

"HPV VACCINE PRESCRIPTION IN KOCHI: A KAP STUDY OF MEDICAL PRACTITIONERS"

Dissertation Report - 2025

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Every year, more than 300 000 women die from cervical cancer



80%

of cervical cancer deaths
occur in low- and middle-
income countries.

Poor access to prevention,
screening and treatment
contributes to 90% of deaths.

Cervical cancer
is preventable and treatable,
if caught early!



Get Informed. Get Screened. Get Vaccinated.

HPV and Cervical Cancer “A Preventable Crisis”

- HPV infection is the **most common sexually transmitted infection** globally
- Responsible for **99.7% of cervical cancer** cases and other anogenital cancers
- India accounts for nearly 1/4 of the global cervical cancer burden with approximately **120,000 new cases annually**
- **HPV vaccination could prevent up to 90% of these cases**, yet vaccination rates remain low in India
- Physicians are the key influencers in vaccine uptake decisions

What's Hinder the vaccine Prescription?

- HPV vaccines exist, yet prescription rates remain low in both public & private sectors
- Doctors are gatekeepers, but their knowledge, attitude, and practice (KAP) often go unassessed
- **India's vaccine coverage is suboptimal—despite availability since 2006**
- Kerala has high health literacy, but physician prescribing behavior remains understudied
- Kochi offers a unique lens with:
 1. High healthcare access
 2. Aware urban population
 3. Mix of public & private providers

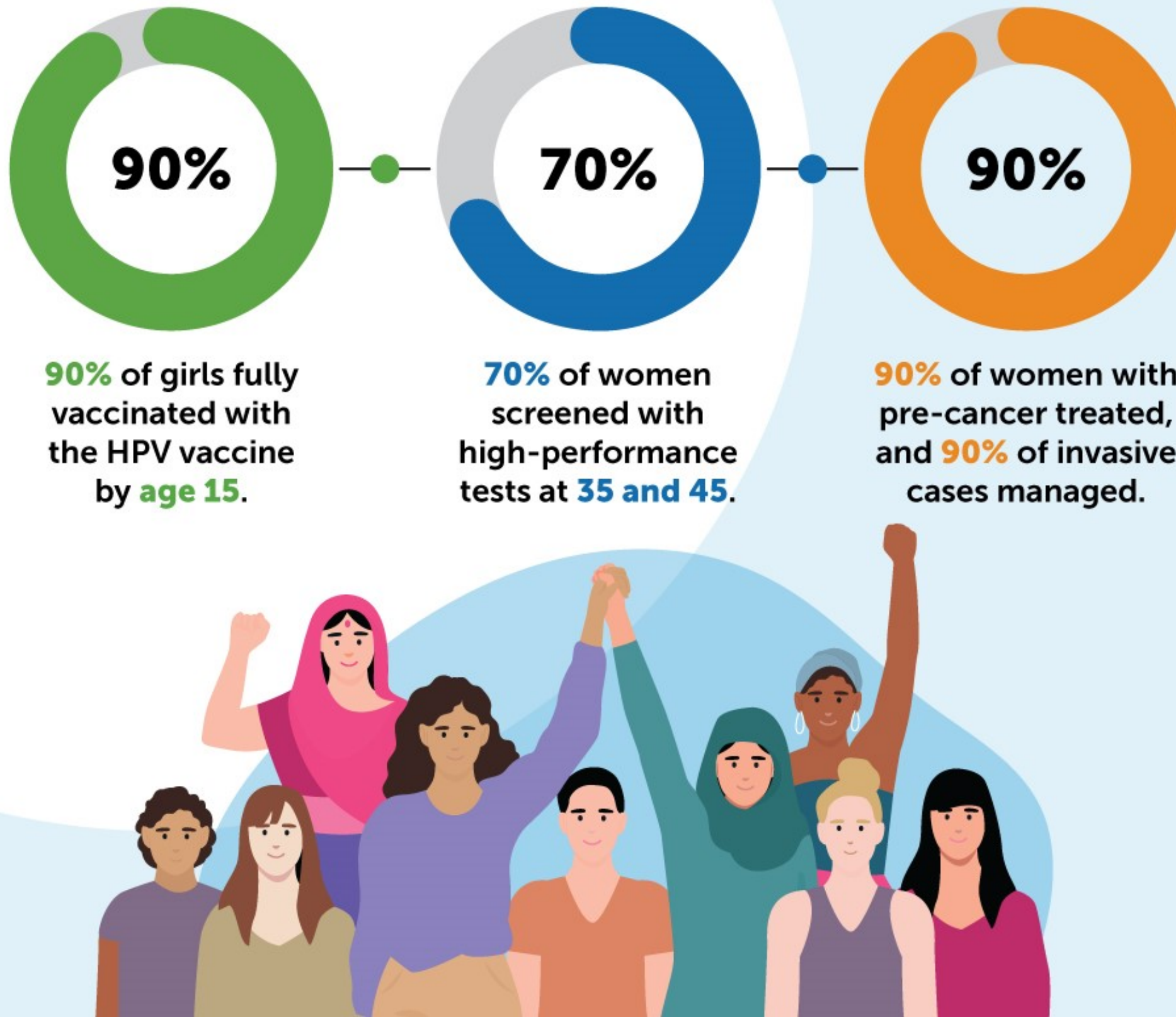
"Doctors' recommendations are one of the most influential factors in vaccine uptake."

– WHO



Aligning with the WHO's 90-70-90 Mission

WHO's 90-70-90 Targets to Eliminate Cervical Cancer by 2030



- HPV vaccination is the first pillar of the WHO's global cervical cancer elimination strategy
- India is making progress—but vaccination rates remain well below the 90% target
- Doctors are the critical link between vaccine availability and actual uptake
- Understanding provider behavior is key to bridging global goals and ground realities
- **This study explores how to activate doctors' role in achieving the first '90'**

Research Objectives

-  **01** Assess doctors' knowledge of HPV infection, available vaccines, and national immunization policies.
-  **02** Evaluate attitudes toward recommending the HPV vaccine, including beliefs about safety, effectiveness, and public acceptability.
-  **03** Examine current prescription practices and frequency of vaccine recommendation during consultations.
-  **04** Identify perceived barriers—social, cultural, economic, and practical—that influence prescribing behavior.
-  **05** Develop evidence-based strategies to improve HPV vaccine uptake through physician engagement and system-level support.



Review of Literature

Study	Location & Year	Population / Focus	Key Findings	Relevance
Honcoop (2010)	New Delhi	Doctors	Barriers: stigma, cost, low demand	Need for provider education & policy push
Chawla et al. (2016)	Delhi-NCR	590 healthcare workers	81% aware, 47% prescribed; large knowledge-practice gap	Importance of CME and frontline training
Misra et al. (2020)	North India	368 OPD women	85% had positive attitude, only 6.2% vaccinated	Community-level education and subsidy required
Goruntla et al. (2020)	Andhra Pradesh	296 physicians	Only 33.4% prescribed; cost and policy cited as barriers	Highlights role of supply chain and policy integration
Mandal et al. (2024)	AIIMS Kalyani	250 nurses & junior doctors	Good knowledge/attitude, but low practice (9.3%)	Institutional inertia and lack of demand are key
Chatterjee et al. (2024)	India	Cervavac policy review	Highlights rollout gaps despite WHO backing	Need for system-level readiness
Mathew et al. (2022)	Kerala	186 PCPs	92% aware, but only 38% prescribed	Kerala-specific dynamics (health literacy, decentralization)

Methodology

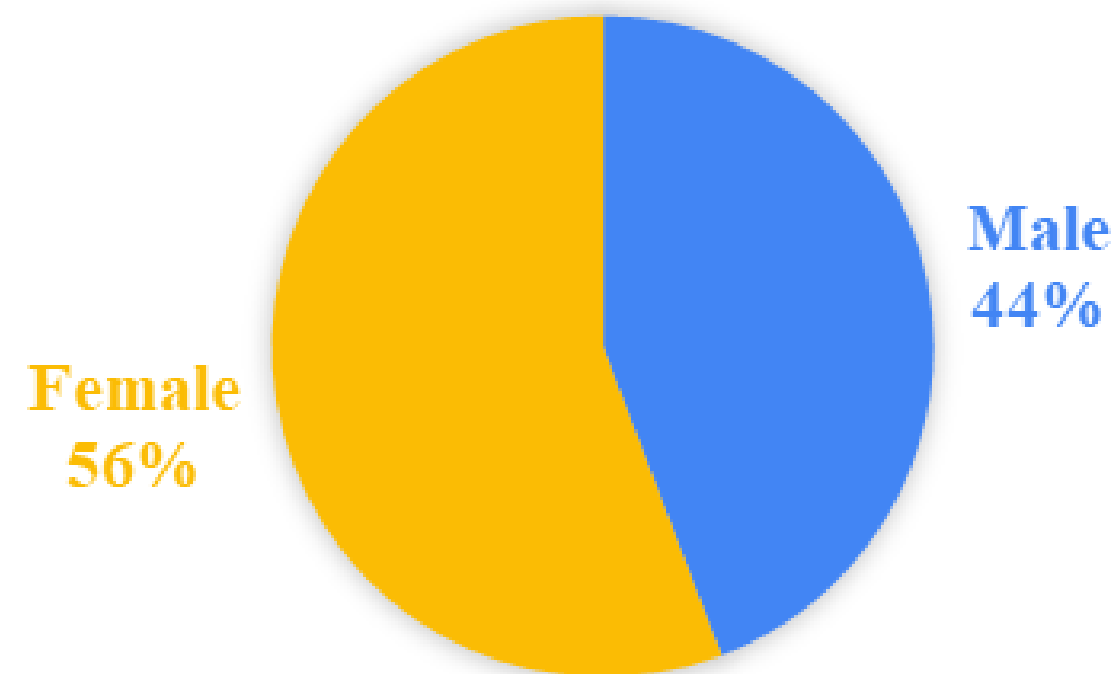
- **Study Design:** Cross-sectional, mixed-method KAP study (April–May 2025)
- **Participants:** 120 doctors (gynecologists, pediatricians, general practitioners) in Kochi
- **Instrument:** 24-item validated questionnaire assessing knowledge, attitude, and practice
- **Sampling:** Convenience sampling
Target: 267 (Cochran's formula) | Achieved: 120 (time/feasibility constraints)
- **Data Collection:**
Google Forms via WhatsApp groups
QR-code forms during clinic visits
One-on-one physician interactions
- **Analysis:** SPSS Version 20 (descriptive statistics, chi-square)

Who Were the Respondents?

