Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

Knowledge and Acceptance of Human Papillomavirus Vaccine among Parents of Daughters: Bases for an Educational Program, in Al Hassa

Amal Ahmed Alqadi[1], Maryam Ahmed Alkadi[2], Mukhtar Ahmed Alqadhi[3], Fatimah Ahmed Alkadi[4]

Abstract

Background: The human papillomavirus (HPV) is one of the primary risk factors for cervical cancer, a malignant neoplasm for which the HPV vaccine is available, but whose acceptance and knowledge among parents is still low in different areas, including Al Hassa, Saudi Arabia. Parental beliefs are crucial for the enhancement of vaccine acceptance and the prevention of HPV-related diseases. Aim: This study sought to assess parents' knowledge, attitudes, health beliefs and acceptance toward HPV vaccine for their daughters in Al Hassa area. Method: A cross-sectional survey of 382 parents (mostly fathers, 67.8%) aged 40 years and oldest Saudi parents, 68.8% university educated. A structured questionnaire was used to collect information on demographics, HPV and cervical cancer knowledge, health beliefs, and vaccine decision-making attitudes. The psychometric testing of the survey scales supported their reliability. Results: Results demonstrated a lack of general knowledge, where 61.3% of parents did not have any knowledge on HPV. Public health care and media were primary information sources, with limited involvement of health professionals. Vaccination of daughters would only be accepted in 35.1 per cent of the points, because parents believed in the effectiveness of the vaccine and cancer prevention. The main barriers were lack of knowledge (56%) and stigma of the sexual transmission of HPV (37.7%). The most decision-making authority exerted over patients was by healthcare professionals (74.6%). Parents had varying views about the safety of vaccines and their incorporation in routine immunizations. Better knowledge and positive health beliefs were found to be significantly and positively associated with vaccine acceptance in the correlation analyses. Conclusion: Insufficient parental awareness and stigma are factors for low HPV vaccine acceptance in Al Hassa. Tailored educational campaigns through healthcare professionals in combination with culturally appropriate communication approaches should be used to improve vaccine coverage and to help minimize the cervical cancer burden.

Keywords: *HPV vaccine, parental perceptions, cervical cancer, vaccine acceptance, Al Hassa, Saudi Arabia, health beliefs.*

Introduction

High-risk human papillomavirus (HPV) is one of the most common sexually transmitted infections (STIs) worldwide, and persistent infection with high-risk types is known to be strongly associated with cervical and other anogenital cancers (WHO, 2022). Cervical cancer is responsible for a considerable proportion of morbidity and mortality due to cancer among women worldwide especially where vaccination and screening programs are lacking (Almazrou et al., 2020). Despite its high efficacy at preventing infections with oncogenic HPV types, uptake of the HV vaccine relies largely on public awareness, particularly of the parents of adolescent girls (Al-Tamimi et al., 2021). Crucially for conservative parents, the World Health Organization advises HPV vaccination for girls aged 9–14, prior to onset of sexual activity, but conservative-leaning parents may not know enough about the benefits of the vaccine to counter pressure from peers or publicity (WHO, 2022; Alzahrani et al., 2019).

Brigic (2013) on Lines about 0.3% of all cancers in Saudi mines in 2010-2012 Effectiveness of interventions to prevent in Saudi Arabia were cancers of the cervix treated before they cause of low incidence, but it is now showing signs of increase. Studies have revealed a substantial knowledge gap among the public about the HPV and HPV vaccine, especially among the parents who are the primary deciders of their daughters' health related interventions (Al-Harthi et al., 2022). An investigation in Riyadh showed that about half of parents did not know about HPV, and very few knew that the vaccine is protective (Alfageeh et al., 2021). Prolonged lack of formal education and the low level of awareness and negative attitudes and stigma

[1] RN, MSN, Nurse Specialist, PHC, Ministry of Health, Al-Ahasa Cluster, Saudi Arabia
[2] RN, MSN, Nurse Specialist, Clinical Instructor. KFGH, Ministry of Health, Al-Ahasa Cluster, Saudi Arabia
[3] Radiology and Nuclear Medicine Consultant, King Fahad Hospital - Hofuf, Al-Ahsa Health cluster, Saudi Arabia
[4] Family Medicine Consultant, Ministry of Health, Al Ahsa, Saudi Arabia

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

towards STIs among the people in Al Hassa and the misconception or the incorrect cultural beliefs related to this disease (Alzahrani et al., 2019).

