ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

DOI: 10.5336/forensic.2025-108329

Sociodemographic Characteristics of Children with Anogenital HPV Lesions: The Experience of Gülhane Child Protection Unit

Anogenital HPV Lezyonu Olan Çocukların Sosyodemografik Özellikleri: Gülhane Çocuk Koruma Birimi Deneyimi

Hüseyin BALANDIZ[a], Nihal DURMAZ[b], Büşra YIKAR[a], Burak KAYA[c], Burçin Özlem ATEŞ[d], Nadide Elmas GÜLCÜ OK[e]

[a]University of Health Sciences, Gülhane Faculty of Medicine, Department of Forensic Medicine, Ankara, Türkiye
[b]University of Health Sciences, Gülhane Faculty of Medicine, Department of Child Health and Diseases, Ankara, Türkiye
[c]Artvin Branch of the Council of Forensic Medicine, Artvin, Türkiye
[d]Ministry of Health, Gülhane Training and Research Hospital, Clinic of Child and Adolescent Mental Health, Ankara, Türkiye
[e]Ministry of Health, Gülhane Training and Research Hospital, Clinic of Mental Health and Diseases, Ankara, Türkiye

This article was presented as an oral presentation at the 5th Turkish Forensic Sciences Congress, May 16-19, 2024, Ordu, Türkiye

ABSTRACT Objective: Genital warts are one of the most common sexually transmitted diseases in recent years. Although genital warts are thought to be transmitted only sexually, there are significant non-sexual transmission routes for genital warts in children. This study aimed to reveal the role played by modes of transmission other than sexual contact in human papilloma virus-related genital warts detected in sexually inactive children. **Material and Methods:** The data of 238 cases evaluated at Gülhane Training and Research Hospital Child Protection Unit between November 2019 and June 2024 were retrospectively examined and 15 child cases evaluated with suspicion of sexual abuse and found to have genital wart lesions during examination were included in the study. **Results:** In our study, 80% of the cases were boys and the average age was 8.8 years. All cases were admitted to the hospital with their parents complaining of anogenital warts. It was determined that the parents of 14 of the 15 cases were married, that there was no marriage bond between the parents of 1 case, and that 60% of the families of the cases were in the low income group. In 53.3% of the cases, it was determined that their parents also had genital warts. As a result of the interviews and clinical evaluations, sexual abuse was not considered in any of the 15 children with anogenital warts. **Conclusions:** Physicians who encounter anogenital wart lesions in children should not approach the cases with sexual abuse prejudice, and should definitely request Child Protection Unit and Forensic-Medicine Polyclinic consultation in cases with strong suspicion of sexual abuse.

Keywords: Anogenital wart; child abuse; sexual abuse; human papilloma virus

ÖZET Amaç: Genital siğiller son yıllarda en sık görülen cinsel yolla bulaşan hastalıklardan biridir. Genital siğillerin sadece cinsel yolla bulaştığı düşünülse de, çocuklarda genital siğiller için cinsel olmayan önemli bulaşma yolları vardır. Bu çalışmanın amacı, cinsel olarak aktif olmayan çocuklarda saptanan insan papilloma virüsü ile ilişkili genital siğillerde cinsel temas dışındaki bulaşma yollarının oynadığı rolü ortaya koymaktır. **Gereç ve Yöntemler:** Kasım 2019-Haziran 2024 tarihleri arasında Gülhane Eğitim ve Araştırma Hastanesi Çocuk Koruma Birimi'nde değerlendirilen 238 olgunun verileri retrospektif olarak incelenmiş, cinsel istismar şüphesi ile değerlendirilen ve muayene sırasında genital siğil lezyonu saptanan 15 çocuk olgu çalışmaya dâhil edilmiştir. **Bulgular:** Çalışmamızda olguların %80'i erkekti ve yaş ortalaması 8,8 idi. Tüm olgular anogenital siğil şikâyeti ile ebeveynleri tarafından hastaneye başvurmuştur. On beş olgunun 14'ünün ebeveynlerinin evli olduğu, 1 olgunun ebeveynleri arasında evlilik bağı olmadığı ve olguların ailelerinin %60'ının düşük gelir grubunda olduğu belirlendi. Vakaların %53,3'ünün ebeveynlerinde de genital siğil olduğu tespit edilmiştir. Yapılan görüşmeler ve klinik değerlendirmeler sonucunda anogenital siğil saptanan 15 çocuk olgunun hiçbirinde cinsel istismar düşünülmemiştir. **Sonuç:** Çocuklarda anogenital siğil lezyonları ile karşılaşan hekimler olgulara cinsel istismar önyargısı ile yaklaşmamalı, kuvvetli cinsel istismar şüphesi olan olgularda mutlaka Çocuk Koruma Birimi ve Adli-Tıp Polikliniği konsültasyonu istemelidir.

