

**EPIDEMIOLOGICAL PROFILE OF HPV AMONG PATIENTS WITH MULTIPLE PARTNERS IN MOROCCO**Iraqui Houssaini Zineb\*<sup>1</sup>, Hadi Imane<sup>2</sup>, Wali Alami Mohamed<sup>3</sup> and Benouda Amina<sup>4</sup><sup>1,2,3,4</sup>Rabat, Morocco.

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**ABSTRACT**

Human papillomaviruses (HPV) are significant contributors to cervical cancer, a pressing public health issue in Morocco, where it ranks second among cancers in women. This study aimed to evaluate the prevalence of HPV infection in women with multiple sexual partners and assess associated intracellular lesions. A retrospective, cross-sectional analysis was conducted from December 2022 to May 2023, involving 36 women aged 16 to 31. HPV detection was performed using RT-PCR, and histological data were collected from pathology archives. Results indicated a striking 78% prevalence of HPV, with 46% harboring high-risk types. Specifically, HPV 16 and HPV 18-45 accounted for 25% and 13% of infections, respectively. Among HPV-positive individuals, 21% exhibited intraepithelial lesions, with half linked to high-risk types. These findings underscore the urgent need for targeted screening and vaccination initiatives, particularly for women with multiple partners, to mitigate cervical cancer risk. Additionally, raising awareness and improving healthcare access are vital for effective HPV prevention strategies in Morocco. This study highlights the importance of integrating education on HPV risks and vaccination into public health programs.

**KEYWORDS:** HPV, Epidemiology, female population, multiple partners.**INTRODUCTION**

Human papillomaviruses, also known as HPV, are a group of sexually transmitted viruses involved in several types of cancer, including cervical cancer, which represents a major public health problem worldwide. In Morocco, this cancer is the second most common among women after breast cancer, with 14.1 new cases per 100,000 women per year.<sup>[1, 2]</sup> The main objective of this research was to evaluate the prevalence of HPV infection among women with multiple sexual partners and to examine the intracellular lesions related to this infection.

**MATERIALS AND METHODS**

This is a retrospective and cross-sectional study conducted over a period of 5 months, from December

2022 to May 2023. This study was conducted on a sample of 36 women aged from 16 to 31 years who had multiple partners. The average age of this population was 23 years. The search for the virus was conducted using RT-PCR (GenXpert). Histological data were collected from the archives of the pathology department of the hospital.

**RESULTS**

The study included 36 women, revealing an overall prevalence of 78% of HPV infections (28/36). Among them, 25% were infected with HPV 16 (9/36), 13% with HPV 18-45 (5/36), and 64% were carriers of other HPV types (23/36), with various combinations (Graph 1).



**Graph 1: Diagrams illustrating the prevalence of HPV among women with multiple partners in Morocco according to our study.**

The infection due to high-risk carcinogenic HPVs (16, 18, 45) was 46%. Among the 28 HPV-positive women, 6 cases, or 21%, presented intraepithelial lesions (Table 1). Among these 6 cases, 2/6 were affected by HPV 16, 1/6

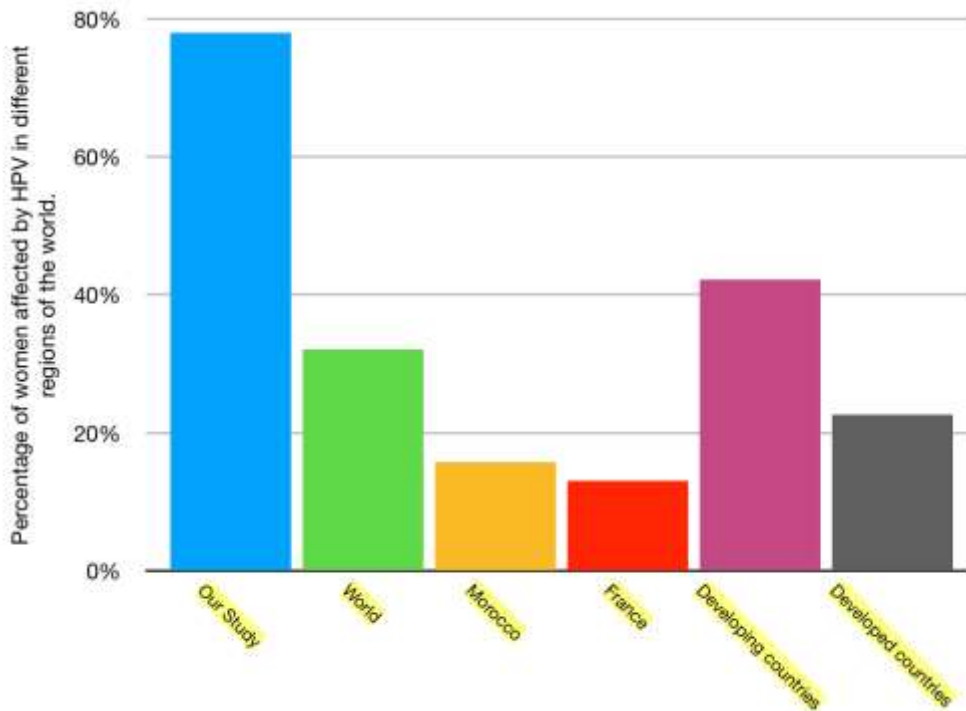
by HPV 18-45, and 5/6 by other HPV types (including 2 also affected by HPV 16). Thus, 50% of cases with intraepithelial lesions were related to high-risk carcinogenic HPVs.