Demographic Profile of Respondents

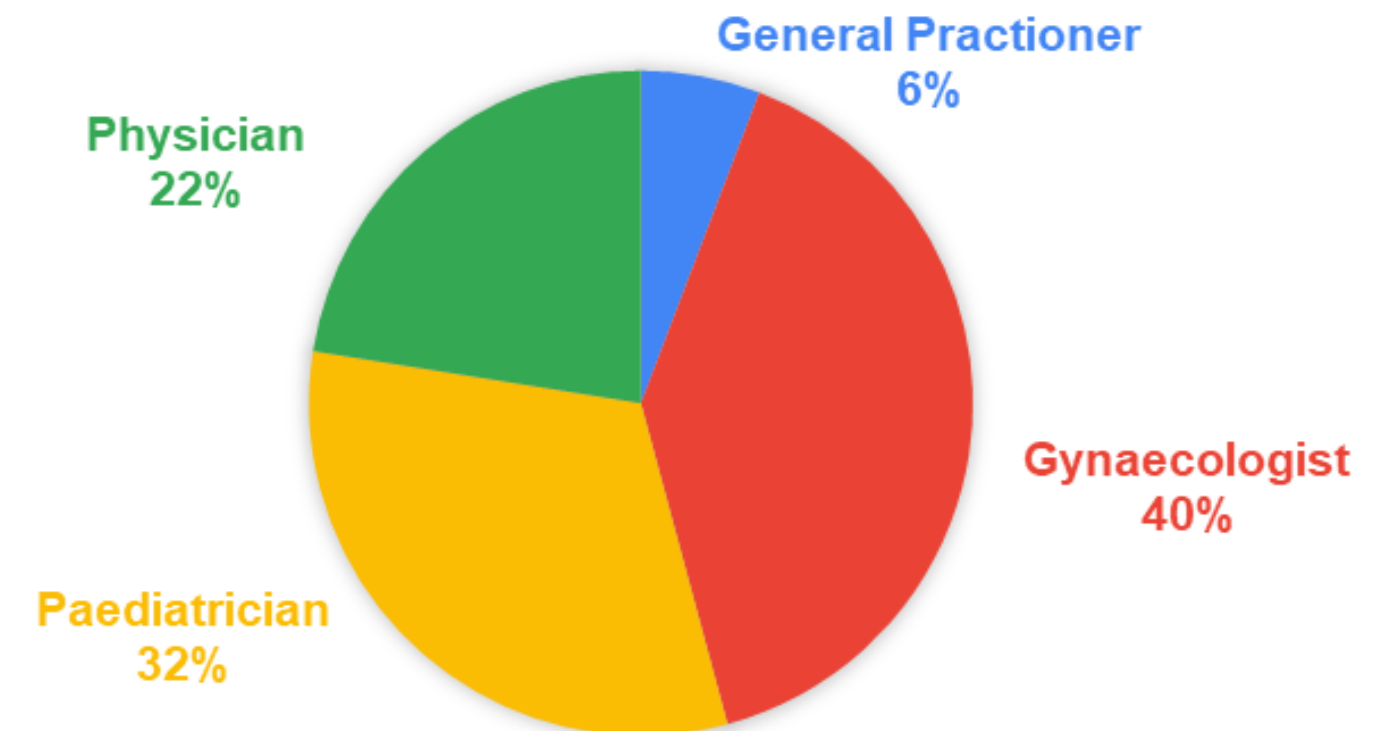
Total respondents: 120 doctors

Gender



- 55.8% - Females
- 44.2% - Males

Specialities

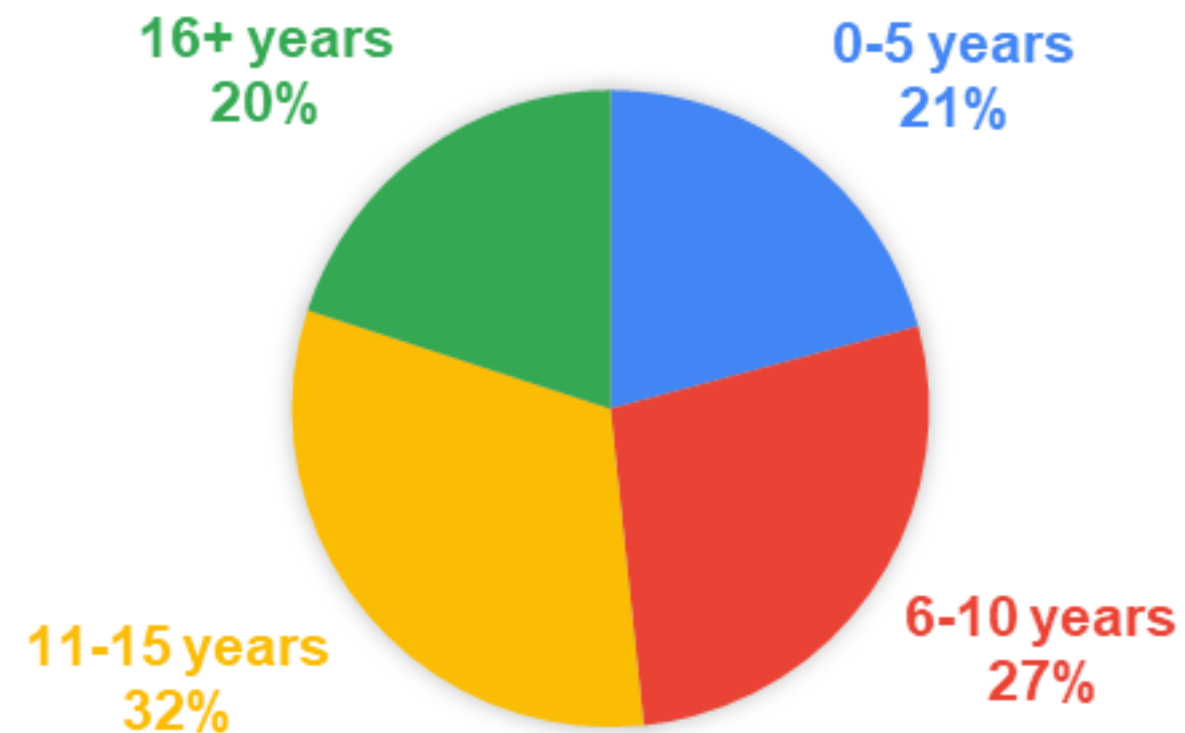


- Gynaecologists – 40%
- Paediatricians – 31.7%
- Physicians – 22.5%
- General Practitioners – 5.8%

Who Were the Respondents?

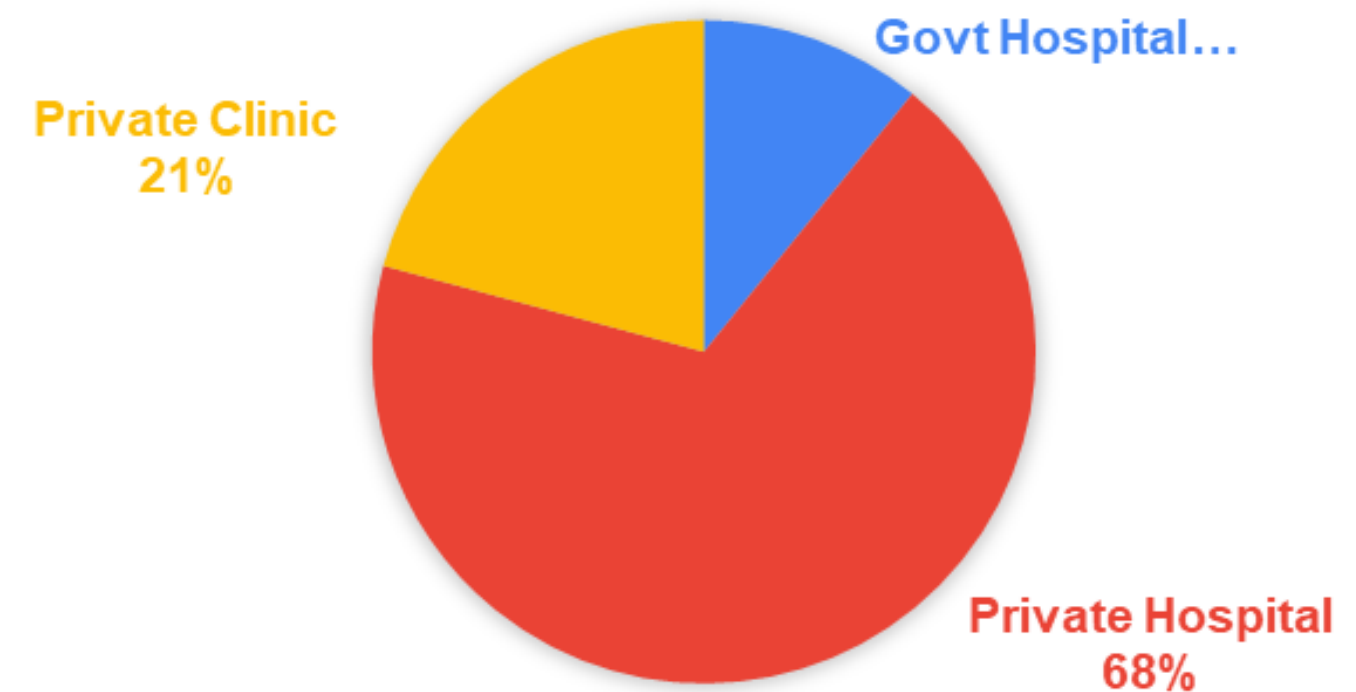
Demographic Profile of Respondents

Years of Practice



- 0-5 years- 20.8%
- 6-10 years – 27.5%
- 11-15 years- 31.7%
- 16+ years- 22%

Type of Healthcare Setting



- Private hospitals – 68.3%
- Private clinics – 20.8%
- Government hospitals – 10.8%

What Do The Doctors Know?

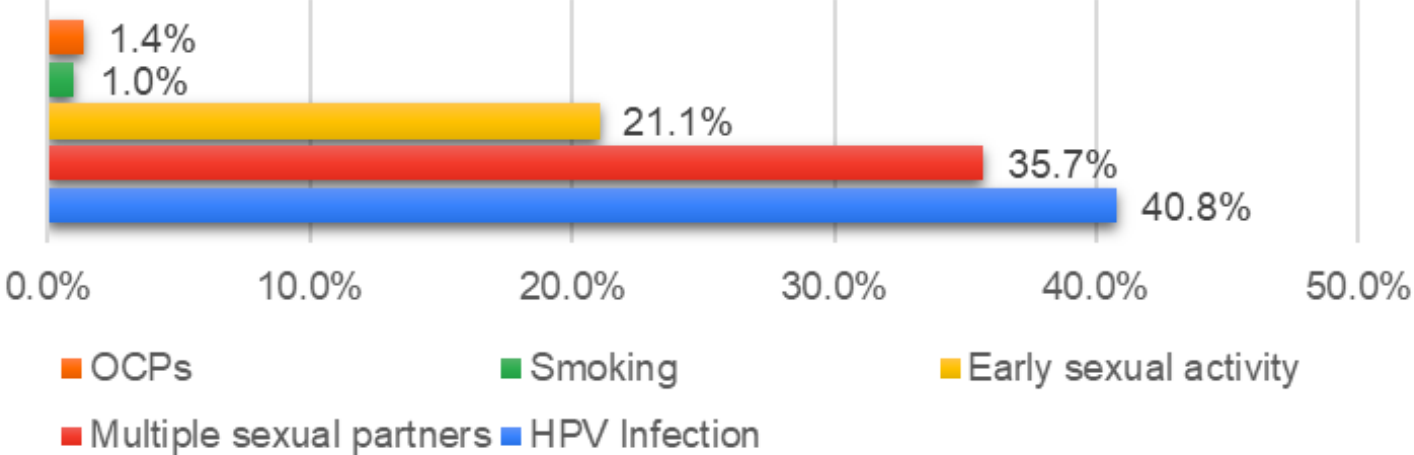
Knowledge of HPV & Vaccination

- 99.2% knew HPV causes cervical cancer
- 98.3% recognized HPV as an STD
- 83.3% correctly identified 9–14 years as the recommended age
- But only 69% had heard of Cervavac
- Most doctors also knew HPV is asymptomatic and can affect both genders
- Knowledge was high overall, but awareness of national immunization status and lesser-known cancers was lower
- Clinical knowledge is high, but policy/program awareness is patchy.