Anahtar Kelimeler: Anogenital siğil; çocuk istismarı; cinsel istismar; insan papilloma virüsü

Correspondence: Hüseyin BALANDIZ
University of Health Sciences, Gülhane Faculty of Medicine, Department of Forensic Medicine, Ankara, Türkiye
E-mail: huseyinbalandiz@gmail.com

Peer review under responsibility of Turkiye Klinikleri Journal of Forensic Medicine and Forensic Sciences.

Received: 09 Jan 2025 ***Received in revised form:*** 16 Feb 2025 ***Accepted:*** 18 Feb 2025 ***Available online:*** 11 Mar 2025

Child sexual abuse is defined by the World Health Organization as "the involvement of a child in a sexual activity that the child does not fully understand, cannot give informed consent to, or is not developmentally ready to engage in, or that violates the rules of law or social taboos of the society".[1] Article 103 of the Turkish Penal Code defines sexual abuse as "any act committed against a child who has not reached the age of 15 years, or against a child who has reached the age of 15 years but has not developed the capacity to understand the legal meaning and consequences of the act, as well as sexual acts committed against other children only by force, threat, deception or any other reason that affects the child's will".[2]

Child abuse is a widespread problem throughout the world. A meta-analysis of 55 scientific studies from 24 countries on the prevalence of child sexual abuse reported that child sexual abuse occurs in 8-31% of girls and 3-17% of boys.[3] In Türkiye, according to data from the Turkish Statistical Institute, 13.7% of the 232,739 children who came to security units as victims of crime in 2022 were victims of sexual offences.[4]

Common findings in child sexual abuse cases include abdominal pain, rectal bleeding, injuries from falls, chronic urinary tract infections, pregnancy or behavioural problems. Detection of bleeding or foreign bodies in the vagina or rectum, condyloma acumininatum, genital herpes (genital warts), trichomoniasis, gonococcal vulvovaginitis and other sexually transmitted diseases on examination are important in assessing cases for sexual abuse.[5]

Genital warts are localised, verrucous papules or plaques in the anogenital area caused by the human papilloma virus (HPV). Genital warts are one of the most common sexually transmitted diseases in recent years. While the clinical incidence of genital warts in sexually active individuals is 1-2%, the lifetime risk is approximately 10%.[6] The presence of genital warts should be evaluated in cases where sexual abuse of the child is suspected and this situation may create a social problem. There is a common misconception, even among the general public and health professionals, that genital warts are only transmitted through sexual contact. A study conducted in Türkiye in 2024 found that 70% of healthcare workers believed that HPV was transmitted exclusively through sexual contact and only 52% of healthcare workers in Jordan accepted that HPV could be transmitted through non-sexual skin-to-skin contact.[7,8]

Although genital warts are known to be sexually transmitted, there are other non-sexual routes of transmission. Different HPV subtypes can cause warts on different parts of the body other than the sexual tract.[9] HPV can be transmitted through non-sexual skin contact, self-inoculation and vertical mother-to-child transmission.[10] It is well known that HPV has a tendency to survive for several days on surfaces and on gynaecological equipment that is frequently used.[11] In girls under the age of 18 who are not sexually active, genital warts have been reported to be transmitted non-sexually through sharing beds, towels, swimsuits, underwear and bathrooms.[12] The idea that genital warts are only sexually transmitted can cause some problems. In particular, genital warts found on examination of children can be misinterpreted as a definitive diagnosis of child sexual abuse.

In our study, we aimed to determine the role of transmission routes other than sexual contact in the transmission of HPV genital warts in sexually inactive children and to examine the sociodemographic characteristics of these cases.