**Table 1: Table representing the various intraepithelial lesions found in patients of our study.**

Type de lesion	Signs of Early Metaplastic Changes. Slightly Inflammatory	Suspicious Cytological Aspect of a Flat Condyloma: ASCUS	Low-Grade Squamous Intraepithelial Lesion : LSIL	Signs of extensive metaphyseal remodeling. Marked inflammation.	Total epithelial lesions.
Nombre	1	2	2	1	6

A study in Morocco showed that approximately 15.7% of 938 women examined, not specifically those with multiple partners, were infected with HPV, particularly types 16 and 18.<sup>[3]</sup> This local prevalence is significant, but it is even higher globally, where a large study involving 576,281 women revealed a total prevalence of

32.1% of HPV.<sup>[4]</sup> Notably, less developed countries showed a much higher prevalence, reaching 42.2%, compared to 22.6% in more developed countries (Graph 2). Moreover, regardless of the studied region, HPV types 16 (9.5%) and 18 (6.2%) were the most common, highlighting their global predominance.



**Graph 2: Diagram illustrating the prevalence of HPV worldwide in comparison with our study.**

So far, researchers have identified around twenty human papillomaviruses (HPVs) responsible for cervical cancer, making this cancer the first recognized by the WHO as fully attributable to a viral infection. Among these HPVs, the most common types are HPV 16, involved in 55% of cases, and HPV 18, involved in 12% of cases. These oncogenic HPVs can also affect other mucous membranes, leading to anal or oropharyngeal cancers.

**DISCUSSION**

The results of this study reveal an alarming prevalence of HPV among women with multiple partners in Morocco, reaching 78%. This figure is significantly higher than that observed in other local studies, where the prevalence was 15.7%.<sup>[3]</sup> This difference may be explained by more

frequent risky sexual behaviors, particularly having multiple partners, which increases exposure to the virus. Previous studies have also highlighted the impact of risky sexual behaviors on the incidence of HPV, asserting that an increase in the number of sexual partners is correlated with a higher prevalence of HPV infections.<sup>[5, 6]</sup>

The high prevalence of high-risk HPV types (46%) in our study is particularly concerning, as these types are directly linked to the development of early lesions and cancers. Types 16 and 18, present in 50% of cases of intraepithelial lesions, are recognized for their association with cervical cancer and other cancers.<sup>[4]</sup> This underscores the importance of early screening and

appropriate treatments for at-risk women, especially those with multiple partners.

Globally, the prevalence of HPV varies considerably, with higher rates in developing countries, where access to healthcare and vaccinations is often limited.<sup>[4]</sup> Morocco has recently integrated the HPV vaccine into its vaccination schedule, which is a positive advancement. However, to maximize the impact of vaccination, it is essential to raise awareness among young women and their families about the importance of vaccination before the onset of sexual activity. A recent study showed that targeted vaccination programs can significantly reduce the incidence of HPV infections and associated cancers.<sup>[7]</sup>

Moreover, it is crucial to conduct awareness campaigns about HPV and its consequences, as well as to improve access to screening services. The results of our study also highlight the need to educate healthcare professionals on the importance of regular screening to detect early lesions.<sup>[8]</sup>

Finally, it would be pertinent to continue research to identify other sociocultural factors influencing HPV prevalence in the Moroccan female population. Understanding these dynamics will allow for the development of more targeted and effective interventions to combat this infection and its complications.

## CONCLUSION

This study highlighted the high frequency of HPV among women with multiple partners in Morocco. The fight against this virus infection relies on two prevention strategies: vaccination and early screening for cervical cancer. Since October 2022, the HPV vaccine has been integrated into the official vaccination schedule in Morocco, representing a significant advancement in the prevention of this infection and its complications.

## REFERENCES

1. Berraho M, Obtel M, Bendahhou K, Zidouh A, Errihani H, Benider A, Nejjari C. Sociodemographic factors and delay in the diagnosis of cervical cancer in Morocco. *Pan Afr Med J.*, 2012; 12: 14. Epub 2012 May 25.
2. Ferlay J, Shin H, Bray F, Forman D, Mathers C, Parkin DM. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer*, 2010; 127(12): 2893-917.
3. Zaitouna Alhamany, Mohammed El Mzibri. Prevalence of human papillomavirus genotype among Moroccan women during a local screening program, 2010 Nov 24; 4(11): 732-9.
4. Bruni L, et al. "Global estimates of human papillomavirus vaccination coverage." *International Journal of Cancer*, 2016; 138(3): 484-490.
5. Schiffman M, et al. "Human papillomavirus and cervical cancer." *The Lancet*, 2007; 370(9590): 890-907.
6. Arbyn M, et al. "Worldwide burden of cervical cancer in 2008." *The Lancet Oncology*, 2011; 12(12): 1195-1207.
7. Denny L, et al. "Human papillomavirus vaccination in developing countries: a study of health systems." *BMC Health Serv Res.*, 2018; 18(1): 312.
8. Poljak M, et al. "The importance of screening and early detection of cervical cancer." *Eur J Obstet Gynecol Reprod Biol.*, 2014; 174: 154-158.