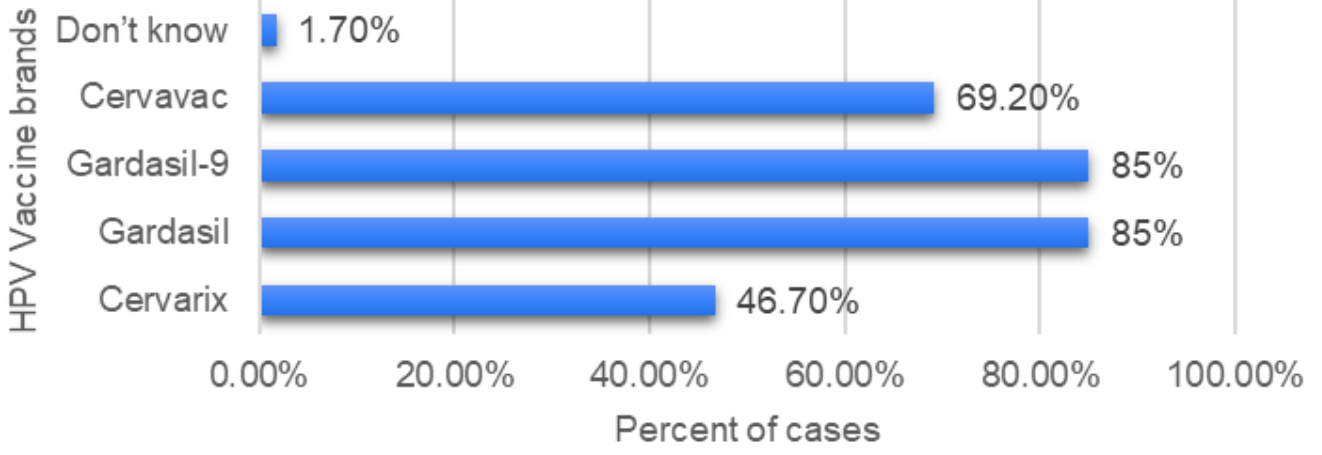
“Doctors in Kochi are not lacking in knowledge—but is knowing enough?”



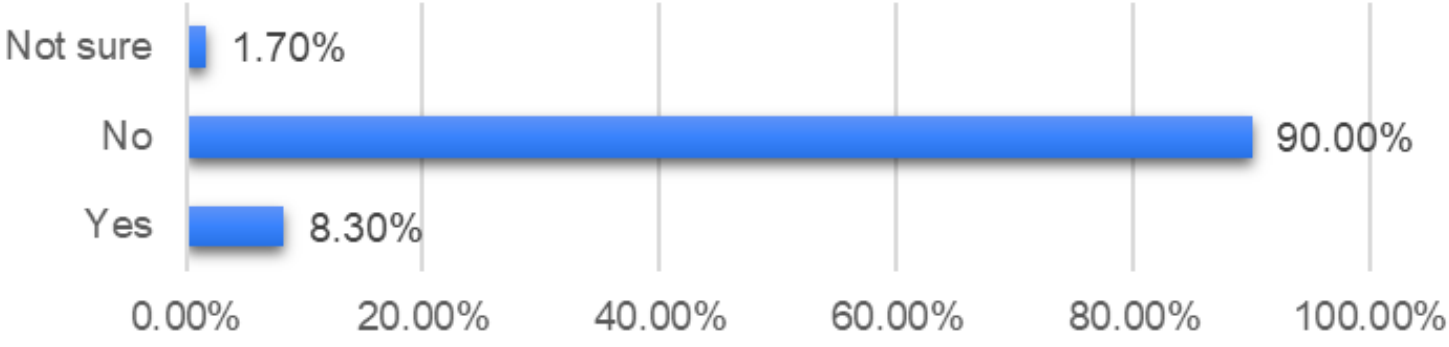
Knowledge of HPV & Vaccination



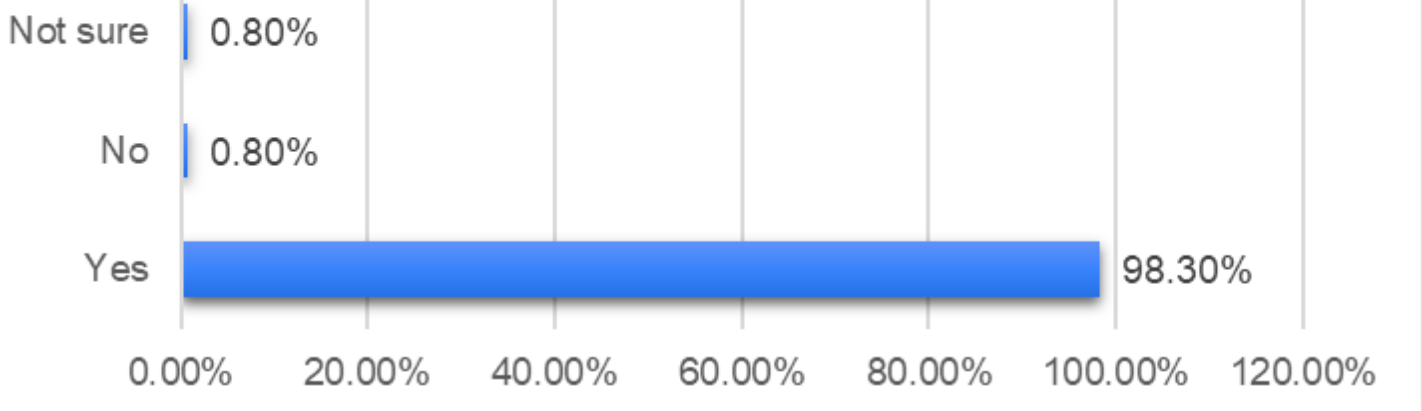
Awareness of Major Risk Factors for Cervical Cancer



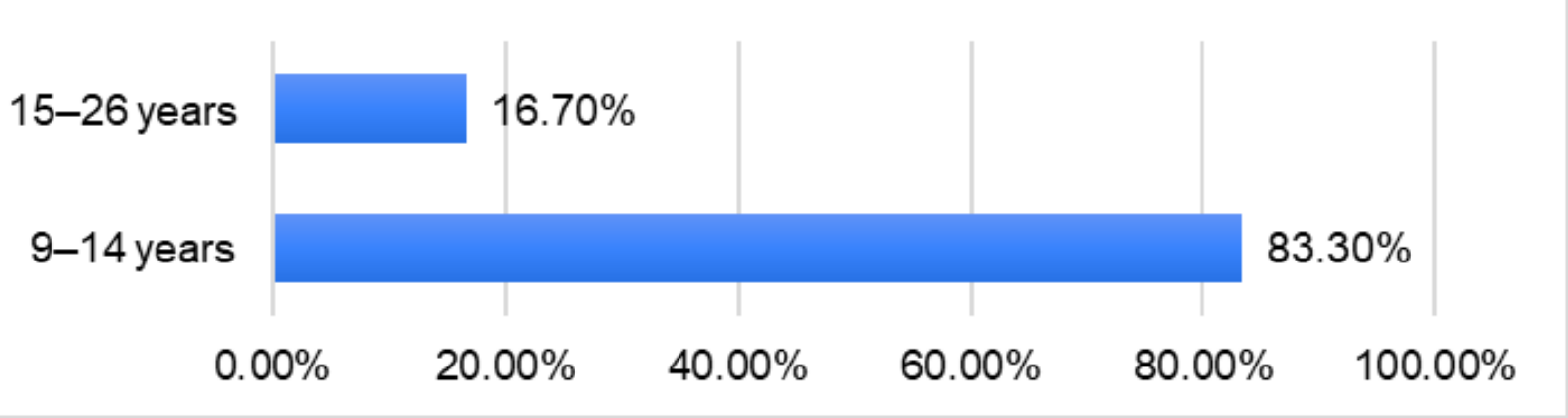
Awareness of HPV vaccine brands in India



