteristics of occupation	No income	8	2,980,000	3,780,000	_	
	Stable income	195	3,180,000	3,980,000	0.455	
	Unstable income	183	2,980,000	3,880,000	•	
Economic situation	Non poor/near poor	377	3,180,000	3,980,000	- 0.970	
	Poor/near poor	9	3,180,000	600,000		
Marital status	Living with wife/husband	362	3,180,000	3,980,000	- 0.343	
	Separation/divorce/widow	24	2,980,000	3,680,000		
Family history of	Yes	8	3,080,000	600,000	0.935	
HPV-related cancers	No/don't remember	378	3,180,000	3,980,000	0.933	
Decision maker for	Father	35	3,380,000	3,680,000		
health problem of	Mother	90	2,980,000	3,980,000	0.530	
children	Both	261	3,180,000	3,880,000		
The eldest son	No	155	3,180,000	3,780,000	- 0.520	
	Yes	231	2,980,000	3,980,000		
Defect/chronic	No	375	3,180,000	3,980,000	— 0.137	
disease of son	Yes	11	2,980,000	3,180,000	0.137	

Mann-Whitney U test was used to compare two groups

Kruskal- Wallis test was used to compare three groups