MATERIAL AND METHODS

The data of 238 cases evaluated in the Child Protection Unit of Gülhane Training and Research Hospital, University of Health Sciences, between November 01, 2019 and June 30, 2024 were retrospectively analyzed and only cases with confirmed anogenital warts and therefore suspected sexual abuse (15 cases in total) were included in the study.

Within the scope of the study, the recorded data of the cases evaluated at Gülhane Child Protection Unit were examined; age, sex, clinic applied to, reason for medical complaint at the time of application, parents'; age, occupation, education, employment status, marital status, whether they were related by affinity, how they were married, income status, whether they had a criminal record, whether they had

a psychiatric diagnosis, whether they used alcohol or drugs, whether the mother or father had genital warts.

Descriptive statistical analyses were performed on the data obtained using IBM SPSS Statistics Data Editor (IBM Ltd., Armonk, New York, USA version 25.0).

This study was approved by the Gülhane Scientific Research Ethics Committee of University of Health Sciences with the decision of 2024-439 dated 10 September 2024 and was conducted in accordance with the tenets of the Declaration of Helsinki.

RESULTS

In our study, 80% (n=12) of the 15 cases with genital warts were male and 20% (n=3) were female and the mean age of the cases was 8.8 (±5.3) years. The youngest case was 1 year old and the oldest case was 17 years old.

All cases were admitted to the hospital with complaints of anogenital warts by their parents. The children in our study group were referred to the Gülhane child protection unit from the skin and venereal diseases polyclinic (n=14) and the paediatric polyclinic (n=1).

It was found that 20% (n=3) of the cases were single child families, 33.3% (n=5) were 2 child families and 46.7% (n=7) were 3 or more child families. It was found that 93.3% (n=14) of the cases lived together as parents and children and 8 (53.3%) of the cases did not have their own room. None of the cases had a history of abuse.

When analysing family characteristics, the mean age of the mother and father was 37.4 (±6.9) and 40.9 (±7.1) years respectively. Both mothers and fathers had a high school education. It was found that 66.7% of mothers were housewives and all fathers were employed. The parental education and employment status of the patients are shown in Table 1.

It was found that the parents of 14 of the 15 patients were married and the parents of 1 patient were not married but living together. The mean duration of marriage was 16.2 years (minimum: 4 years, maximum: 32 years). It was found that 13 out of 14 parents were married for the 1st time. It was found that 12 (80%) of the parents married because they loved each other (got to know each other before marriage) and 3 parents had arranged marriages. Only in 1 case (6.7%) there was a kinship between the parents.

TABLE 1: Education levels and employment status of parents

Education status	Mother	Father
Primary school graduate	2 (13.3%)	2 (13.3%)
Secondary school graduate	3 (20%)	2 (13.3%)
High school graduate	7 (46.7%)	8 (53.3%)
University graduate	2 (13.3%)	2 (13.3%)
Unknown	1 (6.7%)	1 (6.7%)
Occupation status	**Mother**	**Father**
Not working	10 (66.7%)	-
Worker	3 (20%)	10 (66.7%)
Civil servant	2 (13.3%)	2 (13.3%)
Self-employment	-	3 (20%)

When analysing their income status, it was found that 60% (n=9) of the families were in the low income group, 40% (n=6) in the middle income group and one family received financial support from outside (income status was determined by assessing whether the parents had a paid job and other additional income). Children from families in the low-income group had a higher prevalence of genital warts. It was found that 66.7% (n=10) of the cases owned the house they lived in, while 33.3% (n=5) were tenants. Seven (46.7%) patients had a room of their own, while 8 (53.3%) had no room of their own.

None of the parents were found to be drinking alcohol and there was no history of psychiatric diagnosis or treatment. One family had a criminal record and one family had a history of substance (drug) misuse (only the mother had used, still not using).

When the family history of genital warts was assessed in a total of 15 patients with genital warts, it was found that 53.3% (n=8) had a parental history of genital warts (Table 2).

