



Knowledge, Attitudes and Acceptability of Vaccination against Human Papillomavirus: Study among Health Workers at Nabil Choucair and Phillippe Maguilen Senghor Health Centers (Dakar, Senegal): About 95 Cases

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Abstract

The objective of our study was to assess levels of knowledge about Human Papillomavirus, attitudes and acceptability of vaccination. This was a cross-sectional, descriptive and analytical study conducted at the Nabil Choucair and Philippe Maguilen Senghor Health Centers during the period from January 1 to May 30, 2019 (5 months). The parameters studied in these health workers were age, education, ethnicity, occupation, marital status, knowledge of human papillomavirus, and knowledge and acceptability of cervical cancer vaccination. Data collection was done with Epi info version 7 and data analysis with Spss (Statistical Package for the social sciences) version 21. In our series, 95 health workers were enrolled. The average age of the health workers was 30.9 years, with extremes from 21 to 57 years, and the majority were doctors (65.3%). In this study 92.6% of the agents knew about HPV. The acceptability of taking the HPV vaccine was noted in only 47.4% of the agents.

Keywords: Acceptability; Cervical Cancer Vaccination; Senegal; Human Papillomavirus

Introduction

Cervical cancer is a global public health problem with 550,000 new cases and 311,000 deaths per year in 2018 [1]. More than three-quarters of cervical cancer deaths occur in poor countries. The natural history of cervical cancer was turned upside down when H. Zur Hausen established that infection with oncogenic human papillomavirus (HPV) is the key factor in tumor development: 99.8% of cervical cancer disease products contain at least one type of oncogenic HPV [2]. Thus, this discovery has led to the introduction of the HPV viral test for the screening of women at risk and to the development of vaccination against human papillomavirus. This vaccine is an effective weapon in the prevention of

cervical cancer. The World Health Organization (WHO) recommends HPV vaccination for girls in the 9-13 age group. In Senegal, the vaccine against this cancer was introduced in the Expanded Programme on Immunization (EPI) on 31 October 2018 and will cover all girls aged 9 years.

In addition, there is increased reluctance to vaccinate among the general population and the medical profession in particular. In a climate of global suspicion and mistrust, it raises many questions.

Thus, we felt it was important to conduct a study among health workers to assess levels of knowledge about HPV and vaccination and their attitudes towards vaccination.

Materials and Methods

This was a cross-sectional, descriptive and analytical study conducted at the Nabil Choucair and Philippe Maguilen Senghor Health Centers during the period from January 1 to May 30, 2019 (5 months). Included in our study were all health personnel working in these two structures who agreed to participate in our survey. We had obtained the consent of each staff member at the beginning of the questionnaire through a semi-structured interview.

The objective of our study was to assess health workers' levels of knowledge about human papillomavirus and vaccination and their attitudes towards vaccination. The parameters studied in these health workers were age, education, occupation, marital status, knowledge of human papillomavirus, and knowledge of cervical cancer vaccination. A fact sheet was used as the basis for collecting population data.

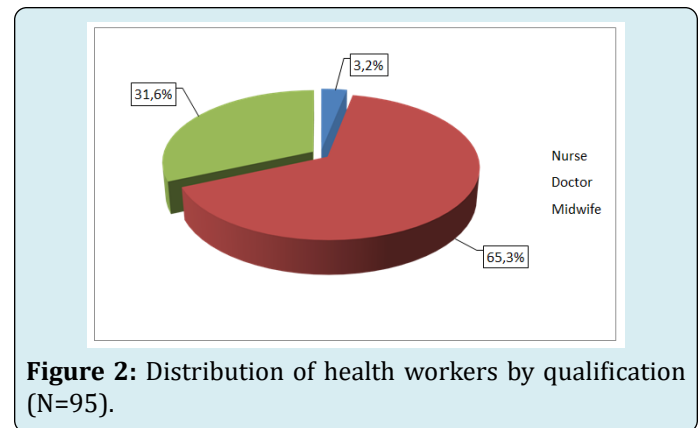
Data collection was done with Epi info version 7 software and data analysis with Spss (Statistical Package for the social sciences) version 21 software. The latter consisted of two parts: descriptive analysis and analytical analysis.

