

FACTORS ASSOCIATED WITH HPV VACCINATION COVERAGE AT SCHOOL LEVEL DURING HPV VACCINE INTRODUCTION IN THAILAND



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Background and objective

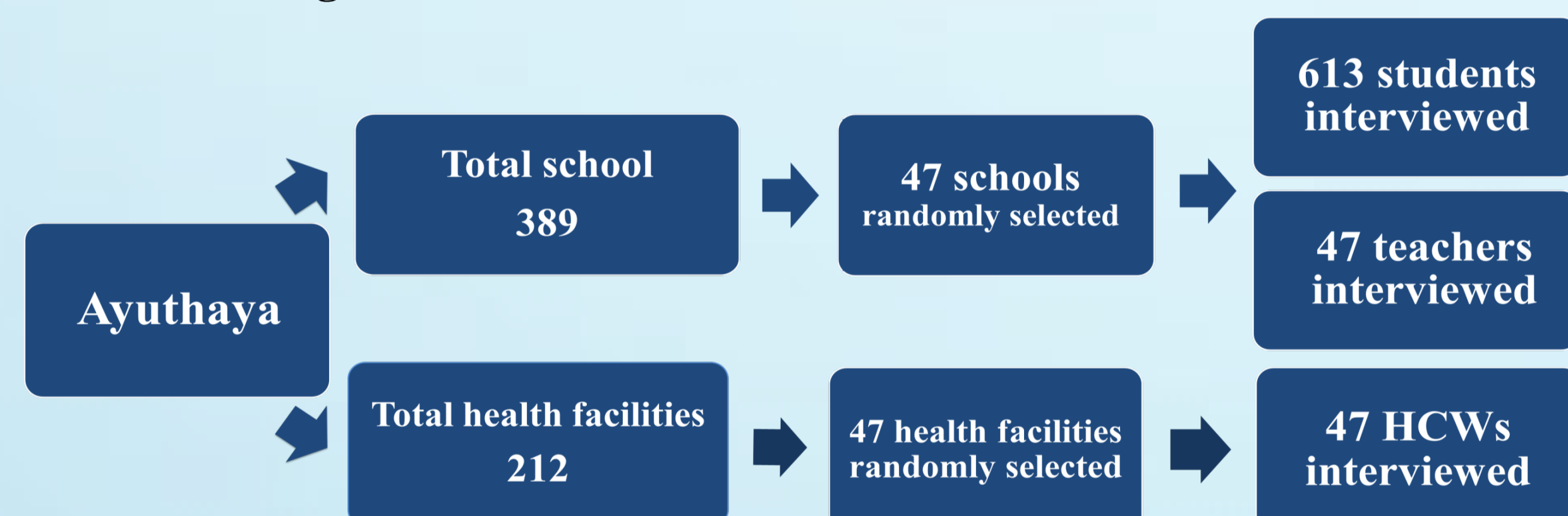
Cervical cancer is one of the major public health concerns which kills 5,200 Thai women each year. Pap smear has been integrated in Thai basic maternal and child service for over forty years but only one third of the new cervical cancer cases come to the hospital at early stages when the malignancies remain localized. Most of cases appear at later stages, when the cancer has extended beyond its origin, therefore, management of these cases is complicated and costly, and the outcome is not very favorable.

In 2014, as a compliment to the existing cervical screening, Department of Disease Control, Ministry of Public Health Thailand launched HPV vaccination program to fifth grade female students in Ayuthaya province to assess the feasibility of HPV vaccination as a part of national immunization program. More than 4,300 children were immunized and the overall HPV vaccination coverage was 91%. However, sub-provincial HPV vaccination coverage varied due to multiple factors. This study aimed to explore factors associated with HPV vaccination coverage at school level during the introduction of HPV vaccine in Thailand.



Method

A retrospective cohort study was conducted in Ayuthaya province. 613 fifth grade female students from 47 schools were surveyed to determine HPV vaccination coverage at school level. Teachers, healthcare workers (HCWs) and female students were interviewed using standardized questionnaire to assess their knowledge and attitude towards cervical cancer, HPV vaccine and HPV vaccination program. Furthermore, we explored some programmatic activities that might affect HPV vaccination performance and conducted univariate and multivariate analysis to determine the relationship between each factor and HPV vaccination coverage at school level.