Awareness of Inclusion of HPV Vaccine in India's NIP

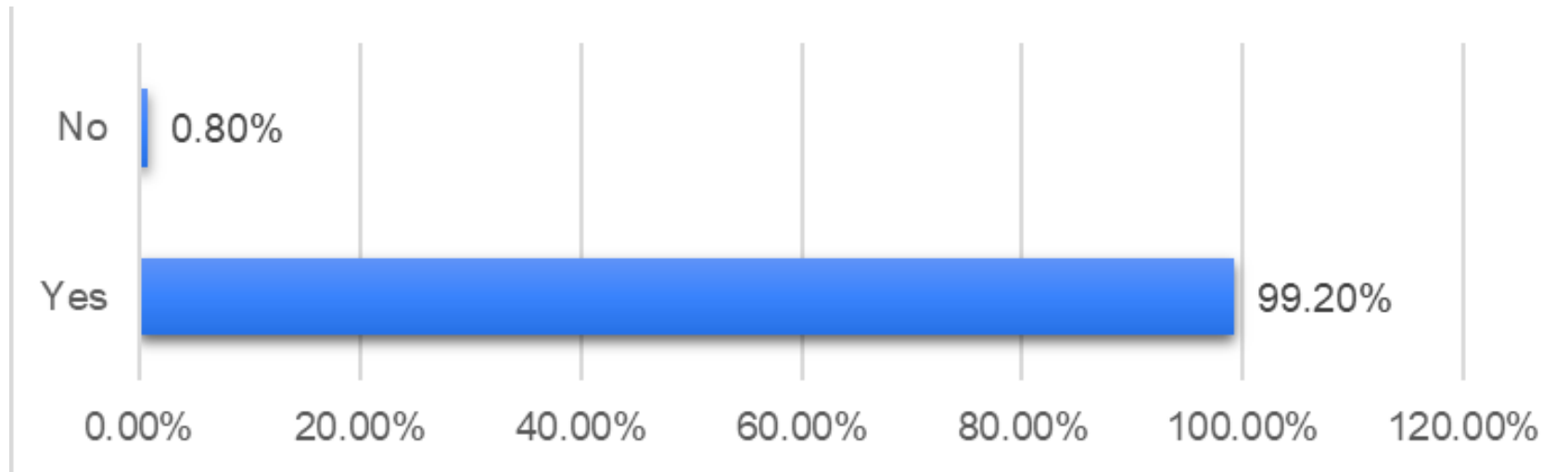


Awareness of HPV as an STD

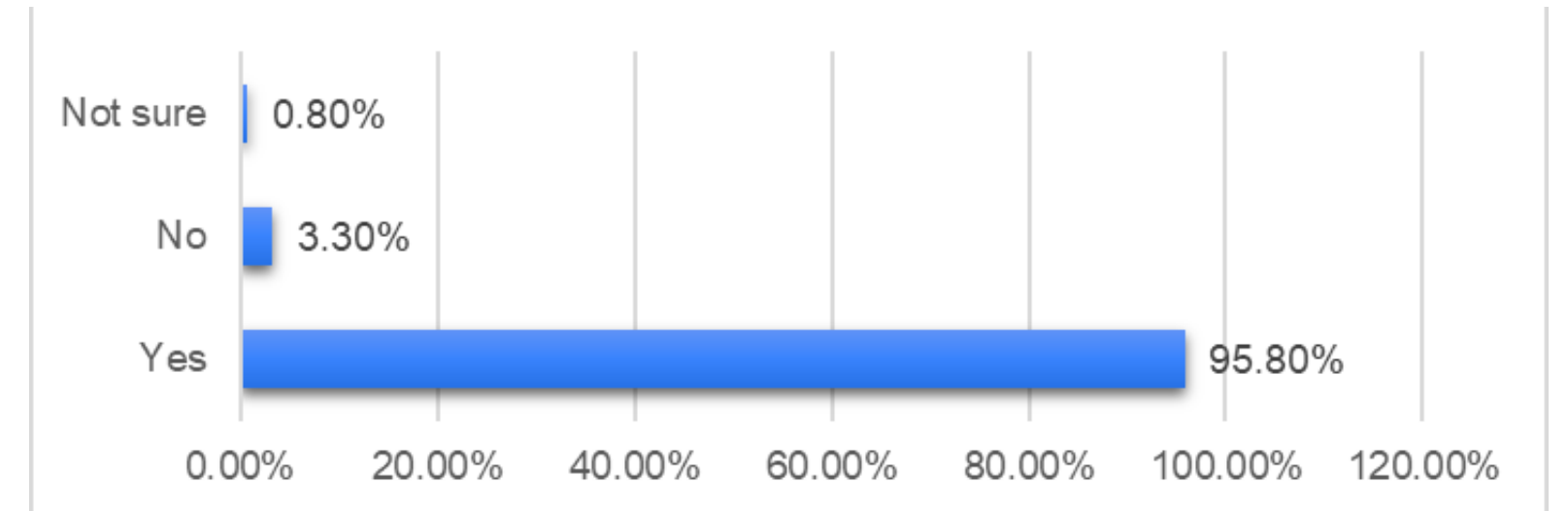


Knowledge of recommended HPV vaccination age

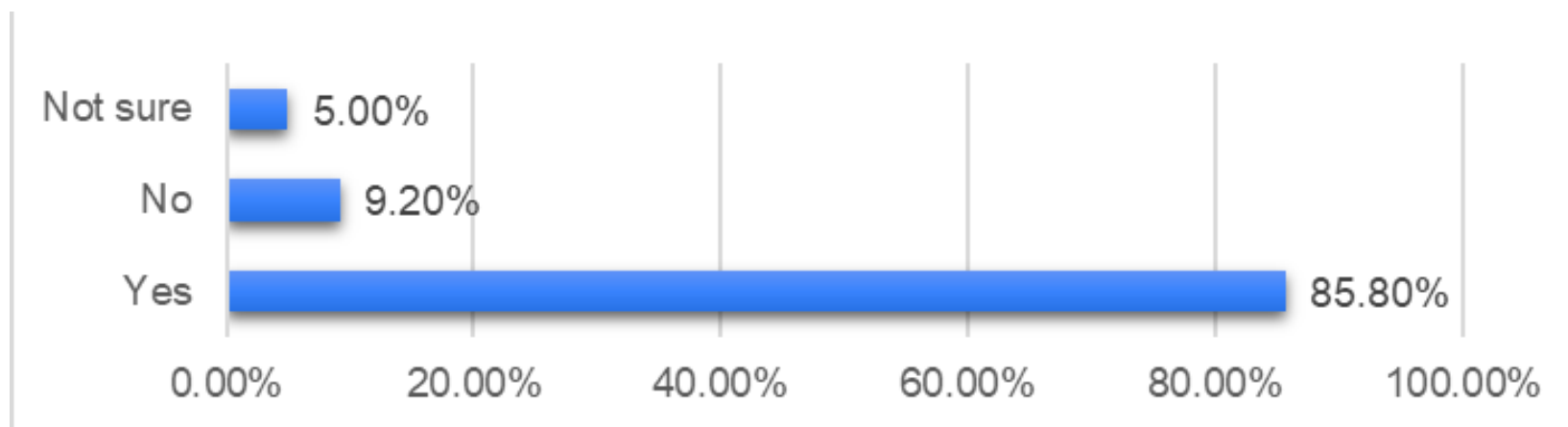
Knowledge of HPV & Vaccination



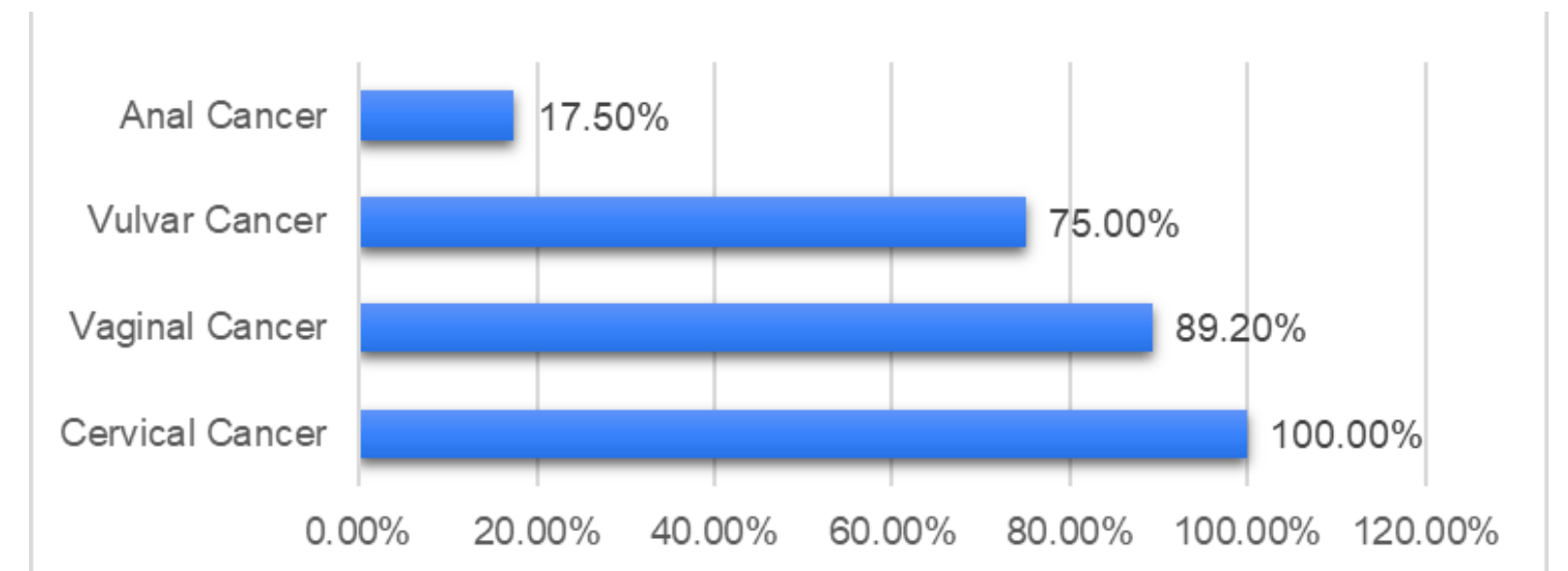
Belief that HPV can cause cervical cancer



Awareness of HPV infection in both sexes



Awareness that HPV Infection is Usually Asymptomatic

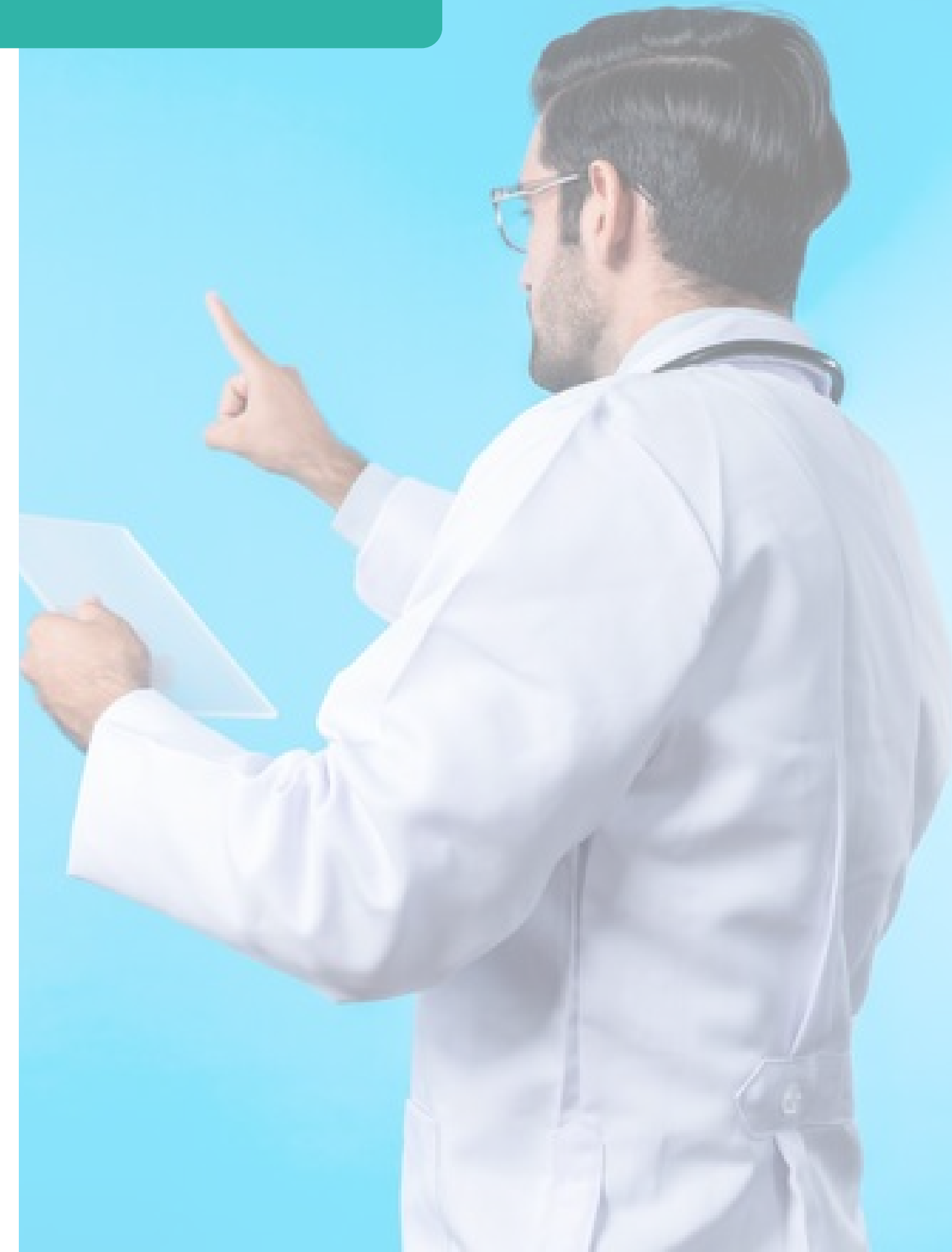


Knowledge of HPV-Related Cancers in Women

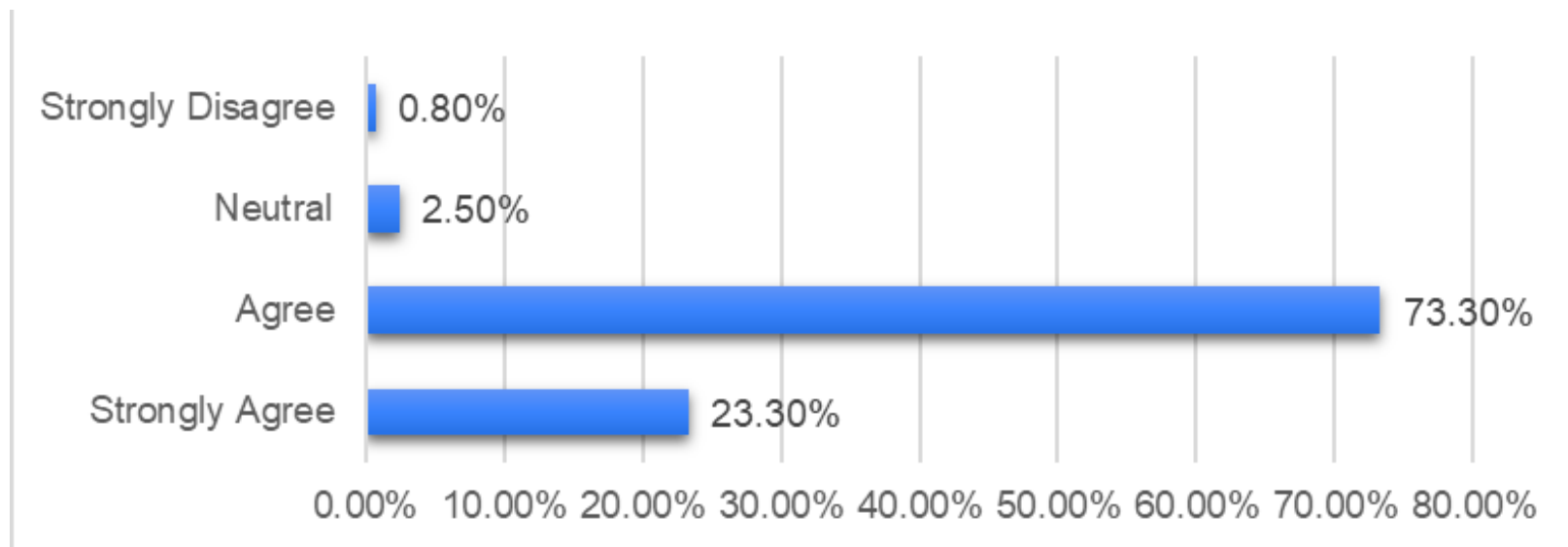
What Do The Doctors Believe?

