**Appendix A. Search terms**

(human papilloma virus OR human papilloma viruses OR human papillomavirus OR human papillomaviruses OR HPV)

AND (immunization OR immunize OR vaccine OR vaccines OR vaccination OR vaccinations)

AND (accept OR accepts OR accepted OR accepting OR acceptance OR acceptances OR acceptability OR adverse effect OR adverse effects OR aware OR awareness OR attitude OR attitudes OR attitudinal OR belief OR beliefs OR believe OR believes OR believing OR believed OR believable OR believably OR believability OR behave OR behaves OR behaved OR behaving OR behavior OR behaviors OR behavioral OR behavioural OR complete OR completion OR decide OR decides OR decided OR deciding OR decidedly OR decision OR decisions OR decisional OR nondecision OR nondecisions OR predecision OR predecisions OR redecision OR redecisions OR decisive OR decisive OR effective OR effectiveness OR hesitance OR hesitancy OR hesitant OR impression OR impressions OR initiate OR initiated OR initiation OR intend OR intends OR intended OR intending OR intent OR intents OR intention OR intentions OR intentionally OR know OR knew OR knowledge OR perceive OR perceives OR perceived OR perceiving OR percept OR perception OR perceptions OR react OR reacted OR reacting OR reaction OR reactions OR reacts OR reason OR reasoned OR reasoning OR reasonings OR reasons OR refusal OR refuse OR refused OR risk OR risks OR risked OR risking OR riskier OR riskiest OR severe OR severity OR severities OR uptake OR uptakes OR willingness OR willing OR willingly)

AND (US OR U.S. OR United States OR America OR American OR Americans OR Alabama OR Alabamian OR Alabamians OR Alabaman OR Alabamans OR Alaska OR Alaskan OR Alaskans OR Arizona OR Arizonan OR Arizonans OR Arkansas OR Arkansan OR Arkansans OR Arkansawyer OR Arkansawyers OR Arkie OR Arkies OR California OR Californian OR Californians OR Californio OR Californios OR Colorado OR Coloradan OR Coloradans OR Coloradoan OR Coloradoans OR Connecticut OR Connecticuter OR Connecticuters OR Connecticotian OR Connecticotians OR Connecticutensian OR Connecticutensians OR Delaware OR Delawarean OR Delawareans OR Florida OR Floridian OR Floridians OR Georgia OR Georgian OR Georgians OR Hawaii OR Hawaiian OR Hawaiians OR Islander OR Islanders OR Kama’aina OR Kama’ainas OR Kamaaina OR Kamaainas OR Idaho OR Idahoan OR Idahoans OR Illinois OR Illinoisan OR Illinoisans OR Illinoisian OR Illinoisians OR Illinoian OR Illinoians OR Indiana OR Indianan OR Indianans OR Indianian OR Indianians OR Iowa OR Iowan OR Iowans OR Kansas OR Kansan OR Kansans OR Kentucky OR Kentuckian OR Kentuckians OR Louisiana OR Louisianan OR Louisianans OR Louisianais OR Louisianaises OR Luisiano OR Luisianos OR Maine OR Mainer OR Mainers OR Mainiac OR Mainiacs OR Maryland OR Marylander OR Marylanders OR Massachusetts OR Massachusettsan OR Massachusettsans OR Massachusettsian OR Massachusettsians OR Massachusite OR Massachusites OR Michigan OR Michiganian OR Michiganians OR Michigander OR Michiganders OR Michiganite OR Michiganites OR Minnesota OR Minnesotan OR Minnesotans OR Mississippi OR Mississippian OR Mississippians OR Missouri OR Missourian OR Missourians OR Montana OR Montanan OR Montanans OR Nebraska OR Nebraskan OR Nebraskans OR Nevada OR Nevadan OR Nevadans OR New Hampshire OR New Hampshirite OR New Hampshirites OR New Hampshireman OR New Hampshiremen OR New Hampshirewoman OR New Hampshirewomen OR New Jersey OR New Jerseyan OR New Jerseyans OR Jerseyite OR Jerseyites OR New Mexico OR New Mexican OR New Mexicans OR Neomexicano OR Neomexicanos OR Neomejicano OR Neomejicanos OR New York OR New Yorker OR New Yorkers OR North Carolina OR North Carolinian OR North Carolinians OR North Dakota OR North Dakotan OR North Dakotans OR Ohio OR Ohioan OR Ohioans OR Ohian OR Ohians OR Oklahoma OR Oklahoman OR Oklahomans OR Okie OR Okies OR Oregon OR Oregonian OR Oregonians OR Pennsylvania OR Pennsylvanian OR Pennsylvanians OR Pennamite OR Pennamites OR Rhode Island OR Rhode Islander OR Rhode Islanders OR Rhodean OR Rhodeans OR South Carolina OR South Carolinian OR South Carolinians OR South Dakota OR South Dakotan OR South Dakotans OR Tennessee OR Tennessean OR Tennesseans OR Texas OR Texan OR Texans OR Texian OR Texians OR Tejano OR Tejanos OR Texican OR Texicans OR Utah OR Utahn OR Utahns OR Utahan OR Utahans OR Vermont OR Vermonter OR Vermonters OR Virginia OR Virginian OR Virginians OR Washington OR Washingtonian OR Washingtonians OR West Virginia OR West Virginian OR West Virginians OR Wisconsin OR Wisconsinite OR Wisconsinites OR Wyoming OR Wyomingite OR Wyomingites OR Wyomese OR Wyomeses OR District of Columbia OR DC OR D.C. OR American Samoan OR Guam OR Guamanian OR Guamanians OR Mariana Islander OR Mariana Islanders OR Puerto Rico OR Puerto Rican OR Boricua OR Boricuas)