Results

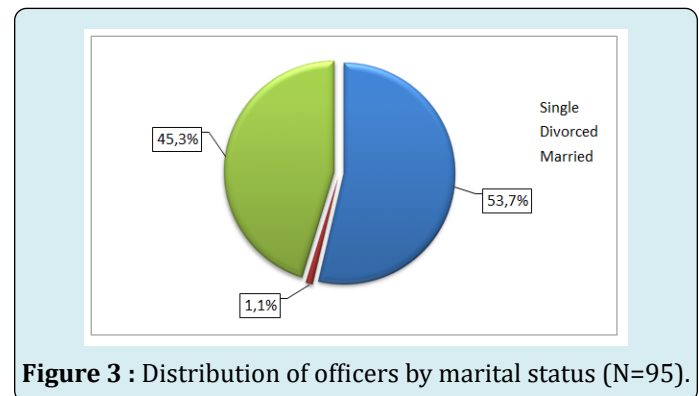
The average age of officers was 30.9 years with a standard deviation of 7.5 and extremes of 21 and 57 years. The median was 29 years and more than half of the officers, 58.9% (N=56) were 30 years of age or younger as reported figure 1.



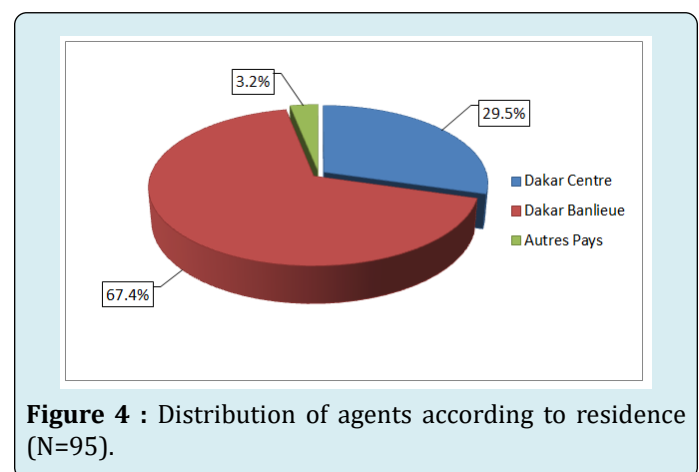
More than half of the agents 65.3% (N=62) were physicians (Figure 2).



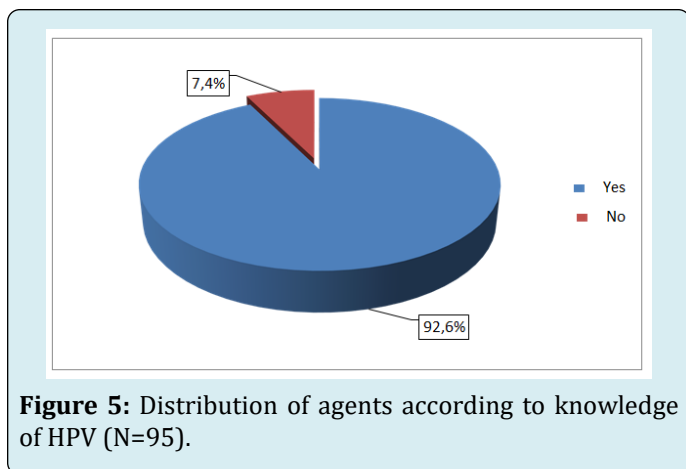
Single people represented more than half of the agents 53.7% (N=51) as reported Figure 3. On the other hand, 43 officers were married (45.3%). Of these, 93% (n=40) were monogamous and 7% (n=3) were polygamous.



Health workers most often resided in the suburbs of Dakar as reported in Figure 4.



Almost all agents 92.6% (N=88) were aware of HPV as reported in the figure 5.

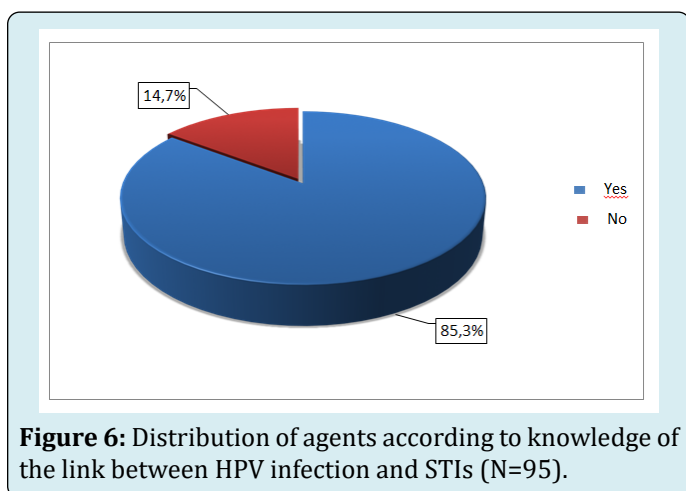


Medical studies were the main source of information on HPV as reported (Table 1).