Attitude Towards HPV Vaccination

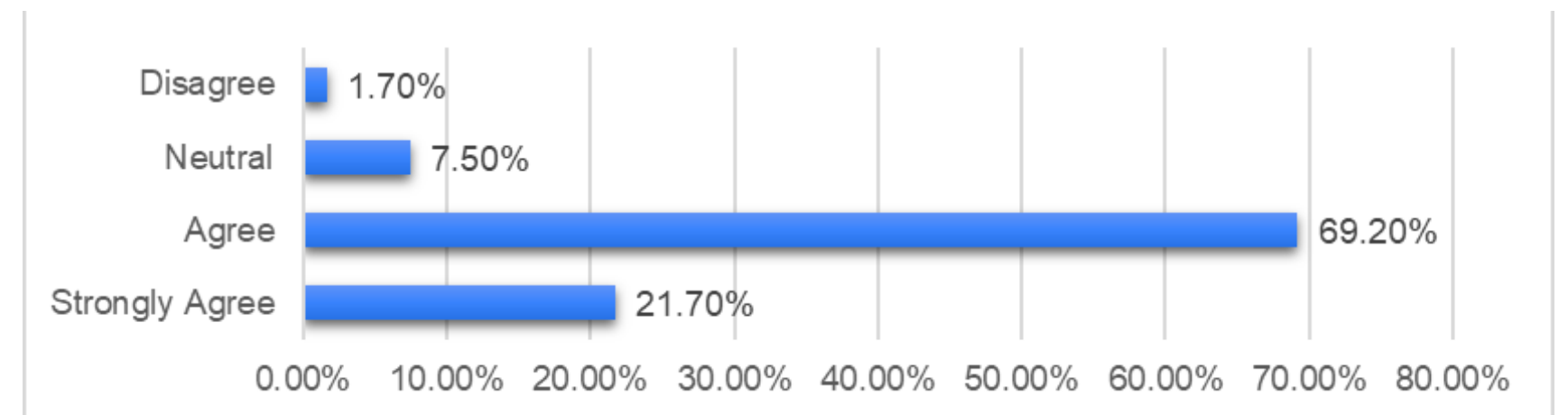
- 96% believed the HPV vaccine is effective.
- 95% said they would support making it mandatory if free.
- Yet, **only 44% felt comfortable recommending it to adolescents.**
- Many cited **parental discomfort, cultural sensitivity, and misconceptions as major barriers.**
- 90.8% saw cost as a major barrier
- 87.5% agreed parental hesitation was driven by cultural/religious beliefs
- Some concern still exists around vaccine efficacy (21.7%) and safety (10.8%)