AND (Asia OR Asian OR Asians OR Asian Indian OR Asian Indians OR Indian OR Indians OR South Asian OR South Asians OR Japan OR Japanese OR Korea OR Korean OR Koreans OR China OR Chinese OR Bangladesh OR Bangladeshi OR Bhutan OR Bhutanese OR Cambodia OR Cambodian OR Filipino OR Filipinos OR Philippines OR Hmong Nepal OR Nepali OR Nepalese OR Pakistan OR Pakistani OR Pakistanis OR Singapore OR Singaporean OR Singaporeans OR Sri Lanka OR Sri Lankan OR Sri Lankans OR Sinhalese OR Taiwan OR Taiwanese OR Thai OR Thais OR Vietnam OR Vietnamese OR Asian Indian OR Asian Indians)

**Appendix B. Details of results in reviewed studies organized by P3 factors**

**Practice-level determinants of HPV vaccine intention and uptake**

*Language services at the clinic* (n=2)

(H. Y. Lee & Lee, 2017): Although Korean participants were fluent enough in English to attend college or graduate school in the U.S, some participants reported the difficulty of understanding medical jargon. They knew how to describe their symptoms in Korean, but did not know the appropriate terms in English.

(M. Kim, Lee, Kiang, & Kim, 2017): First-generation Korean students worried about going to see a doctor or to the hospital because they were concerned about not understanding English medical terminology.

*Insurance policy* (n=1)

(Hopfer, Garcia, Duong, Russo, & Tanjasiri, 2017): Clinicians serving Vietnamese women described insurance coverage (e.g., only for vaccines gotten at primary care and not at Planned Parenthood) as a barrier to women getting HPV vaccine.

**Provider-level determinants of HPV vaccine intention and uptake**

*HPV vaccine recommendations from providers* (n=8)

(Khan, 2014): 58% of South Asian parents of daughters (PDs) and 45% of South Asian parents of sons (PSs) chose “I usually get my daughter/son whichever vaccine her/his doctor recommends” as a reason why they accepted HPV vaccine for their children.

(K. Kim, Kim, Choi, Song, & Han, 2015): Korean women who had daughters aged around 11 or 12 years and hence were recommended by pediatricians to have their daughters vaccinated seemed to have followed the decision/recommendation made by pediatricians.