Parent's belief and attitude holds the key to the acceptance of the HPV vaccine, particularly in collectivist societies like Saudi Arabia, where family oriented decision making is and children's health care decision making is under control of their parents (Al-Tamimi et al., 2021). In a cross-national survey, Alzahrani et al. (2019) mentioned, side-effects fears of promoting premarital sex were barriers to obtaining parental approval. Similarly, AlHarthi et al. (2022) established the importance of educational level and trust in health authorities for predictive vaccine acceptance. This underscores the importance of culturally appropriate education programs that deliver correct, non-threatening information that corresponds to the values and fears of local communities (Alfageeh et al., 2021).

The role of healthcare providers in promoting HPV vaccination is crucial; although often however not the one to initiate discussions on vaccination because they feel shy talking about it or because they assume resistance from parents (AlShaikh et al., 2014). This lack of communication has resulted in continuous spread of misinformation, which in turn makes parents susceptible to rumors and conspiracy theories circulated on social media (Alzahrani et al., 2019). Research has confirmed that clear healthcare-worker recommendations are a determining factor in vaccine acceptance (AlHarthi et al., 2022; Yakout et al., 2023). Thus, as part of intervention programs, it is important to include enhancement of the involvement and communication of healthcare workers in areas such as Al Hassa (Al-Tamimi et al., 2021).

Findings from prior studies in Saudi Arabia have shown that well-designed awareness campaign could significantly enhance the knowledge of parents, as well as have a positive impact on vaccination decisions (Alfageeh et al., 2021). These programs should involve school-based initiatives, mosque community discussions, primary health center outreach for culturally respectful messaging (Almazrou et al., 2020). When interventions are designed to accommodate religious issues and shared by trusted agents, they may succeed in overcoming resistance and in promoting informed consultation (AlShaikh et al., 2014). Furthermore, getting both parents to talk, especially fathers, has been found to increase vaccine acceptability in patriarchal countries (Alzahrani et al., 2019).

Based on this information, it is imperative to know the background knowledge and attitudes of parents in Al Hassa, in order to design appropriate interventions (Al-Harthi et al., 2022). Sociodemographic determinants such as level of education, previous contact with health campaigns and history of vaccinations strongly influence patterns of acceptance (Alfageeh et al., 2021). Furthermore, individual's perceptions of disease susceptibility and vaccine efficacy have a great impact on vaccine-related behaviors (Al-Tamimi et al., 2021). The information generated from this population can help in shaping educational content with basis grounded in science while at the same time it identifies with community values, providing a solid basis on which to establish a sustainable HPV vaccine program in Al Hassa.

Problem Statement

Since the HPV vaccine is an effective anti-cancer global vaccine for prevention against cervical and other HPV-related cancers, still, parental acceptance of the vaccine is a challenge for the vaccine acceptance in Saudi Arabia. In Al Hassa, lack of knowledge, cultural misunderstanding and the absence of structured health education play a role in reducing the level of understanding and negative attitudes among parents of the importance of the vaccination for their daughters against HPV. Public health endeavors to achieve broad vaccine uptake are unlikely to succeed without an adequate level of understanding and acceptance at the level of parental cognition, and it is important to investigate current knowledge and beliefs as a foundation for the development of effective culturally competent educational interventions.

Significance of the Study

This study offers an important perspective on the understanding and acceptance of HPV vaccine among parents in Al Hassa, which are an important determinant to vaccinate girls in early adolescence. Through the identification of particular knowledge gaps and sociocultural obstacles to acceptance, the results will

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

help in the design of tailored educational initiatives to enhance vaccine coverage. Improving parental knowledge about HPV and related risks is a direct cancer prevention approach and is consistent with national and international goals for promotion of women's health. This research will also be used by public health authorities and educators to develop interventions that are culturally salient, contextually appropriate and community sensitive.

Aim of the Study

This work aims at evaluating the knowledge and acceptance of human papillomavirus (HPV) vaccine among parents of daughters in Al Hassa, Saudi Arabia, and to use these findings as a basis for constructing a cultural- and evidence-based educational program to raise general awareness, clarify misconceptions, and strengthen positive attitudes using a locally sensitive approach of HPV immunization.