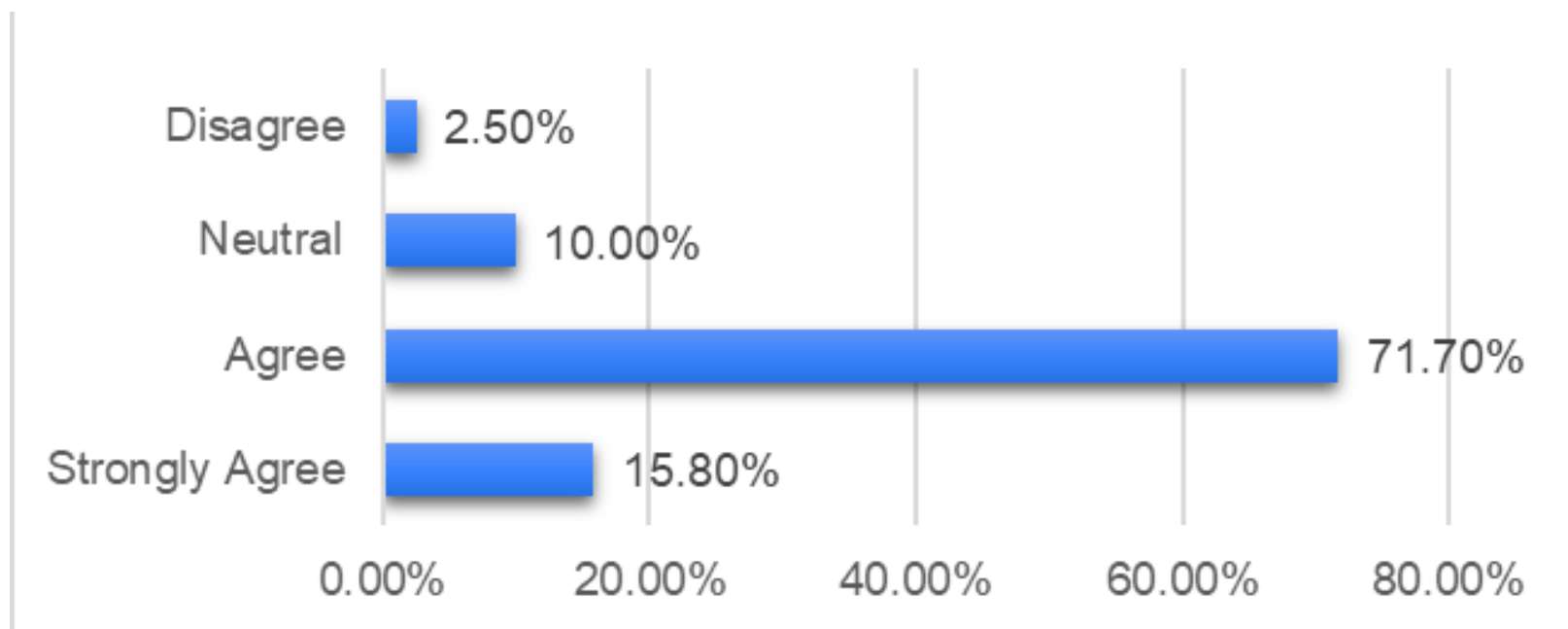
Attitude Towards HPV Vaccination



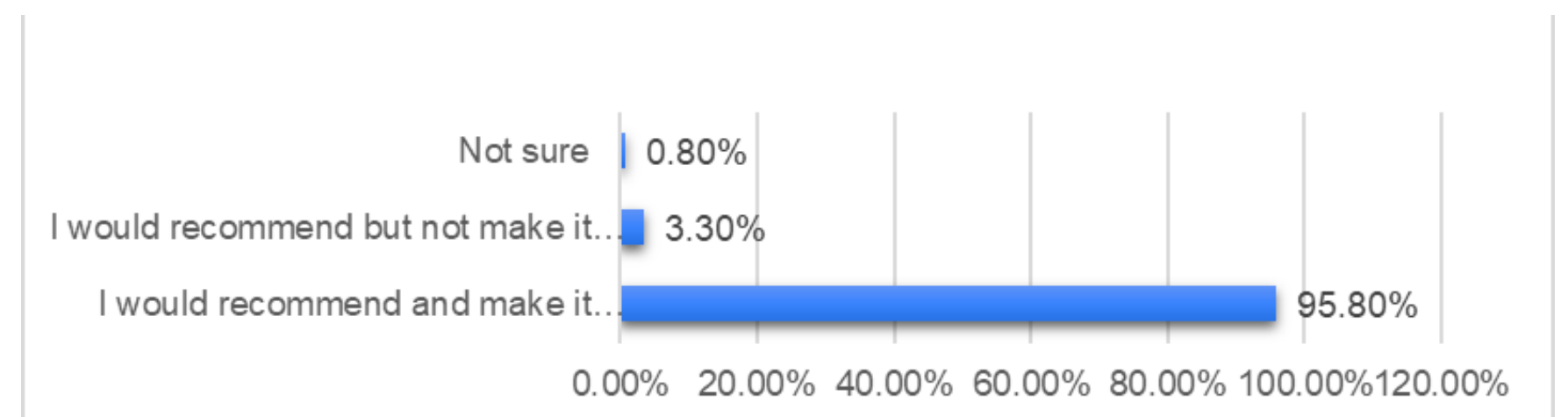
Believe in HPV vaccine effectiveness



Perceptions of cost as a barrier

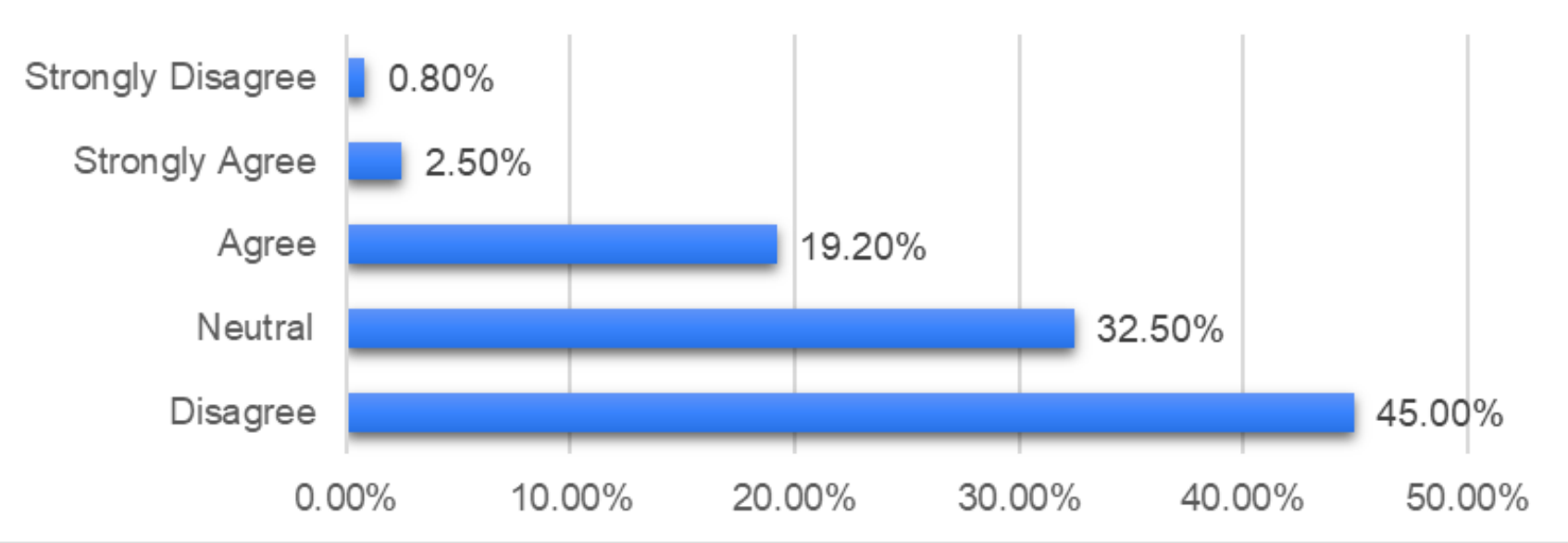


Perception of parental hesitation

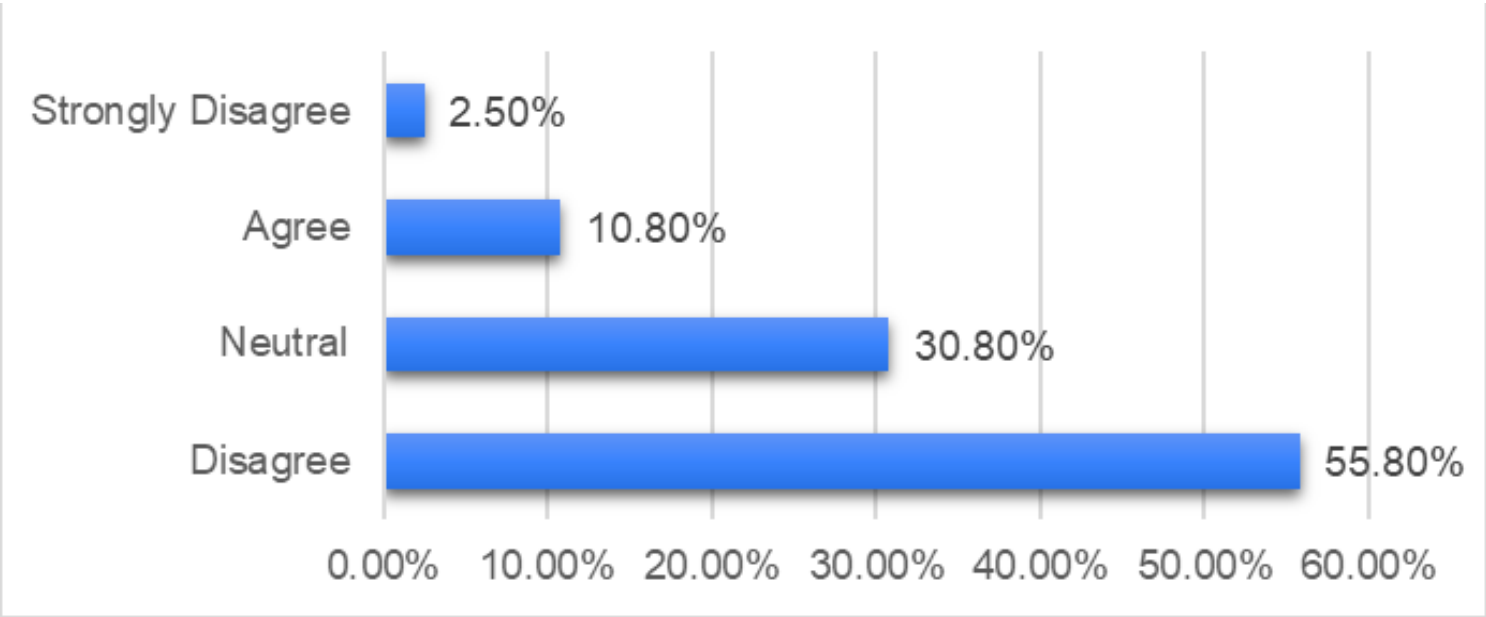


Recommendation and mandatory support for HPV vaccine if freely available

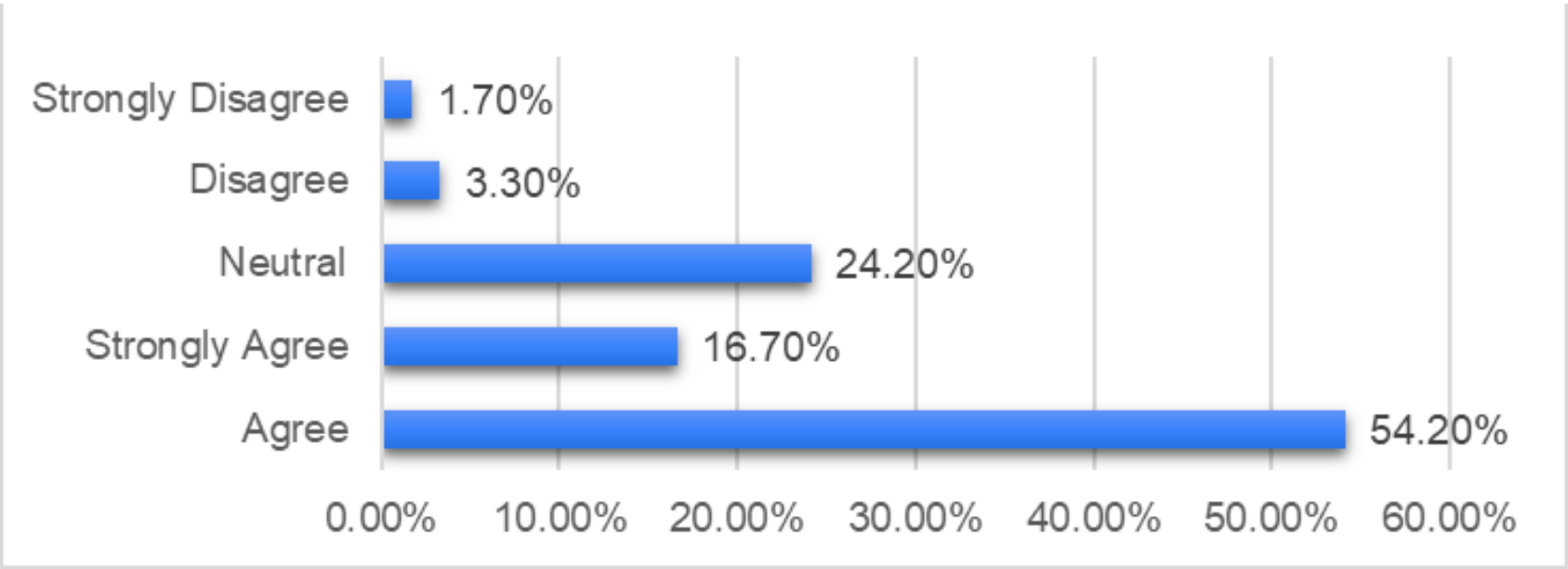
Attitude Towards HPV Vaccination



Doubt on HPV vaccine efficacy as a barrier



Safety concerns as a barrier



HPV's sexually transmitted nature as a barrier

What Do The Doctors Do in Practice?

Practice Behavior

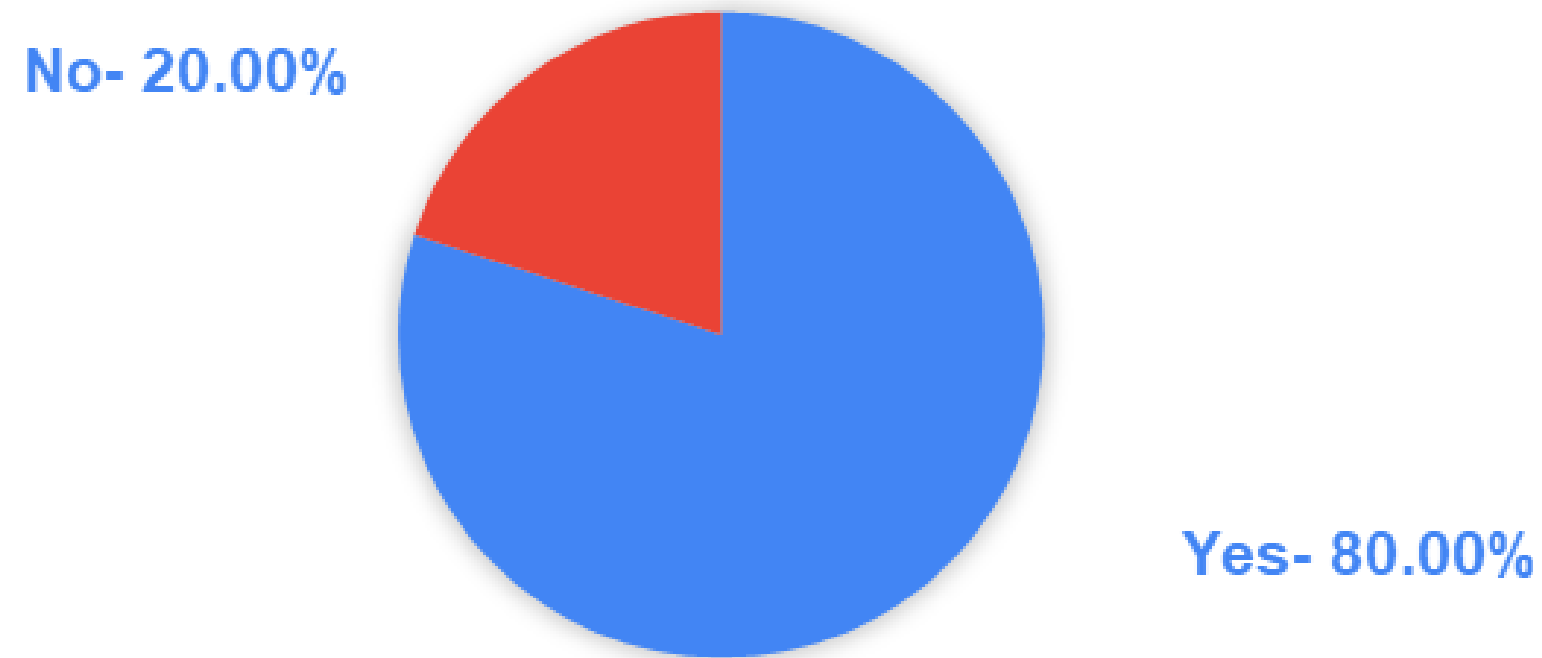
“Practice reveals the real story—and the gap is louder than we think.”

- 80% had prescribed the HPV vaccine at least once,
- But only 55% do so consistently.
- Most wait for parents to ask rather than initiating the conversation.
- Practice was best among gynecologists and pediatricians—but even they faced resistance.