(Y.-M. Lee et al., 2019): Many Korean parents who participated in the focus group interviews indicated that their health care provider did not make a strong recommendation to consent to the HPV vaccine for their children. Therefore, they decided not to vaccinate. In this study, Korean parents expressed that they would decide without hesitation on the HPV vaccine for their children if doctors strongly make a recommendation. Some parents consented to vaccination because it was doctor recommended while other parents decided to take time to gather more information and think about it.

(Dela Cruz, Braun, Tsark, Albright, & Chen, 2018): Filipino (95% of PDs and 96% of PSs) and Japanese (96% PDs and 97% PSs) chose “The doctor recommended the vaccine” as a reason why they had vaccinated their children. Additionally, Filipino (48% PDs and 58% PSs) and Japanese (49% PDs and 60% PSs) chose “The doctor didn’t mention the vaccine” as a reason why they had not vaccinated their children.

(Do et al., 2009): For the Cambodian community, a provider’s recommendation was a facilitator of HPV vaccine uptake for adolescents and that the absence of a recommendation was a barrier.

(Taylor et al., 2012): Cambodian daughters’ HPV vaccine uptake was associated with mothers having received a doctor’s recommendation (p<.001).

(Taylor et al., 2014): 42% of Cambodian mothers of vaccinated daughters indicated that they got HPV vaccine for their daughter because they received a physician’s recommendation, while 24% of those of unvaccinated daughters indicated the lack of a recommendation as the reason.

(M. Kim et al., 2017): Most Korean vaccinated participants said they received the HPV vaccine because their doctors recommended it.

*Discussion/conversation with providers about HPV vaccine* (n=3)

(Khan, 2014): 32% of South Asian PDs and 43% of South Asian PSs chose “I have not yet discussed this vaccine with my daughter’s pediatrician” as a reason why they did not accept HPV vaccine for their children.

(Y.-M. Lee et al., 2019): Limited communication with health care providers was found as another main barrier to make an informed decision for HPV vaccination. Korean parents expressed that their pediatric doctors did not provide adequate information for the vaccine.

(Hopfer et al., 2017): 81% of the vaccinated Vietnamese women’s decision stories included descriptions of conversations with a health care practitioner as the reason for vaccinating.

*Provider’s advice regarding likelihood of getting cervical cancer* (n=2)

(H. Y. Lee & Lee, 2017): A participant described her male physician’s disagreement with her intent to receive the HPV vaccine by mentioning “promiscuity" and discussing how only women who were “promiscuous” or “indulgent” would be likely to get cervical cancer.

(M. Kim et al., 2017) Some unvaccinated participants reported not getting vaccinated because their doctors said Korean or Asian women were less prone to cervical cancer.

*Hearing of HPV vaccine from providers* (n=1)

(Taylor et al., 2014) Cambodian daughters’ HPV vaccine initiation was associated with their mothers having heard of HPV vaccine from providers (p=.007)

*Having asked providers for HPV vaccination* (n=1)

(Taylor et al., 2012) Cambodian daughters’ HPV vaccine uptake was associated with their mothers having asked providers for HPV vaccination (p=.002).

**Patient-level determinants of HPV vaccine intention and uptake**

***Healthcare delivery or organizational factors***

*Knowledge of where to get HPV vaccine* (n=1)

(Bastani et al., 2011): 84% of Chinese mothers and 81% of Korean mothers chose “Do not know where to go to get the vaccine” as a reason why they had not vaccinated their daughters.

*Knowledge of whether insurance covers HPV vaccine* (n=1)

(Dela Cruz et al., 2018): Filipino (48% PDs and 46% PSs) and Japanese (24% PDs and 31% PSs) chose “I’m not sure if insurance covers the vaccine” as a reason why they had not vaccinated their children.

*Access to clinics or providers with HPV vaccine* (n=1)

(Y.-M. Lee, Riesche, Lee, & Shim, 2018): Among Korean parents, compared to those who had gotten HPV vaccine for their children, those who had not vaccinated their children perceived the ability to access providers or clinics with HPV vaccine as less of a barrier (M=3.05 vs. 2.43, p=.045).

*Pap test receipt* (n=1)

(Taylor et al., 2014): Cambodian daughters’ vaccine initiation was associated with mothers’ receipt of a Pap test (p=0.006).