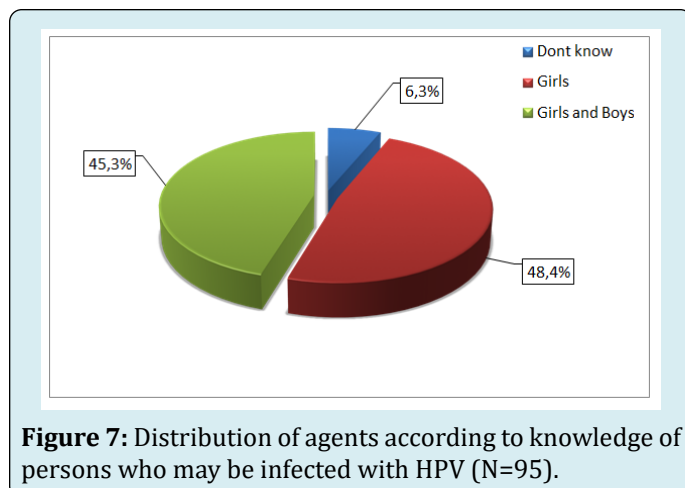
Sources of information on HPV	Effective (n)	Percentage (%)
Studies	45	51,1
TV	28	31,8
Radio	27	30,7
Entourage	22	25,0
Healthcare personnel	17	19,3
Family	1	1,1

Table 1: Distribution of agents according to sources of information on HPV (N=95).

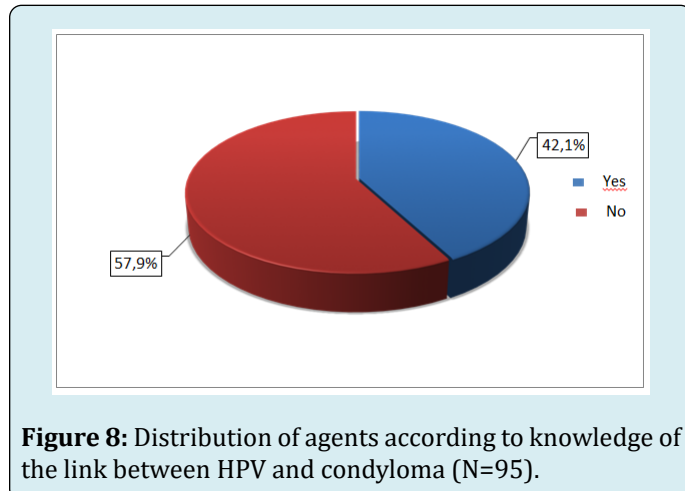
A total of 81 agents (85.3%) were aware that HPV infection was an STI.



More than half of the officers (54.7%) did not know who the HPV targets were. However, forty-eight percent (48.4%) thought that HPV infection was only in girls.



Less than half of the agents, only forty (42.1%) were aware that HPV was responsible for condylomata.



Knowledge of the link between HPV and cervical cancer : Almost all agents 95.8% (N=91) were aware that HPV is responsible for cervical cancer. More than half of the agents fifty (52.6%) were aware that HPV can cause other cancers. These were mainly genital cancers (Table 2).

Other HPV cancers	Frequency	Percentage
sexual organs	17	34,0
throat	10	20,0
esophagus	10	20,0
ENT	9	18,0
Oropharynx	7	14,0
Hypophraynx	2	4,0
Peau	1	2,0

Table 2: Distribution of agents according to knowledge of other cancers caused by HPV (N=50).

- **Knowledge of the two HPVs most implicated in cervical cancer** Forty-five agents (47.4%) knew the two most common HPVs involved in cervical cancer.
- **Knowledge of the HPV vaccine** : Eighty-nine (89) agents (93.7%) knew about the HPV vaccine. Health workers were the main sources of information (Table 3).