Consultation with the Child and Adolescent Mental Health Diseases Polyclinic was requested for the evaluation of all cases, and it was noted that no psychopathological condition suggestive of child abuse was found in any of the cases in the consultation examination. The Gülhane Child Protection Unit

TABLE 2: Assessment of the presence of genital warts in the family

Presence of warts	Mother	Father
Present	7 (46.6%)	1 (6.7%)
None	4 (26.7%)	5 (33.3%)
Unknown	4 (26.7%)	9 (60%)

decided that sexual abuse was not considered in any of the 15 children who were found to have anogenital warts in interviews and clinical examinations.

DISCUSSION

Today, the prevalence of anogenital warts in adults and children is increasing significantly.[13,14] Particularly in children, the presence of anogenital lesions thought to be caused by sexually transmitted diseases is considered evidence of sexual abuse. As the presence of anogenital warts was for many years considered to be sexually transmitted, these cases were considered to be victims of sexual abuse.[15] However, studies have shown that anogenital warts can also be transmitted by non-sexual and vertical routes.[16] It is therefore important to clinically evaluate anogenital warts, especially those found in children, and to correctly assess whether or not child abuse is present.

In our study, 80% of the cases were boys. It is known that the incidence of genital warts increases in children. However, the incidence of genital warts varies considerably between the sexes. It has been reported that girls are about 2 times more likely to have genital warts than boys.[13] One study looked at cases of anogenital warts and reported that 64% of cases were seen in girls and suggested that this difference between the sexes was due to girls being exposed to more sexual abuse.[17] A meta-analysis of 25 studies reported that anogenital warts were much more common in girls, but the association between gender differences and child abuse was not significant.[18] In our study, contrary to these trends, it was observed that the majority of cases referred to the child protection unit with anogenital warts and suspected child abuse were boys. This difference may reflect the referral sources of the cases evaluated in our study, gendered perceptions of referral in society, or regional epidemiological differences. In addition, factors such as the fact that the presence of anogenital warts in boys attracts more attention and therefore increases the rate of referral for forensic evaluation may have contributed to this situation. However, we believe that more incidence studies should be carried out on paediatric cases of anogenital warts in our country.

In our study, the mean age was 8.8 years. A multicentre study of 576 cases of anogenital warts and suspected sexual abuse reported that cases ranged in age from 6 months to 13 years, with a mean age of 7.9 years.[19] The discovery of anogenital warts in children is often linked to suspicion of sexual abuse. Various studies have concluded that the average age of abused children is between 7 and 8 years. This may lead the physician to associate the presence of anogenital warts with sexual abuse in the medical evaluation of paediatric patients in this age group. The fact that the mean age of the cases in our study was close to the age groups associated with abuse in the literature suggests that anogenital warts in this age group may lead to more frequent evaluation of anogenital warts cases with suspicion of sexual abuse by clinicians.

Our study looked at the educational level of the patients' parents and found that 60% of the mothers and 66.6% of the fathers had completed high school or university. Differences in education levels increase people's awareness of the disease and affect hospital admissions. One study reported that sexually transmitted diseases were more common in people with higher levels of education.[20] However, this may be related to the fact that hospital admissions increase with increasing educational level or that hospital admissions are lower in patients with low educational level. In a study examining the demographic characteristics and risk factors of patients with anogenital warts in our country, 79.5% of patients were high school or university graduates.[21] It has also been suggested that this is due to the fact that people with higher levels of education have a higher level of awareness of sexually transmitted diseases and their symptoms, leading to the detection of the disease with more clinical evaluation. We believe that individuals with higher levels of education have a higher level of awareness of sexually transmitted diseases and therefore these individuals present to health services more frequently.

In our study, the highest percentage of parents were high school graduates (46.7%). The higher prevalence of HPV-related warts in individuals with a low level of education may be related to many factors, such as hygiene problems, lack of awareness of preventive measures, and limited access to health services. One study found HPV infection in women with poor genital hygiene.[22] In addition, a study in India found that HPV-positive adolescent girls used old pieces of cloth as menstrual pads and changed them only once a day.[23] In societies with lower levels of education, parents are responsible for the genital hygiene of young children, which may contribute to an increased risk of HPV transmission through non-sexual skin contact.