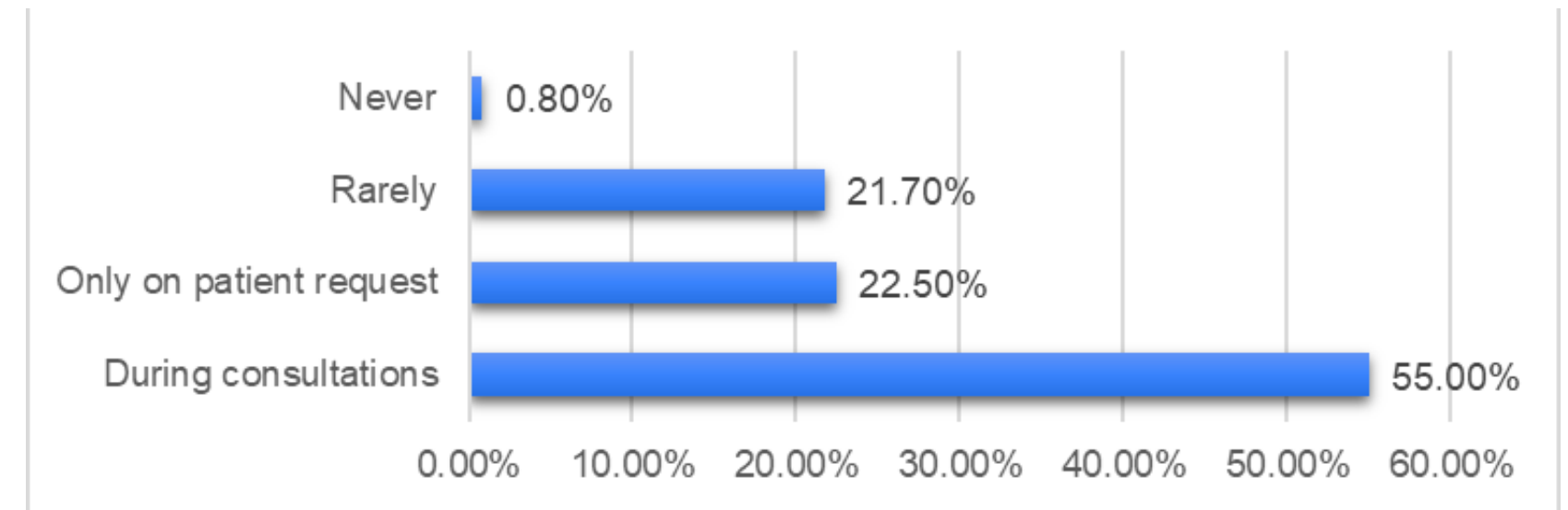
Knowledge (98%) → Attitude (96%) → Practice (55%)



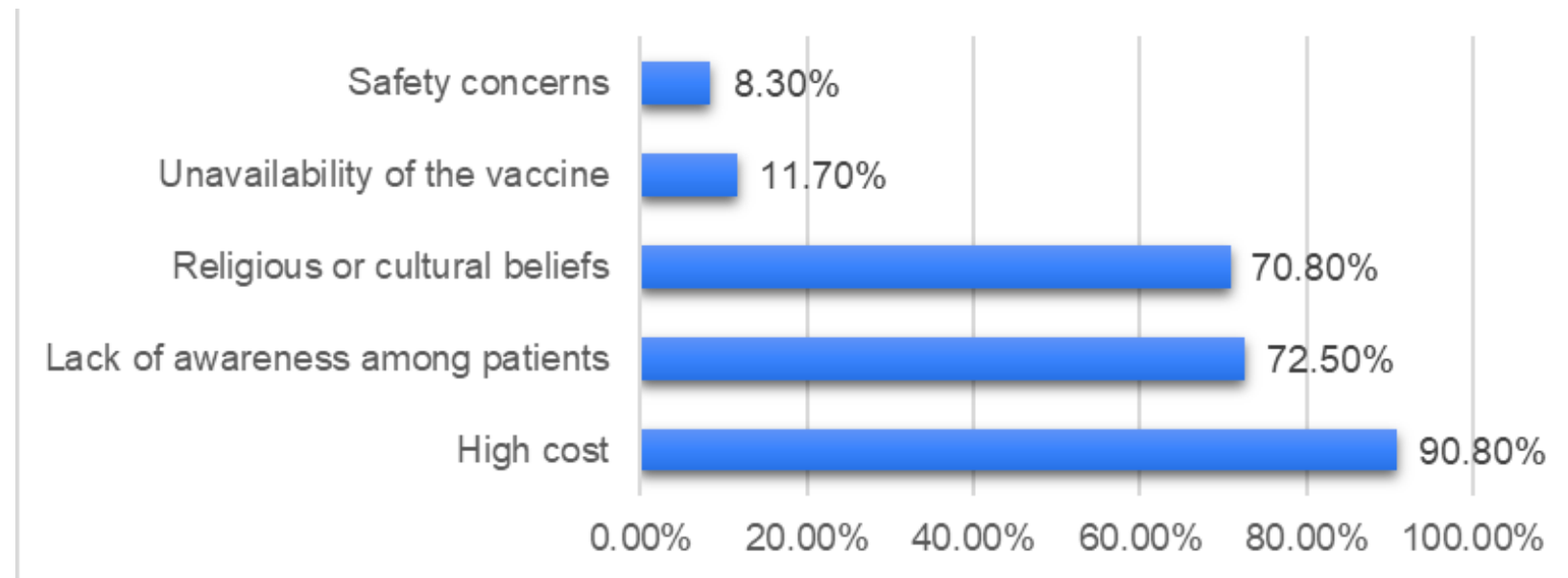
Practice Behavior



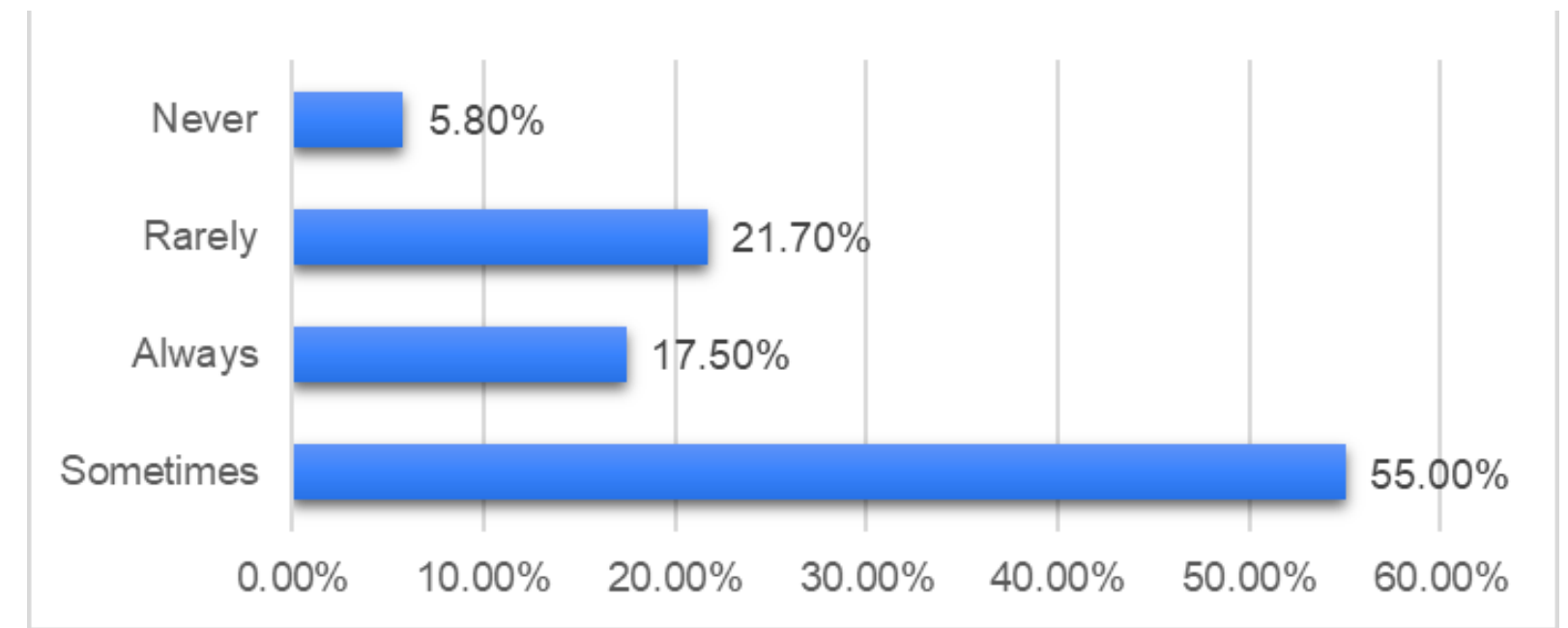
HPV vaccine recommendation by doctors



Frequency of HPV vaccine discussion with patients



Barriers to HPV vaccine recommendation



Frequency of cervical cancer prevention counseling

What Patterns Emerged?

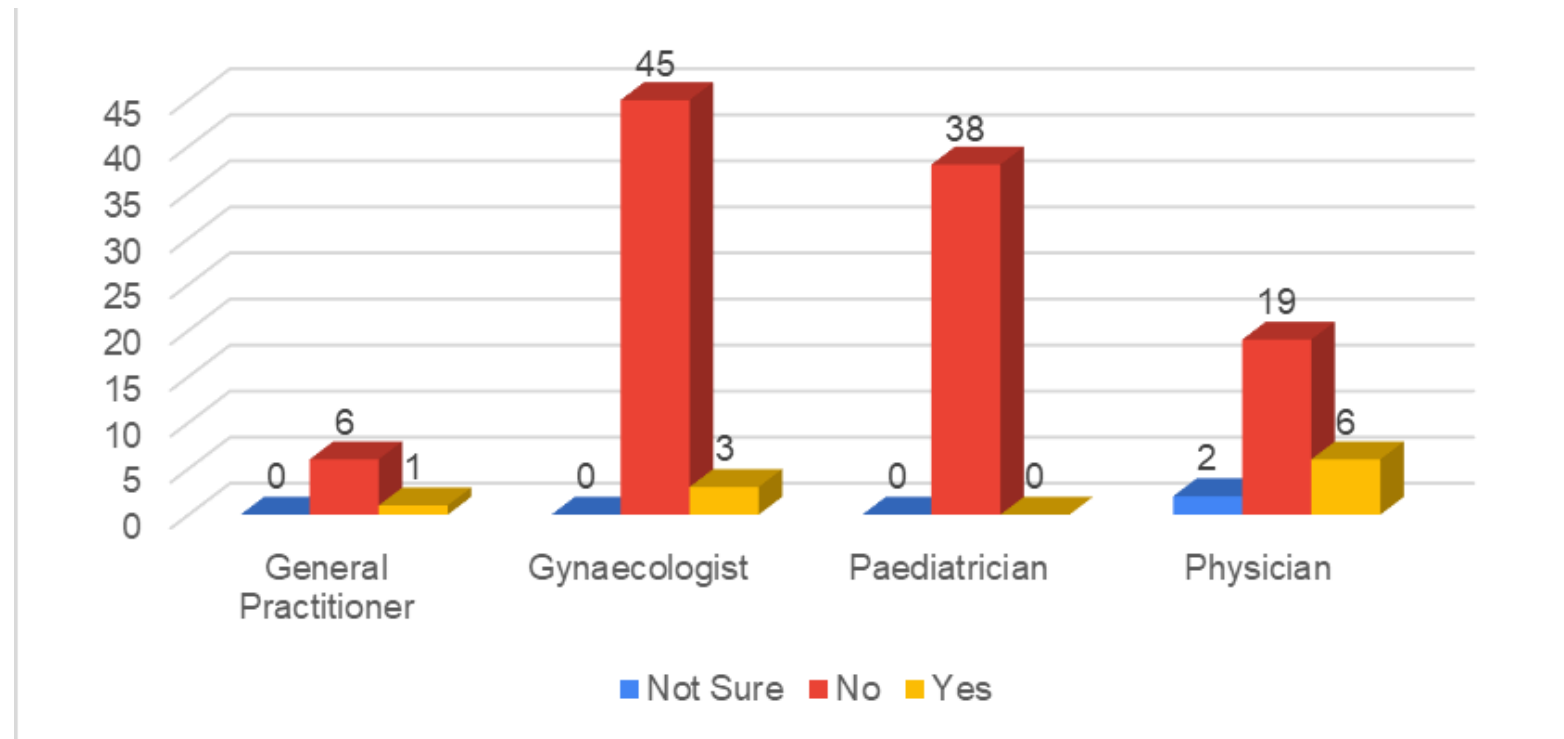
Key Associations & Statistical Insights

“Some doctors are leading the charge—but not all are equally equipped.”