Sources of information on HPV	Frequency	Percentage
Healthcare personnel	65	73,0
Radio	32	36,0
TV	31	34,8
Studies	20	21,1
Entourage	13	14,6
Search	2	2,2

Table 3: Distribution of agents according to sources of information on HPV vaccine (N=88).

In our study 32 agents (33.7%) knew the vaccine types. Of these 32 agents, 26 knew both vaccines, 4 knew only Gardasil and 2 knew only cervarix as reported in the previous table (Table 4).

HPV vaccine types	Frequency	Percentage
Gardasil and Cervarix	26	81,3
Gardasil	4	12,5
Cervarix	2	6,2
Total	32	100,0

Table 4: Distribution of agents according to HPV vaccine types (N=32).

In total, only 12 agents (12.6%) were aware of the side effects of the HPV vaccine. Pain at the needle bridge was the main side effect reported by the agents (Table 5).

Side effects of the HPV vaccine	Frequency	Percentage
Pain	9	75,0
Fever	7	58,3
Headache	3	25,0

Table 5: Distribution of agents by HPV vaccine side effects (N=12).

- **Knowledge of HPV vaccine route of administration:** In total, only 41 agents (43.2%) knew how to administer the HPV vaccine.
- **Knowledge of people targeted for vaccination:** A total of 46 agents (48.4%) knew the people targeted by the HPV vaccine.
- **Knowledge of someone in the community who has benefited from the HPV vaccine:** Only 9 agents (9.5%) knew someone close to them who had received the HPV vaccine.
- **Sufficient information on the HPV vaccine:** Fourteen agents (14.7%) considered the information received on the HPV vaccine to be sufficient.

Almost half of the agents (47.4%) accepted HPV vaccination (Figure 9).

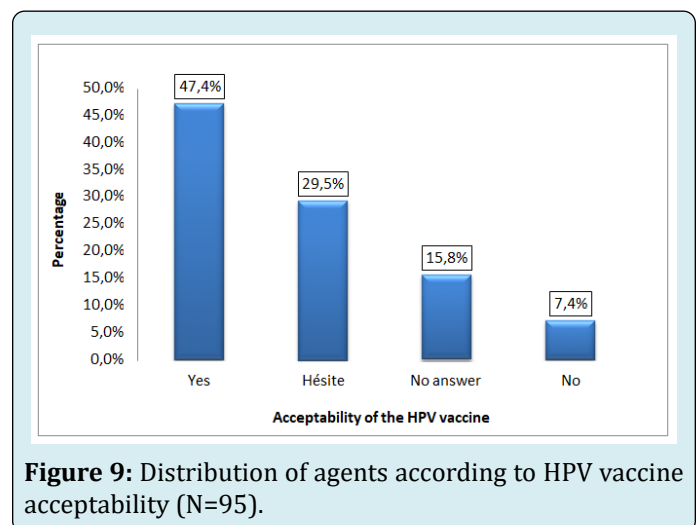


Figure 9: Distribution of agents according to HPV vaccine acceptability (N=95).

Reason for Acceptability

In our study, the 97.1% of the agents who accepted the vaccination, suggested protection against cervical cancer and other serious pathologies as the reason.

Reason for Refusal or Hesitation

The main reasons cited in our study were lack of sufficient information about the vaccine (73%) and fear of side effects.

The distribution of HPV vaccine acceptability varied according to the area of residence of the agents (Table 6).

Socio-demographic characteristics	Acceptability of HPV vaccine					P Value
	Yes		No		Total	
	N	%	N	%		
Age range						
≤30 years	29	57,8	27	48,2	56	0,301
>30 years old	16	41,0	23	59,0	39	
Profession						
Doctor	33	53,2	29	46,8	62	0,117
Others	12	36,4	21	63,6	33	
Marital status						
Married	20	46,5	23	59,5	43	0,879
Unmarried	25	48,1	27	51,9	52	
Suburban residence zone						
Yes	25	39,1	39	60,9	64	0,019
No	20	64,5	11	35,5	31	

Table 6: Distribution of HPV vaccine uptake by socio-demographic characteristics

The distribution of HPV vaccine acceptability varied according to knowledge of HPV (Tables 7 & 8).