Only one of our cases was under 1 year of age at presentation, and his mother had genital warts and transmission was considered to be maternal. In the presence of maternal anogenital warts, these lesions may be transmitted prenatally or vertically in the perinatal period.[24] Although the route of transmission of anogenital warts occurring in the 1st year of life is thought to be perinatal, this route of transmission can last up to 24 months.[9] Although it is important to assess cases in terms of sexual abuse, it should be remembered that transitions other than sexual can also occur in children.[15]

When the parents of the cases in our study were examined, it was found that 46.6% of the mothers had anogenital warts. It was not known whether 60% of the fathers had warts as they were not examined. Although warts found on the mother or father may suggest the possibility of child abuse, it may not be a definite indicator of sexual abuse.[17] Although sexual contact is a common mode of transmission for anogenital warts, non-sexual transmission can also occur. It has been reported that anogenital warts found in children from newborn to 12 years of age have a high rate of non-sexual transmission.[25] Especially in children under 3 years of age, routine hygienic care and nappy-changing can be contaminated by heteroinoculation from the warts of those responsible for the child's care during routine hygienic care and nappy-changing, and after the age of 3 years, especially the presence of warts on the child's hand can cause autoinoculation.[26] A study of 180 cases of anogenital warts, most of which had a known source of transmission, found that 36% of cases were transmitted by autoinoculation, non-sexual and maternal vertical routes.[25] A study conducted in the USA looked at 131 cases of anogenital warts and reported that half of these cases had maternal warts, cervical dysplasia or both.[15] In a similar study, 32 children with anogenital warts and their families were examined and 12 of the mothers and 10 of the fathers were found to have genital warts. In addition, 10 of the parents who did not have genital warts were also found to have cervical warts.[27] Further research is needed to differentiate the routes of transmission of genital warts in sexual abuse. The findings suggest that these cases should be evaluated not only medically, but also socially and legally. It is important for clinicians to consider the possibility of abuse when diagnosing anogenital warts, especially in paediatric patients, but to avoid making a definitive judgement based on this finding alone. A detailed examination of both parents and any siblings and, if necessary, a gynaecological examination to see if the mother has cervical warts can play an important role in the suspicion of child sexual abuse.

In our study, anogenital warts were identified in 6.3% (n=15) of 238 cases referred to the Child Protection Unit over a period of approximately 5 years, and following detailed assessments it was decided that sexual abuse was not considered in any of the 15 cases of children with anogenital warts. Cases of sexual abuse are sensitively assessed by clinicians and, if deemed necessary, reported to the appropriate child protection services in the hospital or province. However, this situation can often lead to the misconception that all reported cases are sexual abuse cases. In a study conducted in Greece, 38 cases of anogenital warts were evaluated and it was reported that only 1 of these cases was evaluated as sexual abuse.[28] In a similar study, only 3 out of 131 cases of anogenital warts were thought to be sexual abuse, but none of these were found to be sexual abuse in the assessments that were made.[15] In a study carried out in our country, 13 cases were assessed and it was reported that although 8 of these cases had warts on their parents, none of the cases were assessed as sexual abuse in the multidisciplinary assessment.[29] This situation

is also supported by a similar study.[30] The results show that the possibility of sexual abuse should not be ignored in children with anogenital warts, but the diagnosis of "sexual abuse" should not be made as soon as the wart is detected. The diagnosis of sexual abuse of a child exposes the child and his/her family to a variety of traumas such as prosecution, court, police, gendarmerie and medical examinations. It is therefore necessary to evaluate these cases carefully and to consider every possibility before traumatising children and their families.

At our hospital (Gülhane Training and Research Hospital), we use our paediatric HPV algorithm to ensure that nothing is overlooked in the diagnosis, treatment and forensic processes of these paediatric patients (Figure 1).

When a doctor working at our hospital sees a child with anogenital HPV lesions, he/she 1st informs the Gülhane child protection unit and then requests consultation with the relevant clinics.

a. Skin diseases polyclinic: Makes the diagnosis and differential diagnosis of anogenital warts in the child.

b. Infectious diseases polyclinic: Performs screening tests for other sexually transmitted diseases in the child and and applies prophylactic treatment if necessary.

