

HPV vaccine awareness, knowledge, information sources, and hesitancy among young men and women in Switzerland

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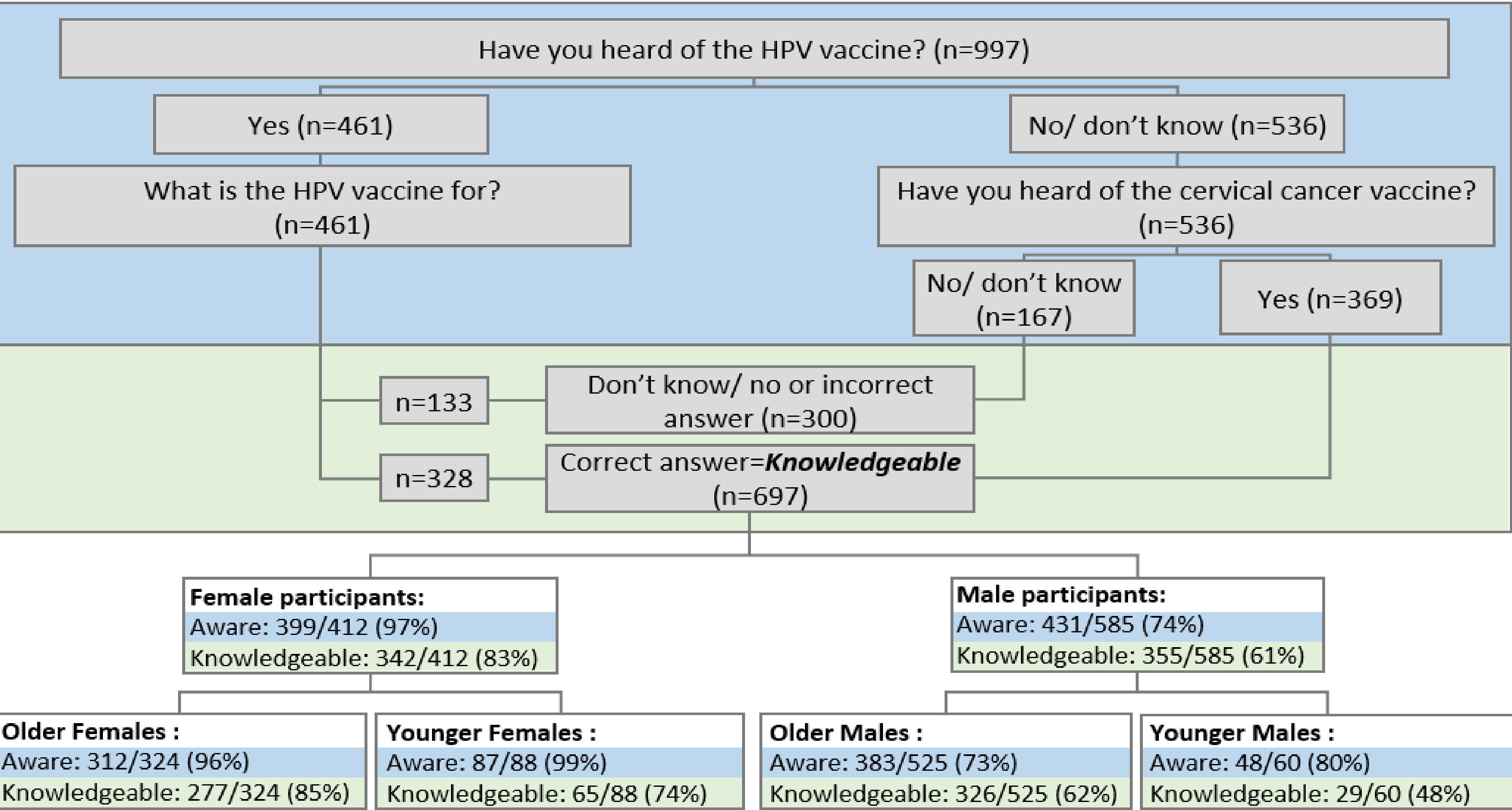
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INTRODUCTION

HPV vaccine has been recommended in Switzerland for young women and men since 2007 and 2015, respectively [1,2]. Identifying factors associated with HPV vaccine uptake, including vaccine hesitancy (VH), is essential for designing successful vaccination programs. The aims of the present study were (1) to provide a detailed characterization of VH, HPV vaccine awareness, knowledge, and information sources in youth HPV vaccine decision-making; and (2) to examine the association between VH and HPV vaccine uptake among male and female youth in Switzerland.