*Level of familiarity with U.S. healthcare services (n=1)*

(H. Y. Lee & Lee, 2017): Unfamiliarity with the health care system made Korean participants feel unable to access health care services. They complained about health care clinic procedures in the U.S. They thought it was time-consuming to describe all of their symptoms to a nurse before they saw a doctor. In Korea, they were able to see a doctor directly without first meeting with a nurse.

*Level of comfort with women’s health services (n=1)*

(H. Y. Lee & Lee, 2017) All Korean participants expressed feeling uncomfortable or embarrassed about visiting women’s clinics. One of the strongest perceptions, carried over from Korea, was that women’s clinics are only for married women who are sexually active, not for unmarried women. Seeking gynecological examinations as a single woman is associated with unacceptable premarital sexual activity or promiscuity.

*Level of use of women’s health services (n=1)*

(H. Y. Lee et al., 2015): Among Asian college students, use of gynecological services was associated with completing the HPV vaccine series (OR = 1.72, p<.01)

***Communication style***

*Parent-child discussion about HPV vaccine* (n=1)

(K. Kim et al., 2015): Korean mothers with older adolescent children or young adults tended to share thoughts on HPV vaccination with their children and invite them to a collaborative process of decision making about HPV vaccine.

***Predisposing factors***

*Age* (n=3)

(Khan, 2014): South Asian parents aged 34 and older were less willing to vaccinate their daughters (OR=0.34, p=.048) or sons (OR=0.23, p=.002) compared to younger parents.

(H. Y. Lee et al., 2015): Among Asian college students, older age was associated with a lower likelihood of completing the HPV vaccine series (OR = 0.69, p<.01)

(Tung, Lu, Qiu, & Ervin, 2019): Older Chinese students were less likely to have received HPV vaccine (29.7%) compared to younger students (43.7%) with AOR = 0.46.

*Child’s age* (n=2)

(Y.-M. Lee et al., 2019): Some parents believed that the vaccine was not appropriate for their children because either they were too young or had not had their period.

(Dela Cruz et al., 2018). Filipino parents (49% PDs and 35% PSs) and Japanese parents (31% PDs and 31% PSs) chose “She/he is too young to get the vaccine” as a reason why they had not vaccinated their children.

*Sex* (n=4)

(Khan, 2014): Among South Asian parents, compared to fathers of daughters, mothers of daughters were more willing to get HPV vaccine for daughters (OR=3.7, p=.008)

(Gao, 2015): Compared to Chinese male students, Chinese female students had higher vaccine intention (t=6.0, p<.001)

(Truong-Vu, 2018): Compared to Asian American males, Asian American females were 69% less likely to never initiate the HPV vaccine, relative to on-time vaccinations (p ≤ 0.01). Additionally, compared to males, females were over 50% less likely to vaccinate late, relative to on-time vaccinations (p ≤ 0.05).

(Tung et al., 2019): Among Chinese students, significant differences were observed in receiving HPV vaccine included between gender [males 14.5% vs. females 55.1%, AOR = 0.13].

*Language* (n=3)

(Nguyen, Chen, & Chan, 2012): Chinese adult women who spoke English were more likely to support their daughters or granddaughters in getting the vaccination, even if they had to pay for it themselves (OR = 10.7, p=008).

(M. Kim et al., 2017): Korean female students reported unfamiliarity with medical terminology in English (e.g., HPV, cervix, and cervical cancer). First-generation Korean students worried about going to see a doctor or to the hospital because they were concerned about not understanding English medical terminology.

(Yi, Anderson, Le, Escobar-Chaves, & Reyes-Gibby, 2013): Among Vietnamese women, English proficiency was associated with higher likelihood of having received the HPV vaccine (OR=4.4, p=.03).

*HPV vaccine awareness* (n=4)

(Dela Cruz et al., 2018): Filipino (45% PDs and 53% PSs) and Japanese (47% PDs and 44% PSs) chose “I never knew about the vaccine” as a reason why they had not vaccinated their children.

(Do et al., 2009): A lack of awareness of HPV vaccine was noted as a barrier to Cambodian parents’ vaccine uptake for adolescents.