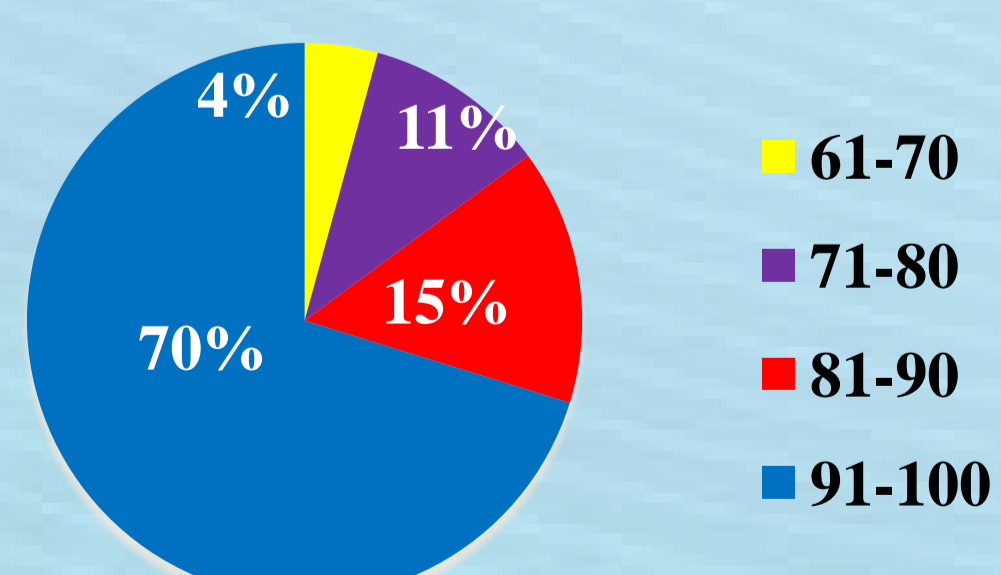
Student interviews to assess knowledge and attitude towards HPV vaccination program



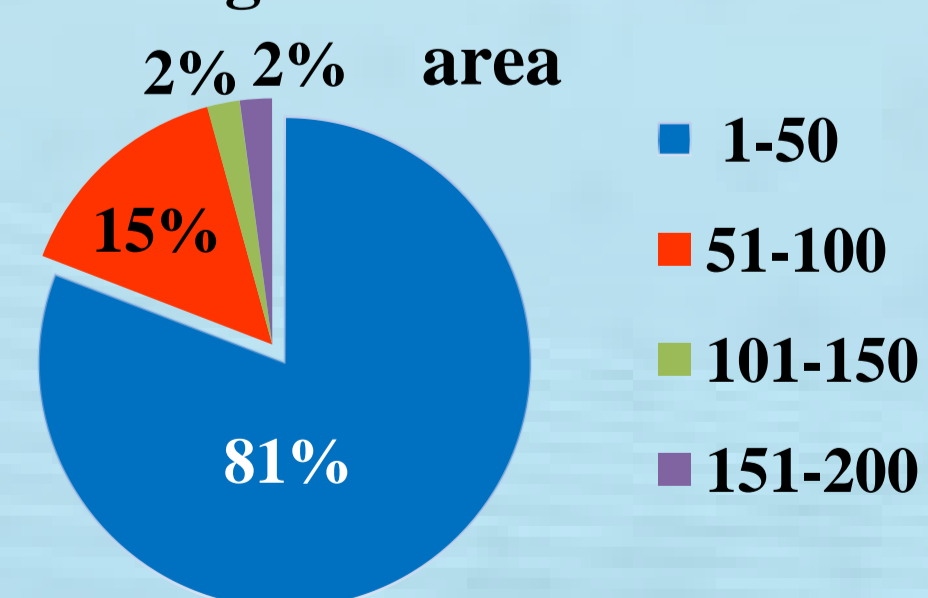
HCWs interviews and immunization activities were explored