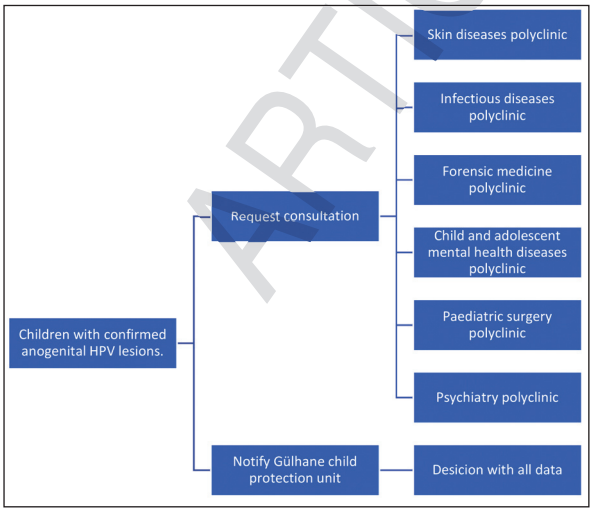

FIGURE 1: Gülhane child protection unit, algorithm for children with confirmed anogenital HPV lesions.
HPV: Human papilloma virus

c. Forensic medicine polyclinic: Carries out a general physical examination of the child and checks whether there is any suspicion of physical or sexual abuse.

d. Child mental health and diseases polyclinic: Determines whether the child's mental health is adversely affected and whether the child has a mental illness.

e. Paediatric surgery polyclinic: Examines and treats the child for lesions such as anal fissure etc.

f. Psychiatry polyclinic: Organises the diagnosis and treatment of family members when a mental disorder is suspected in family members as a result of interviews with the family.

g. Gülhane child protection unit: Interviews the family members and the child separately and learns all the details about the case and the family structure. Makes a final decision on the case by evaluating the case together with the findings of the doctor who 1st examined the case, all consultation results and the results of the family interview. If necessary, notifies the judicial authorities and relevant state institutions and follows the entire forensic medical process.

CONCLUSIONS

The assessment of anogenital warts in the context of child abuse is a very complex and sensitive issue. Physicians encountering anogenital warts in children should approach the case without prejudice to sexual abuse. Physicians; should assess the risk groups of the cases by taking anamnesis, should take a separate history from the child and the family, should question the socioeconomic status of the families, should perform a full body examination for other traumas, should perform a detailed examination of the genital and anal area, should ask for consultation from a child psychiatrist, and screen for other sexually transmitted diseases. If necessary, they should give the patient prophylactic treatment, check the parents' history and examination for HPV lesions, request consultation with the Child Protection Unit and Forensic Medicine Polyclinic in cases of suspected sexual abuse, and if these units are not available, ensure that these cases are referred to Child Monitoring Centres through the police.

Although there are worldwide guidelines for the diagnosis, treatment and vaccination of HPV, to our knowledge, there is no guideline that outlines the forensic medical approach of a clinician encountering a paediatric patient with HPV lesions.[31-33] In order to overcome this problem and to ensure that physicians can approach paediatric patients with anogenital HPV lesions in a complete manner, the relevant authorities should develop a guideline as soon as possible that includes all steps in both forensic procedures and medical intervention, perhaps with the help of our algorithm (Figure 1).

We also believe that all physicians should be educated against HPV, they should be informed about these lesions and awareness should be raised, the Ministry of Health should run HPV awareness education campaigns for the public, especially school-age children should be taught about all sexually transmitted diseases as part of the curriculum, and even HPV vaccine should be included in routine immunisation (vaccination) programmes starting from childhood. The U.S. Centers for Disease Control and Prevention Advisory Committee on Immunization Practices (ACIP) organisation's recommendations on HPV vaccination are as follows: "HPV vaccine is recommended for routine vaccination at age 11 or 12 years (Vaccination can be started at age 9), ACIP also recommends vaccination for everyone through age 26 years if not adequately vaccinated when younger".[31]