knowledge about HPV	Acceptability of HPV vaccine					P Value
	Yes		No		Total	
	N	%	N	%		
HPV knowledge						
Yes	44	50,0	44	50,0	88	0,068
No	1	14,3	6	85,7	7	
Medical sources						
Yes	35	58,3	25	41,7	60	0,005
No	10	28,6	25	71,4	35	
Knowledge HPV is STI						
Yes	42	51,8	39	48,2	81	0,035
No	3	21,4	11	78,6	14	
Knowledge of people who may be infected with HPV						
Yes	26	60,5	17	39,5	43	0,020
No	19	36,5	33	63,5	52	
Knowledge HPV responsible condyloma						
Yes	24	60,0	16	40,0	40	0,035
No	21	38,2	34	64,8	55	
Knowledge HPV responsible for cervical cancer						
Yes	45	49,5	46	50,5	91	0,051
No	0	0,0	4	100,0	4	
Knowledge HPV responsible for other cancers						
Yes	31	62,0	19	38,0	50	0,002
No	14	31,1	31	68,9	45	
Knowledge of the 2 most incriminated HPV						
Yes	27	60,0	18	40,0	45	0,019
No	18	36,0	32	64,0	50	

Table 7: Distribution of HPV vaccine acceptance according to knowledge of HPV.

Knowledge about the HPV vaccine	Acceptability of HPV vaccine					
	Yes		No		Total	P Value
	N	%	N	%		
Medical sources						
Yes	41	54,7	34	45,3	75	0,005
No	4	20,0	16	80,0	20	
Typical vaccine knowledge						
Yes	16	50,0	16	50,0	32	0,714
No	29	46,0	34	54,0	63	
Knowledge side effects						
Yes	7	58,3	5	41,7	12	0,415
No	38	45,8	45	54,2	83	
Knowledge of administration mode						
Yes	23	56,1	18	43,9	41	0,137
No	22	40,7	32	59,3	54	
Knowledge people targeted for the vaccine						
Yes	24	52,2	22	47,8	46	0,363
No	21	42,9	28	57,1	49	
Knowledge in the entourage of people who have benefited from the vaccine						
Yes	7	77,8	2	22,2	9	0,054
No	38	44,2	48	55,8	86	
Sufficient information on the vaccine						
Yes	13	92,9	1	7,1	14	0,000
No	32	39,5	49	60,5	81	

Table 8: Distribution of vaccine acceptance according to knowledge of the vaccine.

In our work, the acceptability of vaccination against human papillomavirus varied according to residence and knowledge of the virus and vaccine. Officers who lived in

the suburbs of Dakar or who had more knowledge about the virus and the vaccine were more likely to accept the vaccine (Table 9).

Factors associated with the acceptability of the HPV vaccine	Acceptability of HPV vaccine			
	N	%	P Value	Ods [Ic at 95%]
Socio-demographic characteristics				
Suburban residence zone				
Yes	25	39,1	0,019	1
No	20	64,5		2,8[1,2-6,9]
Knowledge about HPV				
Medical sources				
Yes	35	58,3	0,004	3,5[1,4-8,6]
No	10	28,6		1
Knowledge HPV is an STI				
Yes	42	51,8	0,035	3,9[1,1-15,2]
No	3	21,4		1

Knowledge of people who may be infected with HPV				
Yes	26	60,5	0,020	2,6[1,2-6,1]
No	19	36,5		1
Knowledge HPV responsible condyloma				
Yes	24	60,0	0,035	2,4[1,1-5,6]
No	21	38,2		1
Knowledge HPV responsible for other cancers				
Yes	31	62,0	0,002	3,6[1,5-8,5]
No	14	31,1		1
Knowledge of the 2 most incriminated HPV				
Yes	27	60,0	0,019	2,7[1,2-6,1]
No	18	36,0		1
Knowledge about HPV vaccine				
Medical sources				
Yes	41	54,7	0,005	4,8[1,5-15,8]
No	4	20,0		1
Sufficient information on the vaccine				
Yes	13	92,9	0,000	19,9[2,5-100]
No	32	39,5		1

Table 9: Summary table of factors associated with HPV vaccine acceptability.

Discussion

Limitations

Several socio-professional categories were concerned by our study and had different levels of education, which constituted a limitation.