Result

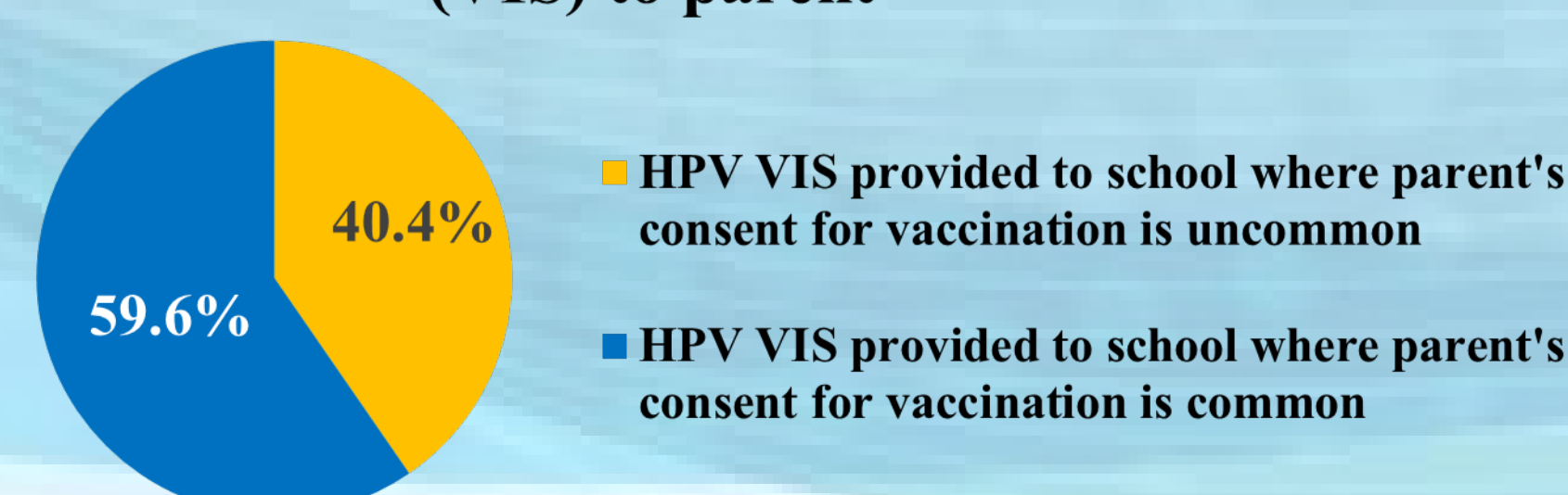
Proportion of school by HPV vaccination coverage at school level



Proportion of health promoting centers by number of target students in their catchment area

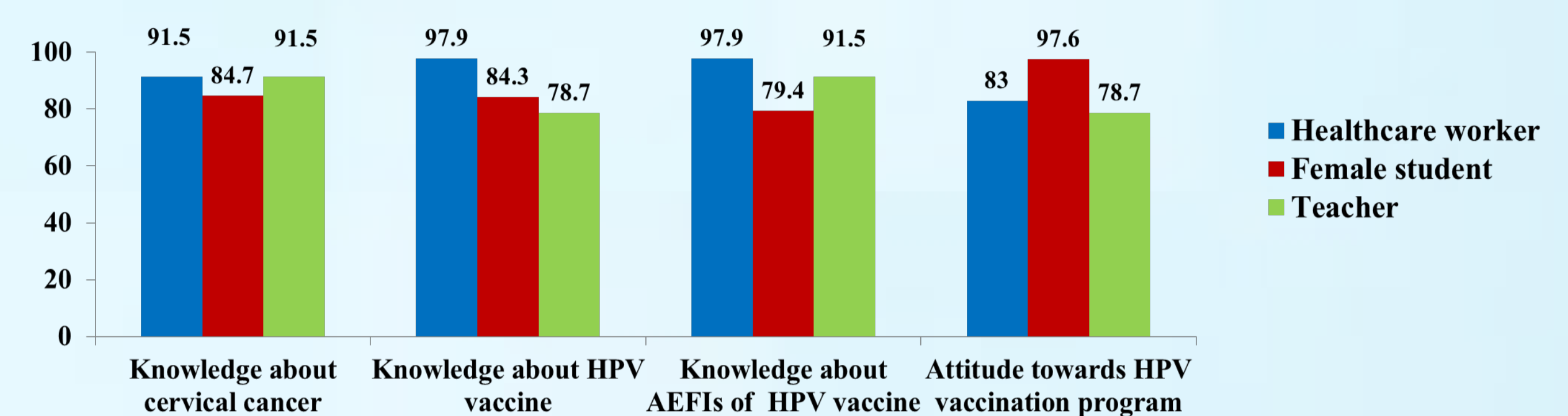


Proportion of school provided vaccine information statement (VIS) to parent



Result (cont.)