Methodology

This is a quantitative, descriptive, cross-sectional study to estimate parental's knowledge regarding and acceptance of the human papillomavirus (HPV) vaccine for their 9- to 18-year-old daughters. The study was carried out in primary healthcare centers located in the Al-Hassa health cluster in Saudi Arabia, through which the target population may be reached. The study sample consisted of Saudi fathers and mothers from Al-Hassa who had girls in the intended age bracket and who were literate in either Arabic or English. A random sampling method was employed, and the sample size was determined by the Richard Geiger formula with 95% confidence level and 50% response distribution, which yielded a minimum sample of 382 respondents.

Data were collected from the end of May to the end of June 2024 using a self-administered online questionnaire based on that used by Frianto et al. (2022). The questionnaire was delivered electronically through nurse workers in primary healthcare centers and by email and WhatsApp. It was divided into 5 parts, each covering sociodemographic characteristics, knowledge on HPV and CC, general attitude on vaccination, health belief, and acceptance of the HPV vaccine. Knowledge was measured in binary format, attitudes and beliefs in Likert-type scales. The estimated average duration was 10–15 minutes. Electronic informed consent was taken on the first page of the survey.

Validity of the instrument was established through expert review and pilot testing on 5% of the sample for reliability, and these pilot responses were not included in the final analysis. Internal consistency was verified by Cronbach's alpha values greater than 0.70. The study was approved by King Faisal University ethics committee (KFU-REC-2024-MAR-ETHICS2099) and Al-Hassa Health Cluster. Respondents were telephoned and briefed about the purpose, confidentiality and the right to withdraw from the study. All information was de-identified and kept securely. Analysis Quantitative data analysis was performed with SPSS version 26, and included the use of descriptive statistics and inferential tests such as chi-squared, t-tests, ANOVA, correlation and regression. Qualitative data derived from open-ended responses were thematically analyzed in line with the research aims.

Results

Table 1: *Demographical Information of the study participants. (N=382)*

Variable	*Categories*	*f*	*%*
Gender			
	Female	123	32.2
	Male	259	67.8
Age			
	20 – 25	17	4.5
	26 - 30	23	6.0
	31 - 40	130	34.0
	40 and above	212	55.5

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

Educational Level		
Elementary school	30	7.9
High school	89	23.3
University	263	68.8
Do you have any relative with cancer?		
Yes	171	44.8
No	211	55.2
Do you have any relative with cervical cancer?		
Yes	21	5.5
No	361	94.5
Do you have any relative how experienced cervical cancer screening		
Yes	35	9.2
No	347	90.8
Have your child been fully vaccinated?		
Yes	325	85.1
No	57	14.9
Have your child-experienced side effects of vaccination?		
Yes	59	15.4
No	323	84.6
Have you heard of Human Papillomavirus or HPV?		
Yes	148	38.7
No	234	61.3
How did you get information about HPV, cervical cancer and HPV vaccination?		
Media (televising, radio, internet)	104	27.2
Public healthcare facilities.	119	31.2
Families	74	19.4
Friends	38	9.9
Neighbors	6	1.6
Health professional.	41	10.7
Are you willing to vaccinate your child with HPV vaccine?		
Yes	134	35.1
No	248	64.9

Note: *f* =frequency, % = personage

Most respondents were male (67.8%) and aged 40 or older (55.5%), and a high percentage (68.8%) had a higher (university) level of education. A total of 85.1% of the parent reported the child was fully vaccinated, of whom only 38.7% had ever heard of HPV and 64.9% were unwilling to vaccinate their child against HPV.

Table 2: *Knowledge gaps by assessing parents' knowledge about HPV and the vaccine (N = 382).*

Sr	Variable	N	Mean	Std. Deviation
1	Respondents' Knowledge About HPV, Vaccination and Cervical Cancer	382	2.41	.56
2	HPV infection is very rare	382	2.30	.75
3	HPV can be transmitted sexually from one person to another	382	2.25	.74
4	Vaccination is a way to prevent HPV infection	382	2.41	.55
5	HPV infection can cause cervical cancer	382	2.35	.61
6	Screening can be conducted to detect cervical cancer	382	2.41	.55

Parents had low knowledge of HPV and its association with cervical cancer, as indicated by average scores that represented ambivalence about transmission, prevention, and consequences of HPV infection. Overall, although there was some sense that vaccination and screening were preventive, common misconceptions still prevailed.