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

REFERENCES

1. World Health Organization [Internet]. Preventing Child Maltreatment: A Guide To Taking Action And Generating Evidence. ©2024 WHO [Cited: October 08, 2024] Available from: https://www.who.int/publications/i/item/preventing-child-maltreatment-a-guide-totaking-action-and-generating-evidence
2. Turkish Penal Code Last Accessed Date: 05.01.2025. Available from: https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=8053&MevzuatTur=7&MevzuatTertip=5. (Kaynak teyit edilmelidir.)
3. Barth J, Bermetz L, Heim E, Trelle S, Tonia T. The current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis. Int J Public Health. 2013;58(3):469-83. PMID: 23178922.
4. Türkiye İstatistik Kurumu [İnternet]. Güvenlik Birimine Gelen veya Getirilen Çocuk İstatistikleri, 2022. [Erişim tarihi: 08 Ekim 2024] https://data.tuik.gov.tr/Bulten/Index?p=Guvenlik-Birimine-Gelen-veya-Getirilen-Cocuk-Istatistikleri-2022-49662
5. Ozyurt G, Guller B, Baykara B, Gencer O, Ozbek AO. Assessment for sexual abuse in a case presenting with genital herpes. Dusunen Adam the Journal of Psychiatry and Neurological Sciences. 2015;28(4):378-81. doi:10.5350/dajpn2015280411
6. Jayasinghe Y, Garland SM. Genital warts in children: what do they mean? Arch Dis Child. 2006;91(8):696-700. PMID: 16670117; PMCID: PMC2083049.
7. Doğan A, Toker MS, Gozdas HT, Bal T. Knowledge and attitude of turkish male health care workers regarding human papillomavirus and vaccination. Am J Mens Health. 2024;18(6):15579883241304574. PMID: 39668617; PMCID: PMC11639014.
8. Qaqish A, Abdo N, Abbas MM, Saadeh N, Alkhateeb M, Msameh R, et al. Awareness and knowledge of physicians and residents on the non-sexual routes of human papilloma virus (HPV) infection and their perspectives on anti-HPV vaccination in Jordan. PLoS One. 2023;18(10):e0291643. PMID: 37819974; PMCID: PMC10566688.
9. Mammas IN, Sourvinos G, Spandidos DA. Human papilloma virus (HPV) infection in children and adolescents. Eur J Pediatr. 2009;168(3):267-73. PMID: 19050916.
10. Kawssan A, Chawiche C, Shamas Z, Hamdar H. Non-sexual transmission of sexually transmitted diseases in women. Journal of Medical Research and Reviews. 2024;3(1):17-22. doi: 10.5455/JMRR.20240702073007
11. Petca A, Borislavschi A, Zvanca ME, Petca RC, Sandru F, Dumitrascu MC. Non-sexual HPV transmission and role of vaccination for a better future (Review). Exp Ther Med. 2020;20(6):186. PMID: 33101476; PMCID: PMC7579832.
12. Sabeena S, Bhat P, Kamath V, Arunkumar G. Possible non-sexual modes of transmission of human papilloma virus. J Obstet Gynaecol Res. 2017;43(3):429-35. PMID: 28165175.
13. Culton DA, Morrell DS, Burkhart CN. The management of condyloma acuminata in the pediatric population. Pediatr Ann. 2009;38(7):368-72. PMID: 19685656.

14. Patel H, Wagner M, Singhal P, Kothari S. Systematic review of the incidence and prevalence of genital warts. BMC Infect Dis. 2013;13:39. PMID: 23347441; PMCID: PMC3618302.

15. Jones V, Smith SJ, Omar HA. Nonsexual transmission of anogenital warts in children: a retrospective analysis. ScientificWorldJournal. 2007;7:1896-9. PMID: 18060328; PMCID: PMC5901196.

16. Demirkıran DS, Arslan MM. Anogenital verru and sexual abuse in childhood: review. The Bulletin of Legal Medicine. 2012;17(3): 25-30. doi:10.17986/blm.201217330

17. Marcoux D, Nadeau K, McCuaig C, Powell J, Oligny LL. Pediatric anogenital warts: a 7-year review of children referred to a tertiary-care hospital in Montreal, Canada. Pediatr Dermatol. 2006;23(3):199-207. PMID: 16780463.

18. Awasthi S, Ornelas J, Armstrong A, Johnson JA, Eisen DB. Anogenital warts and relationship to child sexual abuse: Systematic review and meta-analysis. Pediatr Dermatol. 2021;38(4):842-50. PMID: 34060139.

19. Unger ER, Fajman NN, Maloney EM, Onyekwuluje J, Swan DC, Howard L, et al. Anogenital human papillomavirus in sexually abused and nonabused children: a multicenter study. Pediatrics. 2011;128(3):e658-65. PMID: 21844060.