Proportion of healthcare worker, student and teacher who had adequate knowledge of cervical cancer/HPV vaccine or positive attitude towards HPV program



Most of schools in this study reached 90% of HPV vaccination coverage, but the coverage was varied from 61.5% to 100%. Since parent's consent was compulsory during the first year of introduction, standard HPV-VIS and parent consent form were distributed to parents prior to vaccination, however, 40.4% of schools in this study reported that VIS and parent consent form are uncommon practice for other school vaccination programs.

The multivariate analysis revealed that "HCW understand that HPV vaccine safety and efficacy was carefully reviewed prior to registration" (B= 42.2, p-value < 0.01) and "HCWs supported HPV vaccine introduction in the national immunization program" (B= 8.9, p-value = 0.01) related to increased HPV vaccination coverage at school level, these indicated that HCWs' confidence in HPV vaccine efficacy/safety and their positive attitude towards the program had a positive impact on immunization program performance during vaccine introduction.

In contrast, "providing vaccine information statement (VIS) to parents in school where parent consent for vaccination is uncommon" shown a negative relationship to HPV vaccination coverage (B= -7.6, p-value = 0.04), this emphasized that indirect delivery of vaccine information to parents who were unfamiliar to informed consent process might be insufficient to ensure them about safety and benefit of new vaccine in national immunization program.

Table 1. Univariate and multivariate analysis of factors related to HPV vaccination coverage at school level

Determinants		Simple linear regression		Multiple linear regression	
		B	P-Value	B	P-Value
Student	Students understand about cervical cancer	0.16	0.20	-0.07	0.65
	Students think HPV vaccine is safe	0.17	0.07	0.20	0.12
	Students have positive attitude to school vaccination	0.00	0.97	-0.05	0.71
	Student was influenced by classmate in deciding to receive HPV vaccine	0.09	0.07	0.06	0.36
	Students developed adverse reaction following 1st HPV vaccination	-0.63	0.18	-0.03	0.53
	Students have underlying medical problem	-0.13	0.20	0.23	0.06
Teacher	Teacher understands about HPV vaccine	-6.66	0.13	3.40	0.51
	Teacher understands common adverse reaction following HPV vaccine	7.78	0.12	6.61	0.27
	Teacher understands that anaphylaxis is a rare adverse reaction following HPV vaccine	-7.32	0.34	-1.98	0.87
	Teacher thinks HPV program is a part of vaccine trial	-0.09	0.96	-0.28	0.88
Healthcare worker	HCW has adequate knowledge about HPV vaccine	-6.45	0.20	-6.31	0.26
	HCW thinks that HPV vaccination is useful and cost-effective	-2.66	0.37	-5.81	0.26
	HCW supports HPV vaccine introduction in the national immunization program	3.20	0.35	8.94	0.02
	HCW understands that HPV vaccine safety and efficacy was carefully reviewed prior to registration	32.16	<0.01	42.19	<0.01
	HCW understands that HPV vaccination program is not a vaccine trial	-3.04	0.14	-0.33	0.89
Administration	Number of school in health facility catchment area	0.46	0.80	3.38	0.10
	Number of student in health facility catchment area	-0.01	0.76	-0.03	0.44
	Providing vaccine information statement to parents in school where parent's consent for vaccination is uncommon	-4.49	0.15	-7.65	0.04

Conclusion

HCWs' confidence in HPV vaccine efficacy and safety and their support to HPV vaccine as a part of national immunization program related to better HPV vaccine coverage. In contrast, providing VIS to parents who were unfamiliar to informed consent process prior to HPV vaccination shown negative impact on HPV vaccination coverage at school level during HPV vaccine introduction in Thailand.

Acknowledgement

We would like to thank Ayuthaya provincial and district health offices, health promoting hospitals' officials and school teachers for participating in this study and would also like to express our gratitude to WHO Thailand for their kind support.