(Taylor et al., 2014): Among Cambodian mothers, 43% indicated a lack of awareness as a reason why they did not get the vaccine for their daughters.

(M. Kim et al., 2019): Among Korean women, 28% chose “I have never heard of it” as a reason why they had not gotten the vaccine.

*HPV or HPV vaccine knowledge*

(Khan, 2014): Among South Asian parents, higher willingness to get HPV vaccine for their children was associated with higher HPV knowledge (OR=3.8, p=.006).

(Otanez & Torr, 2018): Asians and Pacific Islanders with moderate and high HPV knowledge were more willing to vaccinate daughters against HPV as opposed to those with low knowledge or no knowledge.

(M. Kim et al., 2019): Korean female students with higher knowledge had higher intention of getting HPV vaccine (OR=1.11, 95%CI=1.11-1.22).

(H. Y. Lee & Lee, 2017): A lack of channels to learn about HPV and HPV vaccine contributed to low vaccine intention among Korean women.

(H. Lee et al., 2016): Higher levels of mothers' HPV knowledge were associated with Cambodian-American teenage girls having received the HPV vaccine (OR=4.08, 95%CI=1.50-11.05)

(H. Y. Lee et al., 2015): Among Asian-American college students, higher HPV literacy was associated with a higher likelihood of having completed the HPV vaccine series (OR=2.00, p<.01).

(M. Kim et al., 2017): Korean students reported a lack of knowledge that the HPV vaccine could be given to adults, that men could get the HPV vaccine, and that the vaccine was preventative against HPV as barriers to vaccine uptake.

(Tung et al., 2019): Among Chinese students, receiving HPV vaccine was associated with knowledge level (high knowledge 52.0% vs. low knowledge 27.5%, AOR=2.36).

(Yi et al., 2013): Among Vietnamese women, those who correctly responded to the item "People infected with HPV can be cured with medication" were more likely to report receiving the HPV vaccine (OR=3.8, p=.03).

*General vaccine attitudes* (n=1)

(Khan, 2014): Among South Asians, higher willingness of HPV vaccination was associated with more positive general attitudes towards vaccination (PDs: OR=4.48, p=.003; PSs: OR=3.11, p=.017).

*HPV vaccine attitudes* (n=2)

(Khan, 2014): Among South Asians, higher willingness of HPV vaccination was associated with thinking that HPV vaccine was necessary for males (PDs: OR=5.33, p=.001; PSs: OR=10.32, p<.001).

(Tung et al., 2019): Among Chinese college students, more positive attitudes were associated with higher vaccine initiation (OR=0.28).

*Beliefs about prevention* (n=1)

(Do et al., 2009): In the Cambodian community, *beliefs regarding disease prevention* (e.g., priority placed on preventive health measures) could both negatively and positively impact parents’ HPV vaccine uptake for their children.

*Trust in Western medicine* (n=1)

(Do et al., 2009): In the Cambodian community, those with lower *trust in Western medicine* may refuse to get the vaccine for their children.

*Medical mistrust* (n=1)

(Kolar et al., 2015): Among Asian female college students, unvaccinated women had higher levels of medical mistrust compared to vaccinated women (M=9.4 versus M=7.2).

*Perceived HPV vaccine importance* (n=2)

(Khan, 2014): Among South Asians, 41% PDs and 52% PSs chose “I believe the HPV vaccine is a necessity/important” as a reason why they accepted HPV vaccine for their children.

(Zhao, Huh, Murphy, Chatterjee, & Baezconde-Garbanati, 2014): Among Korean mothers, perceived importance of HPV vaccine was associated with vaccine intention (β=.42, p<.001).

*Perceived HPV vaccine effectiveness* (n=3)

(Khan, 2014): Among South Asians, 21% PDs and 29% PSs chose “I believe the HPV vaccine is effective” as a reason why they accepted HPV vaccine for their children; additional reasons included the ability to prevent cervical cancer (61% PDs and 20% PSs) and “It’s a good way to protect my daughter/son against genital warts” (30% PDs and 33% PSs).