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

Table 3: *Awareness gaps by assessing parents' knowledge about HPV and the vaccine (N = 382).*

Sr	Variable	N	Mean	Std. Deviation
1	General Attitude Towards Vaccinations - 1. Prevention is better than treatment	382	2.64	1.30
2	Vaccination is effective to prevent disease	382	2.87	1.24
3	Vaccination is good for children's health	382	2.76	1.26
4	I am worried about vaccine's side effects	382	2.48	1.34
5	Vaccines are administered to prevent very severe disease	382	2.92	1.20
6	Vaccines are administered to prevent sexually transmitted diseases	382	2.65	1.30

Parents appeared to have supportive attitudes towards vaccination, indicated by high mean scores for items such as "vaccination protects against disease" and "prevention is better than cure". Nonetheless, vaccine side effects still raised worries, showing moderate knowledge deficiency.

Table 4: *Health Belief of parents' cervical Cancer (N = 382).*

Sr	Variable	N	Mean	Std. Deviation
1	Health Beliefs Regarding Cervical Cancer - Do you agree that cervical cancer is a dangerous disease?	382	3.17	1.24
2	Can cervical cancer cause stress?	382	1.45	.74
3	Can cervical cancer cause physical problems?	382	1.48	.80
4	Do you feel worried if your children have cervical cancer?	382	1.53	.68

There were high levels of perceived severity (M = 3.17), yet emotional and physical impact scores characterizing how much respondents might be concerned about and aware of how cervical cancer would affect their life as it relates to the future and the present were not as high. These findings point to a lack of emotional involvement in the risks to children.

Table 5: *Factors that influence parental decision-making regarding HPV vaccination for their daughters.*

Variable	*f*	*%*
If you are willing to vaccinate your child with HPV vaccine, what is your main reason?		
I believe that HPV vaccine is important	45	11.8
HPV vaccine is the best way to protect girls from cervical cancer	109	28.5
I believe that HPV vaccine is effective	209	54.7
HPV vaccine is affordable for me	19	5.0
If you are not willing to vaccinate your child with HPV vaccine, what is your main reason!		
The price of HPV vaccine is expensive	24	6.3
HPV infection is a sexually transmitted disease	144	37.7
Limited information about cervical cancer and HPV vaccine	214	56.0
The price of HPV vaccine is expensive	24	6.3
Who can influence you on making decision related to HPV vaccination?		
My Child	14	3.7
My spouse	53	13.9
Other families	30	7.9
Health professionals	285	74.6
Do you think it is necessary for the government to include HPV vaccine into routine immunization?		
True	160	41.9
False	222	58.1
Do you thing HPV vaccine is safe?		
True	142	37.2
False	146	38.2
I don't know	94	24.6

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

Do you thing HPV vaccine is effective?		
True	150	39.3
False	126	33.0
I don't know	106	27.7
Where is your preferable location for HPV vaccine?		
PHC	139	36.4
Hospital	54	14.1
School	29	7.6
Other	160	41.9

Among parents in favor of vaccine, 54.7% relied on the efficacy; respondents who did not want the vaccine blamed on being misinformed (56.0%) and for being stigmatized (37.7%). Most influential vaccination decision makers were health professionals (74.6%).

Table 6: *Correlation between knowledge, attitude, health belief, and decision making among the parents (N = 382).*

Variables	M	(SD)	RK_HPV	GAV	HBRCC	RDM_HPV
RK_HPV	14.15	3.49	-	.11	.620**	.762**
GAV	16.34	5.15	-	-	.251**	.161**
HBRCC	7.65	2.44	-	-	-	.613**
RDM_HPV	16.46	3.66	-	-	-	-

** = highly significant at .01

* = Significant at .05

Information about HPV (RK_HPV) was strongly positively associated with the two constructs of health beliefs (r =. 620, p <. 01) and decision making (r = . 762, p <. 01), that is, such awareness strongly determined acceptance. Attitude and health beliefs were also found to be strongly associated with decision-making, reinforcing the potential of knowledge-based educational interventions.