Socio-Demographic Characteristics

In our study, the average age of health workers was 30.9 years with extremes of 21 to 57 years. Our results were lower than those found by **Mounir** in France 53 years old with extremes from 29 to 65 years old and by **Yves** in France 44 years old with extremes from 29 to 69 years old [3,4]. This can be explained by the fact that these studies were done in doctors only; so ours was done in health workers that could include doctors and paramedics who sometimes have relatively lower ages than doctors. They were mostly doctors (65.3%), single (53.7%) and residing in the Dakar suburbs (67.4%).

Knowledge of Human Papillomaviruses and Vaccination against Human Papillomavirus

During our study, 92.6% of the agents knew about HPV. Of these, 85.3% considered HPV infection to be an STI, 95.8%

considered it to be responsible for cervical cancer and 52.6% considered that HPV infection can lead to other cancers.

These rates are much lower compared to those in **Tutala's** study where 100% of the doctors knew about HPV, knew that HPV infection is an STI, is responsible for cervical cancer and 91.7% of the doctors knew that HPV can give other cancers. This may be explained by the fact that our study was conducted among health care workers that may include doctors and paramedics [5]. The main source of information was medical studies 92.6%.

It was noted that the level of knowledge about the Human Papillomavirus as being responsible for cervical cancer was very high; this can be explained by the fact that the virus is defined through its consequences and impact on health.

As for vaccination, 93.7% knew about the HPV vaccine. Our results are much lower than those of **Tutala**, where 100% of the doctors had heard of the HPV vaccine. Overall, this profile seems inconsistent, as it is assumed that agents who had heard of the vaccine had also heard of the related virus. The information must be simultaneous. Health workers (73%) were the main sources of information [5]. This underscores the centrality of health workers in providing information and the importance of their role in cervical cancer prevention.

Acceptability of Vaccination

The acceptability of taking the HPV vaccine was noted in only 47.4% of agents less than half of our cohort; the main reason for acceptability was prevention of cervical cancer and concern about the virus and its health consequences. Our results are much lower than those found by **Le du** 85%, those found in the literature 81.1%, those of the REMPARG programme (Research-Evaluation of means of HPV prevention in Rhône-Alpes), whose results published by the INPES in 2011 show a favourable opinion of 83% among private practitioners, and those of the **Piana** study (carried out in the PACA region in 2009) which shows that 89% of GPs are favourable to HPV vaccination [6-8]. The **Devaux** study showed that in the Somme, 98% of GPs were in favour of this vaccine [9].

The main factor in the non-acceptability of the vaccine was the lack of sufficient information about the vaccine 73%. These results show that some health workers do not have enough information about human papillomavirus and the cervical cancer vaccine. So, would it be wise to hope for maximum vaccine coverage if our health workers do not have enough information about the HPV vaccine?

In our study, factors associated with vaccine acceptability included: residence, knowledge of HPV, and knowledge of the vaccine. For example, agents living in the suburbs of Dakar and those with more knowledge about HPV and the vaccine were more likely to accept the cervical cancer vaccine. On the other hand, the second barrier to HPV vaccination was related to the vaccine itself, the fear of adverse effects, and this is consistent with the literature.

Fear of side effects tops the list of most acceptability surveys. In an American study published in 2013, this concern has even increased: in 2008, 4.5% of parents were worried about possible side effects, compared to 16.4% in 2010 [10].

Yet HPV vaccines are rigorously monitored and so far no serious manifestations directly attributable to the vaccine have been found. Why, then, is there growing concern despite the finding of minor side effects and strict safety requirements? «Defiance of vaccines is as old as vaccination,» says **Zylberman**, a professor of health history [11]. It is understandable that the deliberate introduction of an infectious agent into the body of a healthy person to protect them is a cause for concern. Nevertheless, in the light of numerous controversies, this concern has taken on unequalled proportions, particularly in France. However, these concerns should not arise from health workers, as they are the cornerstone for raising awareness among the population in order to hope for good vaccination coverage.

However, our study revealed a lack of adherence to the Human Papillomavirus vaccine by health workers due to a lack of sufficient information on this vaccine.

Conclusion

Cervical cancer, the second most common cancer in women worldwide and the leading cancer in developing countries, is a real public health problem. In combination with screening, HPV vaccination is a very effective weapon for its eradication. However, in a climate of suspicion and global mistrust, it raises many questions.

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