(Do et al., 2009): Concerns about the effectiveness of the vaccine influenced Cambodian parents’ vaccine uptake for adolescents.

(Y.-M. Lee et al., 2018): Among Korean parents, in regards to perceived benefits, there was a significant difference in the scores for parents who did vaccinate their children for HPV (M=3.08) and parents who did not vaccinate their children for HPV (M=3.89, p=0.06). The parents who did not vaccinate their children reported a higher score compared to the other group, indicating that they believed that the HPV vaccine was less beneficial and less effective.

*Perceived HPV vaccine safety or side effects* (n=7)

(Khan, 2014): Among South Asians, 44% PDs and 40% PSs chose “I am fearful about side effects of the vaccine” as a reason why they did not accept HPV vaccine for their children.

(K. Kim et al., 2015): Among Korean women, concerns about safety were reasons against HPV vaccine acceptance for their children.

(Y.-M. Lee et al., 2019): The majority of Korean parents expressed distrust due to potential side effects. Parents also questioned the safety of the HPV vaccine because it is non-routine.

(Bastani et al., 2011): Chinese mothers of daughters (24%) chose “Thinks HPV vaccine may cause health problems in the future” as a reason why they had not vaccinated their daughters.

(Dela Cruz et al., 2018): Filipino (63% PDs and 50% PSs), and Japanese (53% PDs and 49% PSs) chose “I’m not sure it’s safe” as a reason why they had not vaccinated their children.

(Do et al., 2009): Concerns about the side effects of the vaccine influenced Cambodian parents’ vaccine uptake for adolescents.

(M. Kim et al., 2017): Korean women mentioned side effects of the vaccine as a barrier to vaccine uptake.

*HPV vaccine is too new* (n=3)

(Khan, 2014): Among South Asians, 50% PDs and 43% PSs chose “The vaccine is very new” as a reason why they did not accept HPV vaccine for their children.

(Dela Cruz et al., 2018): Filipinos (50% PDs and 45% PSs) and Japanese (60% PDs and 55% PSs) chose “It’s a new vaccine” as a reason why they had not vaccinated their children.

(Y.-M. Lee et al., 2019): Some Korean parents also expressed distrust towards HPV vaccine because they thought it was too new.

*Perceived susceptibility* (n=5)

(Gao, Okoror, & Hyner, 2016): Most participants thought vaccination was important for women, promiscuous people, homosexuals and Chinese international students born in the 1990s; particularly women, as HPV infection leads to more severe health consequences for women compared with men. Both male and female participants discussed that promiscuous people and sex workers should receive the vaccine as they are at high risk. Male participants said that as long as they were ‘‘straight,’’ they do not need to worry about anal cancer. Participants born in the 1980s also mentioned that younger Chinese international students born in the 1990s, whom they viewed as more westernized and sexually open, were at a higher risk of infection and in need of STI prevention and HPV vaccination.

(H. Y. Lee & Lee, 2017): Participants did not think of themselves as being susceptible to getting cervical cancer.

(Dela Cruz et al., 2018): Filipino (39% PDs and 33% PSs) and Japanese parents (44% PDs and 20% PSs) cited “She/he is not at risk for HPV” as a reason why they did not vaccinate their children.

(M. Kim et al., 2019): Among Korean female college students, 51% chose “I’m healthy,” 41% chose “I’m not likely to get sexually transmitted diseases,” and 39% chose “I’m not likely to get genital warts or cervical cancer” as reasons why they did not get vaccinated.

(M. Kim et al., 2017): Korean participants reported low perceived susceptibility to HPV as a barrier to vaccine uptake.

*No need for HPV vaccine if not sexually active* (n=5)

(Khan, 2014): Among South Asians, 27% PDs and 26% PSs chose “It’s not allowed in my culture to have sex before marriage so don’t need this vaccine” as a reason why they did not accept HPV vaccine for their children.

(Y.-M. Lee et al., 2019): Some Korean parents believed that the vaccine was not appropriate for their children because their children were not sexually active.

(Gao et al., 2016): Among Chinese students, some female participants thought they could plan to have a vaccination right before they would engage in sexual behavior. Male participants thought they would not be at risk for infection if they refrained from sexual intercourse.