RESULTS

Figure 1. Awareness and Knowledge of HPV Vaccine



Note. All data in blue stands for awareness and all data in green for knowledge.

Table 2. Participant characteristics

	Total study population		Sample with vaccination record	
	Male (n=588)	Female (n=413)	Male (n=415)	Female (n=259)
Age in years				
Born before 1.7.02, n (%)	526 (89)	324 (78)	370 (89)	193 (75)
Born on/after 1.7.02, n (%)	62 (11)	89 (22)	45 (11)	66 (25)
Median (IQR)	19 (19-20)	20 (17-23)	19 (18, 20)	19 (17, 22)
Nationality				
Swissborn, n (%)	533 (91)	362 (88)	382 (92)	239 (92)
Language region				
German, n (%)	451 (77)	220 (53)	321 (77)	173 (67)
Italian, n (%)	86 (15)	70 (17)	78 (19)	59 (23)
French, n (%)	47 (8)	121 (30)	16 (4)	27 (10)
English, n (%)	4 (1)	2 (1)	-	-
Participant recruitment setting				
Military enlistment, n (%)	372 (63)	4 (1)	283 (68)	4 (2)
Biomedical provider, n (%)	146 (25)	259 (63)	97 (23)	183 (71)
CAM provider, n (%)	57 (10)	94 (23)	35 (8)	72 (28)
Adolescent clinic, n (%)	13 (2)	56 (14)	-	-
HPV vaccine school program in area of their residence				
School program available, n (%)	269 (67)	180 (42)	232 (56)	134 (52)
Vaccination status				
Received ≥1 dose of HPV vaccine, n (%)	-	-	64 (15)	151 (58)
YAV-5-Score				
Score ≥ 50 (hesitant)	146 (25)	142 (34)	92 (22)	81 (31)
YAV-5-Score mean (SD)	31.3 (23)	37.1 (24)	30.4 (22)	35.3 (25)
YAV-5-Score median (IQR)	30 (10, 40)	30 (20, 50)	30 (10, 40)	30 (20, 50)

Note. CAM, Complementary and alternative medicine; IQR, interquartile range; YAV-5, Youth Attitudes about Vaccines Scale

METHODS

With a cross-sectional study, we recruited eligible male and female participants, 15-26 years of age in the offices of physicians providing biomedicine and complementary/alternative medicine (CAM), during military enlistment, and in a sexual health clinic. An interview questionnaire was used to collect information on sociodemographic factors, vaccination records, awareness, knowledge, information sources and to measure the prevalence of VH using the Youth Attitudes about Vaccines scale (YAV-5), a modified version of the Parent Attitudes about Childhood Vaccinations (PACV) survey instrument [3]. We defined awareness as having heard of the HPV or “cervical cancer” vaccine and knowledge as being able to give a correct answer to what the HPV vaccine is for or for the association of HPV with cervical cancer. For the analysis of the association between VH and HPV vaccine uptake, we only included participants providing a vaccination record and those who did not have a vaccination record due to non-vaccination.

Table 1. Unadjusted and adjusted odds of not having received >1 dose of HPV vaccine, controlling for sex, age groups, place of birth, language region, recruitment setting, availability of HPV vaccine school program in the area of their residence, and VH.