20. Faber MT, Nielsen A, Nygård M, Sparén P, Tryggvadottir L, Hansen BT, et al. Genital chlamydia, genital herpes, Trichomonas vaginalis and gonorrhea prevalence, and risk factors among nearly 70,000 randomly selected women in 4 Nordic countries. Sex Transm Dis. 2011;38(8):727-34. PMID: 21844702.

21. Tamer E, Çakmak SK, İlhan MN, Artüz F. Demographic characteristics and risk factors in Turkish patients with anogenital warts. J Infect Public Health. 2016;9(5):661-6. PMID: 26776703.

22. Orya EE, Bello KK, Sampson S, Envuladu EA, Okagbue HI. Varying behavioral differences and correlates of HPV infection among young adolescents in Benue state, Nigeria. BMC Public Health. 2024;24(1):1548. PMID: 38849788; PMCID: PMC11162061.

23. Budukh A, Maheshwari A, Palayekar V, Bagal S, Purwar P, Deodhar K, et al. Prevalence and nonsexual transmission of human papilloma virus (HPV) in the adolescence girls from rural area of Maharashtra state, India. Indian J Cancer. 2018;55(4):336-9. PMID: 30829266.

24. Cohen BA, Honig P, Androphy E. Anogenital warts in children. Clinical and virologic evaluation for sexual abuse. Arch Dermatol. 1990;126(12):1575-80. PMID: 2175163.

25. Syrjänen S, Puranen M. Human papillomavirus infections in children: the potential role of maternal transmission. Crit Rev Oral Biol Med. 2000;11(2):259-74. PMID: 12002819.

26. Chromy D, Silling S, Wieland U, Kreuter A. Anogenitalwarzen – ein Update [Anogenital warts-An update]. Dermatologie (Heidelb). 2024;75(1):30-9. German. PMID: 38108864.

27. Obalek S, Jablonska S, Favre M, Walczak L, Orth G. Condylomata acuminata in children: frequent association with human papillomaviruses responsible for cutaneous warts. J Am Acad Dermatol. 1990;23(2 Pt 1):205-13. PMID: 2170467.

28. Stefanaki C, Barkas G, Valari M, Bethimoutis G, Nicolaidou E, Vosynioti V, Kontochristopoulos G, Papadogeorgaki H, Verra P, Katsarou A. Condylomata acuminata in children. Pediatr Infect Dis J. 2012;31(4):422-4. PMID: 22189529.

29. Yazganoğlu KD, Mirzoyeva L, Özarmağan G. Çocuklarda Kondiloma Aküminata. Turkish Journal of Dermatology. 2009;3(4):77–82. https://turkjdermatol.com/pdf/337910e4-2271-4883-88bd-db7abaf5adda/articles/9923/77-82.pdf

30. Ekiz Ö, Rifaioğlu EN, Bülbül Şen B, Şen T, Çelikel A, Demirkıran DS, et al. Anogenital Verrülü Çocuk Hastalarında 3 Yıllık Gözlem. MKÜ Tıp Fak. Dergisi. 2012;3(10):22-8.

31. CDC [Internet]. HPV Vaccination Recommendations. [Cited: February 13, 2025]. Available from: https://www.cdc.gov/vaccines/vpd/hpv/hcp/recommendations.html

32. World Health Organization [Internet]. WHO Guideline For Screening And Treatment of Cervical Pre-Cancer Lesions for Cervical Cancer Prevention, Second Edition: Use of MRNA Tests for Human Papillomavirus (HPV). ©2025 WHO [Cited: February 14, 2025]. Available from: https://www.who.int/publications/i/item/9789240040434

33. American Society for Colposcopy and Cervical Pathology (ASCCP) [Internet]. Cervical Screening, Management, and Colposcopy Guidelines and Recommendations © 2025 ASCCP [Cited: February 14, 2025]. Available from: https://www.asccp.org/clinical-practice/guidelines?gad_source=1&gclid=CjwKCAiAzba9BhBhEiwA7glbas8nwn_NPsBxeORHEP7IQGGukeOsb11WyPib1c-Qxzgwq8RZMb2A2BoCxsAQAvD_BwE