Discussion

This research was conducted to assess parental attitudes, knowledge, and decision-making in the context of the HPV vaccination for daughters in the Al Hassa region. Results revealed substantial knowledge deficits in parents regarding transmission of HPV, its relation to cervical cancer, and the protective role of the HPV vaccine. Over 60% of respondents reported no knowledge of HPV and only a minority identified gender as a factor in the transmission or the cause of cervical cancer. Despite the majority of individuals having some level of higher education, these results also showed that there were significant knowledge gaps and misconceptions, especially regarding avenues of HPV transmission, vaccine timing, and the importance of screening. This agrees with the finding of Larebo et al. (2022) and Alherz et al. (2024), who described similarly low levels of awareness among populations of different educational levels. Furthermore, the low mean level of knowledge scores of the HPV-related knowledge items indicates an urgent need for organized health education programs to address these inefficiencies, in order to promote informed health choices.

Parents' attitudes toward vaccination were neutral to positive overall, andy the majority agreed that vaccines protect from serious illness. Nevertheless, worries regarding side effects were still widespread, and we found indications that they decisively impacted the willingness to vaccinate. Correlational analysis indicated that higher parental knowledge was related to stronger health beliefs and making vaccine decision, which supports the importance of correct knowledge to health attitudes and behavior. This was in line with what was observed by López et al. (2022) and Ateşeyan & Güngörmüş (2024) found that

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

inadequate knowledge regarding HPV was a barrier for the acceptance of the vaccine. In addition, the present study implies that the role of psychological interventions and direct contact with healthcare workers may serve as a strategy to overcome hesitancy because they are perceived as the most influential source in the parental decision making.

Although some had positive attitudes, only 35.1% had vaccinated their daughters, while 64.9% indicated that they would not, primarily because of lack of knowledge and stigma associated with HPV as a STI. Many parents were still undecided over vaccine safety and efficacy and this in turn shaped vaccine decisions. Refusing vaccination due to social and cultural reasons represents the enduring stigma against STIs, as reported in Alaamri et al. (2023) and Hawlader et al. (2024). On the other hand, parental acceptance was found to show higher association with the perception of high severity of cervical cancer and conviction of vaccine advantages, and this implied that publicity of disease severity and vaccine effectiveness in public health education were needed to correct their perception.

Last but not least no statistically significant gender sex difference was observed between the knowledge, attitude or Decision-making parameters whereas, education intervention should be developed without gender sex bias. The study succeeded in fulfilling its main aims, by revealing the multifaceted aspects—such as lack of knowledge, negative attitudes to social stigma and health care provider recommendation that altogether influence parental decisions regarding HPV immunization. Based on these current results, future public health efforts must be multidimensional by targeting misinformation and sociocultural beliefs, along with recommended vaccines, to enhance vaccine acceptance. Such strategies should focus on health care workers, promote community-based education and include HPV vaccination in routine immunization so that acceptance becomes routine.

Recommendations

Public health will need to issue information campaigns to limit misinformation regarding the HPV, its transmission and the association with cervical cancer. Such campaigns need to be delivered through credible sources such as healthcare professionals, since they have a significant impact on parental decision-making. The vaccination should be framed as a cancer prevention measure, included in the national immunization schedule, and be available at public health centers with culturally appropriate, gender-neutral communication to reduce stigma and reluctance.

Limitations

Cross-sectional design was employed for this study, hindering the establishment of cause-and-effect relationships between the variables. Self-reported information could have been subject to social desirability bias, particularly for sensitive topics such as HPV's sexual transmission. Also, concentrating on the Al-Hassa area and the predominance of men may limit the extrapolation of the findings to other populations.

Conclusion

The present study offers important information on parental knowledge, attitudes and decision- making regarding HPV vaccination for their daughters in the Al Hassa region. The results disclosed important gaps in knowledge related to HPV and cervical cancer, leading to low vaccine acceptability. Concerns about vaccine safety and the many Saudi women who fear or stigmatize HPV as an STI despite positive attitudes in general toward vaccination persisted as salient barriers. The impact of healthcare professionals on parental choices was evident, highlighting the importance of their engagement in educational programs. Taking into account the key determinants of parental acceptance or dismissal of the HPV vaccine, the research underscores the critical need for effective public health strategies that address the provision of accurate information, cultural competence, and provider-parent communication. Targeting these issues is critical to optimize HPV vaccine uptake and reduce the burden of cervical cancer in the region.