	Univariable Analysis, Male Only (n=415)			Model 1, male only (n=415)			Univariable Analysis, Female Only (n=259)			Model 1, female only (n=259)		
	OR	CI (95%)		AOR	CI (95%)		OR	CI (95%)		AOR	CI (95%)	
Age groups based on birthdates												
Born before 1.7.02		(ref)			(ref)			(ref)			(ref)	
Born on/after 1.7.02	0.29	(0.12	0.71)	0.31	(0.13	0.73)	0.94	(0.46	1.93)	1.14	(0.56	2.33)
Place of birth												
Outside Switzerland		(ref)			(ref)			(ref)			(ref)	
Switzerland	2.1	(0.84	5.23)	1.71	(0.67	4.34)	2.14	(0.66	6.95)	2.38	(0.68	8.32)
Language region												
German		(ref)			(ref)			(ref)			(ref)	
French	0.5	(0.11	2.33)	0.69	(0.16	3.03)	0.88	(0.31	2.52)	0.94	(0.32	2.80)
Italian	0.38	(0.12	1.21)	0.57	(0.18	1.80)	0.44	(0.17	1.12)	0.59	(0.22	1.62)
Participant recruitment setting												
Biomedical		(ref)			(ref)			(ref)			(ref)	
CAM	2.63	(0.66	10.45)	1.43	(0.39	5.20)	3.08	(1.33	7.14)	2.52	(1.13	5.63)
Military enlistment	2.49	(0.44	13.99)	1.84	(0.57	5.95)	0.58	(0.03	11.81)	0.59	(0.03	10.29)
HPV vaccine school program in area of their residence												
Not available		(ref)			(ref)			(ref)			(ref)	
Available	1.39	(0.67	2.91)	1.2	(0.53	2.72)	1.74	(0.88	3.43)	1	(0.42	2.37)
YAV-5-Score												
Score < 50 (not hesitant)		(ref)			(ref)			(ref)			(ref)	
Score ≥ 50 (hesitant)	1.68	(0.75	3.76)	1.9	(0.84	4.31)	5.29	(2.71	10.33)	4.9	(2.53	9.50)

Note. We refer to participants born before vs. on/after July 1st, 2002, as the “older” and “younger” participants, respectively, meaning that younger male participants were part of the target age group when 11 to 14 years of age. For comparison purposes, we applied the same age cut-offs to female participants. Abbreviations: AOR, adjusted odds ratio; CAM, Complementary and alternative medicine; CI, confidential interval; IQR, interquartile range; OR, odds ratio; SD, standard deviation; YAV-5, Youth Attitudes about Vaccines Scale

RESULTS

- Significantly more female youth were aware of the HPV vaccine than male youth (176/585 (30%) males and 285/412 (69%) females; p<0.01). Among the 536 participants who had not heard of HPV vaccine, 369 (69%) had heard of the “cervical cancer vaccine”, 255/409 (62%) males and 114/127 (90%) females (p<0.01).
- 697/997 (70%) participants had knowledge of HPV vaccine or the “cervical cancer vaccine”, while 300/997 (30%) participants did not. Females were more knowledgeable than males (342/412 [83%] vs. 355/585 [61%]; p<0.01)
- The three most mentioned information sources by youth were school health programs (53%), health care providers (23%), and participants’ social networks (20%). Internet and social media were mentioned uncommonly as information sources (3% of participants).
- 151 (58%) female and 64 (15%) male participants received ≥1 dose of HPV vaccine, with p-value <0.05.
- 142 (34%) female and 146 (25%) male participants were vaccine hesitant (YAV-5-Score ≥50), with p-value <0.05.
- The odds for being unvaccinated were higher for vaccine hesitant females than non-vaccine hesitant females, adjusted odds ratio (OR)=4.90 (95% CI, 2.53-9.50), but similar among vaccine hesitant and non-vaccine hesitant males, OR=1.90 (95% CI, 0.84-4.31).

CONCLUSION

- HPV vaccine awareness and knowledge were higher among females than among males, and higher among younger than among older participants.
- VH was associated with lower HPV vaccine uptake in female but not male youth. Our findings suggest that factors in addition to VH contribute to HPV under-immunization in male youth in Switzerland. Those factors such as awareness/knowledge or recommendations from health authorities should be examined in depth in further research.

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