(Do et al., 2009): Some of the Cambodian key informants thought that the vaccine was unnecessary for young Cambodians because the children were not sexually active.

(M. Kim et al., 2019): Among Korean female college students, 33% chose “I have never had sexual intercourse” as a reason why they did not get vaccinated.

*No need for HPV vaccine if practicing safe sex* (n=1)

(Gao et al., 2016): Chinese students reported not intending to get the vaccine if they were practicing safe sex.

*Trust in partner’s HPV status* (n=1)

(Hopfer et al., 2017): Vietnamese women reported not getting the vaccine because they trusted that their partners were HPV-free.

*HPV vaccine promotes child’s sexual activity or promiscuity* (n=3)

(K. Kim et al., 2015): Several Korean women worried that by vaccinating a child they could send the child a wrong, unintended message that it's ok to have sex.

(Do et al., 2009): Cambodian participants discussed how parents might not permit their daughters to be vaccinated because HPV vaccine receipt could promote promiscuity.

(Dela Cruz et al., 2018): Filipino (45% PDs and 42% PSs), and Japanese (44% PDs and 33% PSs) chose “I don’t want her/him to think it’s OK to have sex” as a reason why they did not vaccinate their children.

*American lifestyle increases susceptibility; thus should get vaccinated* (n=1)

(Gao et al., 2016): Some Chinese students said they should align their vaccination behavior with Americans because many Chinese international students become sexually active in the United States and consider themselves equally at risk if dating Americans outside their race.

*Get all vaccines for my child* (n=1)

(Dela Cruz et al., 2018): Filipino (83% PDs and 86% PSs) and Japanese (91% PDs and 91% PSs) chose “I vaccinate her/him for everything else” as a reason why they had vaccinated their children.

*Worry about child’s health* (n=1)

(Khan, 2014): South Asians (42% PDs and 38% PSs) chose “I am worried about my daughter’s/son’s health” as a reason why they accepted HPV vaccine for their children.

*Belief regarding suitability of vaccine for Chinese people* (n=1)

(Gao et al., 2016): Some female and male participants were concerned about HPV vaccines from Western countries and argued, “it might not be suitable for Chinese or Asians” and asked whether “the vaccine finished clinical trials among Chinese people.”

*Too busy* (n=2)

(M. Kim et al., 2019): Among Korean female college students, 49% chose “I’m too busy” as a reason why they did not get vaccinated.

(M. Kim et al., 2017): Korean female participants mentioned being too busy as a reason for non-vaccination.

***Enabling factors***

*Perceived costs* (n=4)

(K. Kim et al., 2015): Korean women discussed high financial costs as a reason why they did not intend to get the vaccine for their children.

(Y.-M. Lee et al., 2019): Costs for vaccination was a significant barrier to HPV vaccine acceptance, especially to Korean families with multiple children.

(Do et al., 2009): Cambodians discussed costs as a barrier to parents getting HPV vaccine for their children.

(M. Kim et al., 2017): Korean female participants mentioned perceived costs as a reason for non-vaccination.

*School policy* (n=1)

(K. Kim et al., 2015): Korean women reported having received and followed a recommendation from the school to get HPV vaccine for their daughters.

*Not enough information or needing more information* (n=2)

(Khan, 2014): Among South Asians, 47% PDs and 45% PSs chose “I think there is not enough information about HPV vaccine” as a reason why they did not accept HPV vaccine for their children.

(Bastani et al., 2011): Chinese mothers (81%) and Korean mothers (66%) of daughters chose “Needing more info to make a decision” as a reason why they had not vaccinated their children.

***Reinforcing factors***

*Influence from mothers* (n=3)

(H. Lee et al., 2018): Cambodian daughter’s intention to get HPV vaccine was associated with her perception of her mother’s intention for her to get vaccinated (r=0.8, p<.01)

(Hopfer et al., 2017): When asked to describe their decision to vaccinate, 46% (n=11) of Vietnamese women included conversations with their mothers and described ways in which their mother–daughter relationship influenced their vaccine decisions. Vietnamese women were more likely to mention their mother as decision-makers only when they had been vaccinated as an adolescent. Mother–daughter conversations about HPV vaccination were also often initiated in the context of medical visits (69% of Vietnamese)

(M. Kim et al., 2017): Some Korean participants expressed how their mothers did not want them to get the vaccine. Other vaccinated participants stated that they got the vaccine because their mothers recommended it.