Journal of Ecohumanism
2025
Volume: 4, No: 2, pp. 2763 – 2774
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i2.6894

References

Alaamri, A., Alghithi, A., Salih, S., & Omer, H. (2023). Acceptance and Associated Risk Factors of Human Papillomavirus Vaccine Among Parents of Daughters in Intermediate Schools in Tabuk City, Saudi Arabia. Cureus, 15. https://doi.org/10.7759/cureus.43483.

Alherz, F., Alamri, A., Aljbreen, A., & Alwallan, N. (2024). Knowledge of cervical cancer, human papillomavirus (HPV), and acceptance of the HPV vaccine among parents of daughters in Riyadh, Saudi Arabia.. Journal of infection and public health, 17 5, 789-794 . https://doi.org/10.1016/j.jiph.2024.03.014.

Almazrou, S., Saddik, B., & Jradi, H. (2020). Knowledge, attitudes, and practices of Saudi physicians regarding cervical cancer and the human papilloma virus vaccine. Journal of infection and public health, 13(4), 584-590.

Al-Tamimi, M., Alshammari, F., Alharbi, M., Alotaibi, B., Alshehri, A., & Alanzi, T. (2021). Clinical, laboratory, and imaging features of COVID-19 in a cohort of patients: Cross-sectional comparative study. JMIR Public Health and Surveillance, 7(9), e28005. https://doi.org/10.2196/28005

Ateşeyan, Y., & Güngörmüş, Z. (2024). Web and theory-based motivational interviews in encouraging mothers for HPV vaccination of their daughters: A randomized controlled study.. Journal of pediatric nursing. https://doi.org/10.1016/j.pedn.2024.07.016. Available at: https://www.scribbr.com/methodology/data-collection/.

Frianto, D. et al. (2022) Parental acceptance of HPV vaccination, West Java, Indonesia: PPA, Patient Preference and Adherence. Available at: https://www.dovepress.com/parental-acceptance-of-human-papillomavirus-hpv-vaccination-in-distric-peer-reviewed-fulltext-article-PPA#t0003.

Hawlader, M., Eva, F., Khan, M., Islam, T., Monisha, U., Chowdhury, I., Ara, R., Meem, N., Hossain, M., Goutam, A., Zerin, T., Alam, N., Nath, R., Sifat, S., Sultana, S., Sultana, M., Saha, S., Sarker, N., Nabi, M., & Rahman, M. (2024). Acceptance of Human Papillomavirus (HPV) vaccine among the parents of eligible daughters (9–15 years) in Bangladesh: A nationwide study using Health Belief Model. PLOS ONE, 19. https://doi.org/10.1371/journal.pone.0310779.

Larebo, Y., Elilo, L., Abame, D., Akiso, D., Bawore, S., Anshebo, A., & Gopalan, N. (2022). Awareness, Acceptance, and Associated Factors of Human Papillomavirus Vaccine among Parents of Daughters in Hadiya Zone, Southern Ethiopia: A Cross-Sectional Study. Vaccines, 10. https://doi.org/10.3390/vaccines10121988.

López, N., De La Cueva, I., Vergés, E., Vicent, S., Sánchez, A., López, A., Panizo-Santos, M., Garcés-Sánchez, M., Montesdeoca, A., Rivera, A., & Suárez, C. (2022). Factors influencing HPV knowledge and vaccine acceptability in parents of adolescent children: results from a survey-based study (KAPPAS study). Human Vaccines & Immunotherapeutics, 18. https://doi.org/10.1080/21645515.2021.2024065.

Yakout, S. M., Alanazi, S., Jahlan, I., & Shahbal, S. (2023). Assessing the Significance of Pre-and Post-Health Education on the Changes of Knowledge Levels and Self-Efficacy in Pregnant Women with Urinary Tract Infections. HIV Nursing, 23(3), 1572-1579.

World Health Organization (2018). Meeting of the strategic advisory group of experts on immunization, October 2018: conclusions and recommendations. Wkly Epidemiol Record, 93, 661–80.

World Health Organization. (2020a, February 14). Human papillomavirus (HPV) and cervical cancer. https://www.who.int/europe/news-room/fact-sheets/item/human-papillomavirus-%28hpv%29