*HPV vaccine recommendation by parents* (n=1)

(M. Kim et al., 2019): Among Korean female college students, HPV recommendation by parents (OR=4.58, 95%CI =1.37–15.36) was determined to be an independent predictor of intention to receive the HPV vaccine.

*Influence from family* (n=1)

(M. Kim et al., 2017): Among Korean women, hearing negative messages about the vaccine through family members was a barrier to vaccine uptake.

*Influence from family and friends* (n=1)

(Zhao et al., 2014): Among Korean women, those with higher subjective norms (e.g., perceived approval of HPV vaccine from family and friends) had higher intention of getting their children vaccinated (β=.25, p<.01).

*Influence from friends* (n=2)

(Gao, 2015): Among Chinese students, having a friend who got vaccinated against HPV was a predictor of intention to get the vaccine (t=3.227; p<0.01).

(H. Y. Lee & Lee, 2017): Korean women reported that negative messages about HPV vaccine heard through friends played a role in vaccine acceptance.

*Influence from other parents* (n=1)

(K. Kim et al., 2015): Korean parents discussed how other parents’ opinions influenced their decision-making about HPV vaccine.

*Having friends whose children are HPV vaccinated* (n=1)

(Dela Cruz et al., 2018): Filipino (58% PDs and 36% PSs) and Japanese (70% PDs and 64% PSs) chose “Have friends whose children are HPV vaccinated” as a reason why they had vaccinated their children.

*Influence from social media* (n=1)

(M. Kim et al., 2017): Korean female students also discussed hearing negative messages about the vaccine through social media as a barrier to vaccination.

*Motivation to get protection from disease* (n=4)

(K. Kim et al., 2015): Motivation to protect their children from diseases was a reason underlying vaccine acceptance for adolescents among Korean parents.

(Dela Cruz et al., 2018): Filipino (95% PDs and 93% PSs) and Japanese (96% PDs and 100% PSs) chose “Protection for child” as a reason why they had vaccinated their children.

(Taylor et al., 2014): Among Cambodian mothers, 54% indicated they got the vaccine for their daughter because they wanted to protect their daughters from disease.

(Hopfer et al., 2017): Vietnamese women discussed motivation to get protection from diseases as a reason for getting the vaccine.

*Family stigma around sexual health* (n=1)

(Hopfer et al., 2017): Vietnamese women’s decision stories described family silence around discussing sex and sexual health. Family silence impeded women from taking preventive measures to ensure good reproductive health. Women acknowledged family silence and stigma around sexual health and also mentioned having Catholic, conservative family cultures that precluded them from having family conversations around sexual health and HPV.

*Knowing someone with cancer* (n=1)

(H. Y. Lee et al., 2015): Knowing someone with cancer was associated with vaccine completion among Asian female college students (OR=2.28, p<0.01).

*Family history of cancer* (n=1)

(H. Y. Lee & Lee, 2017): A barrier to vaccine intention among Korean women was not having a family history of cervical cancer and thus not thinking of themselves as being at risk.

*Interdependent self-construal* (n=1)

(Zhao et al., 2014): Among Korean women, *higher interdependent self-construal* (defined as “an orientation of self in which individuals define themselves primarily through their relationships with others”) was associated with higher HPV vaccine intention (β=.19, p<.03).

***Preventive activity***

*Having to get multiple doses* (n=1)

(M. Kim et al., 2017): Having to get multiple doses of the vaccine was cited as a barrier to vaccine uptake for Korean female college students.

*Belief regarding recommended ages* (9-26) (n=1)

(Gao et al., 2016): Chinese students disagreed with the recommended age of 9 to 26 for vaccination because they thought Chinese youths did not engage in sexual activity as early as their American counterparts.