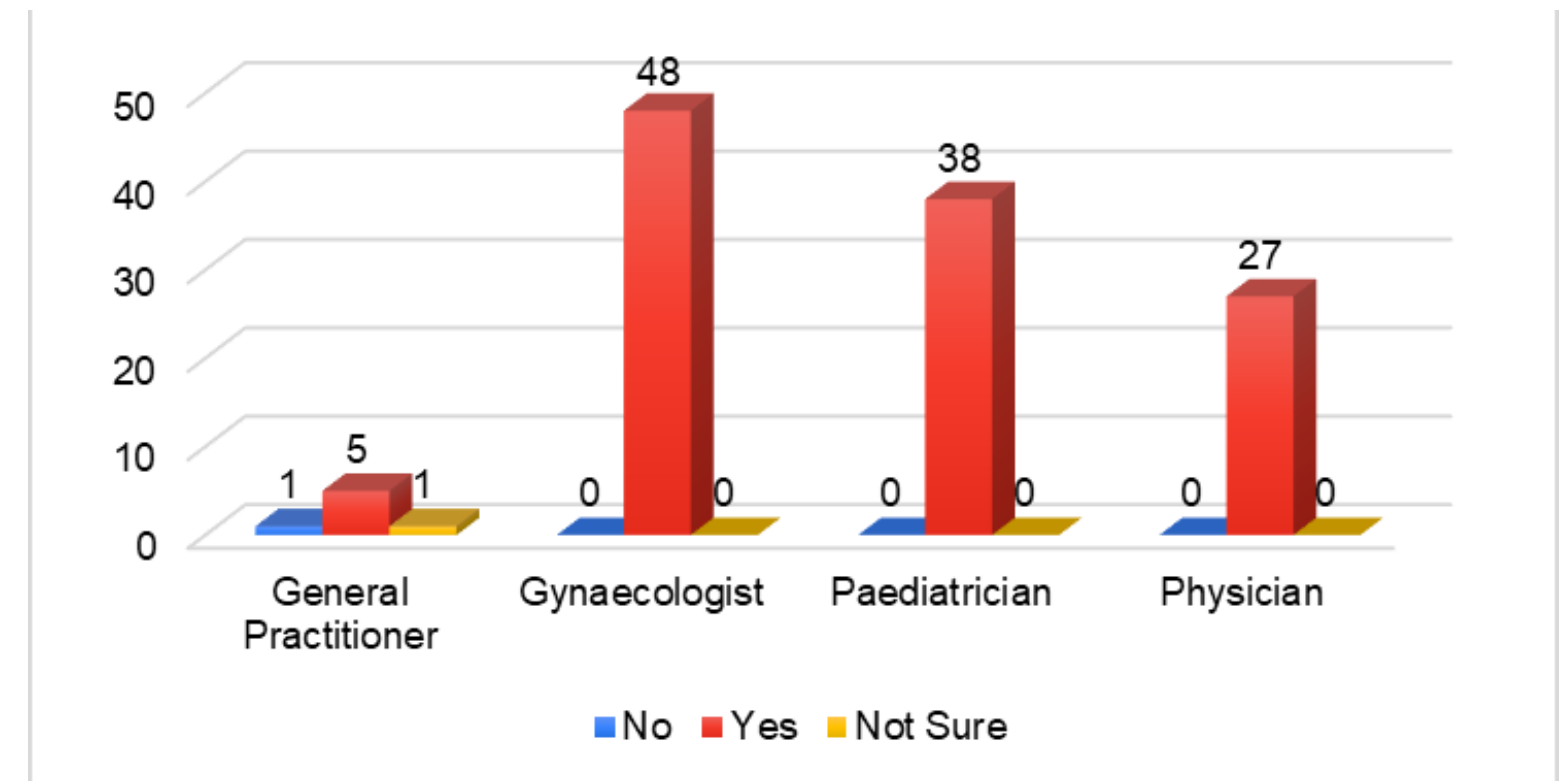
- Significant associations found between medical specialty and:
 1. **Knowledge of HPV as an STD ($p < 0.001$)**
 2. **Awareness of national immunization status ($p = 0.005$)**
 3. **Support for mandatory vaccine if free ($p = 0.001$)**
 4. **Perception of safety concerns as barrier ($p = 0.001$)**
- No significant difference in recommendation by gender
- **Gynaecologists and paediatricians showed consistently higher KAP levels**



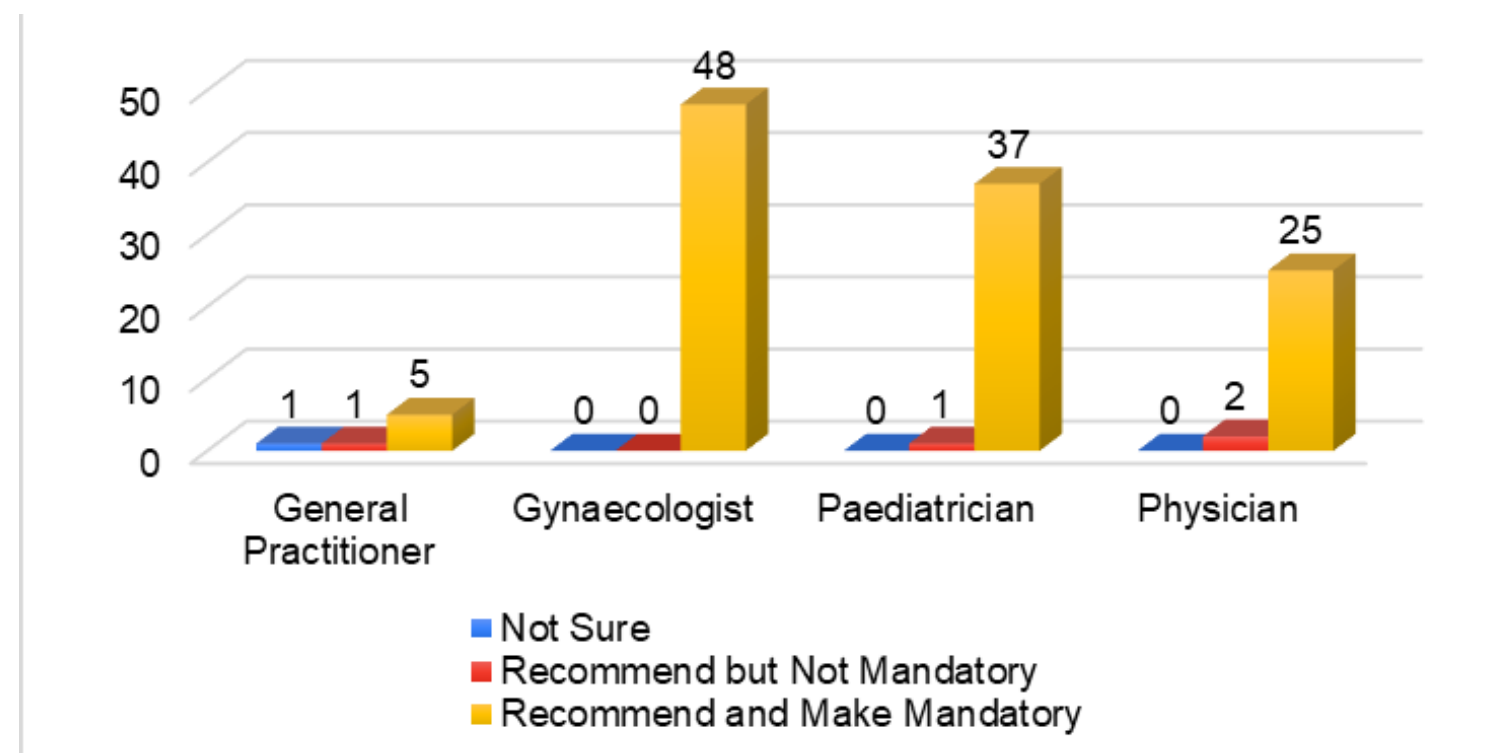
Key Associations & Statistical Insights



Specialty x Awareness of HPV Vaccine Exclusion in NIP
 $\chi^2 = 18.521, p = 0.005$

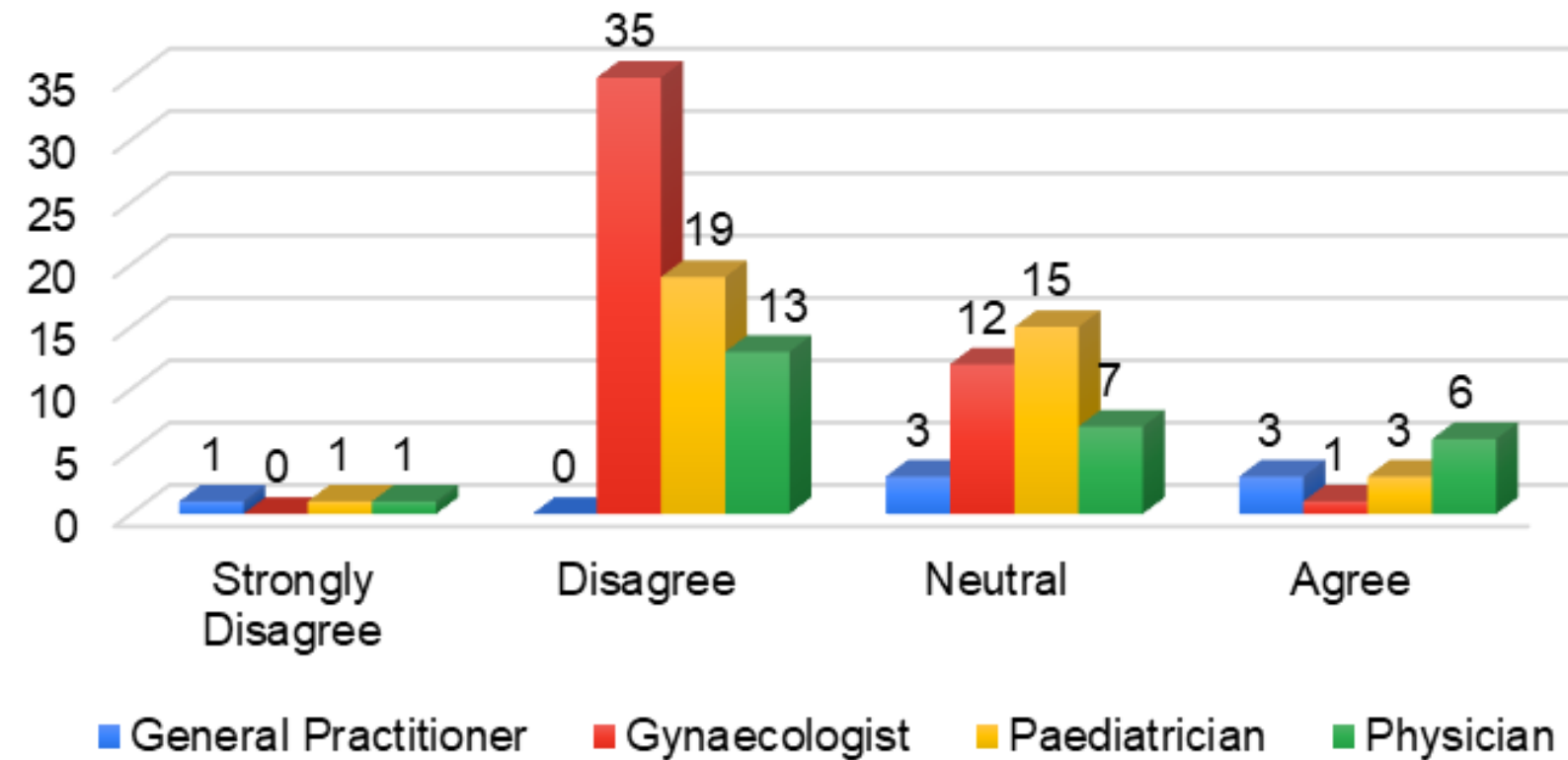


Specialty x Knowledge of HPV as an STD
 $\chi^2 = 32.833, p < 0.001$



Specialty x Recommendation or Mandate Support
 $\chi^2 = 22.223, p = 0.001$

Key Associations & Statistical Insights

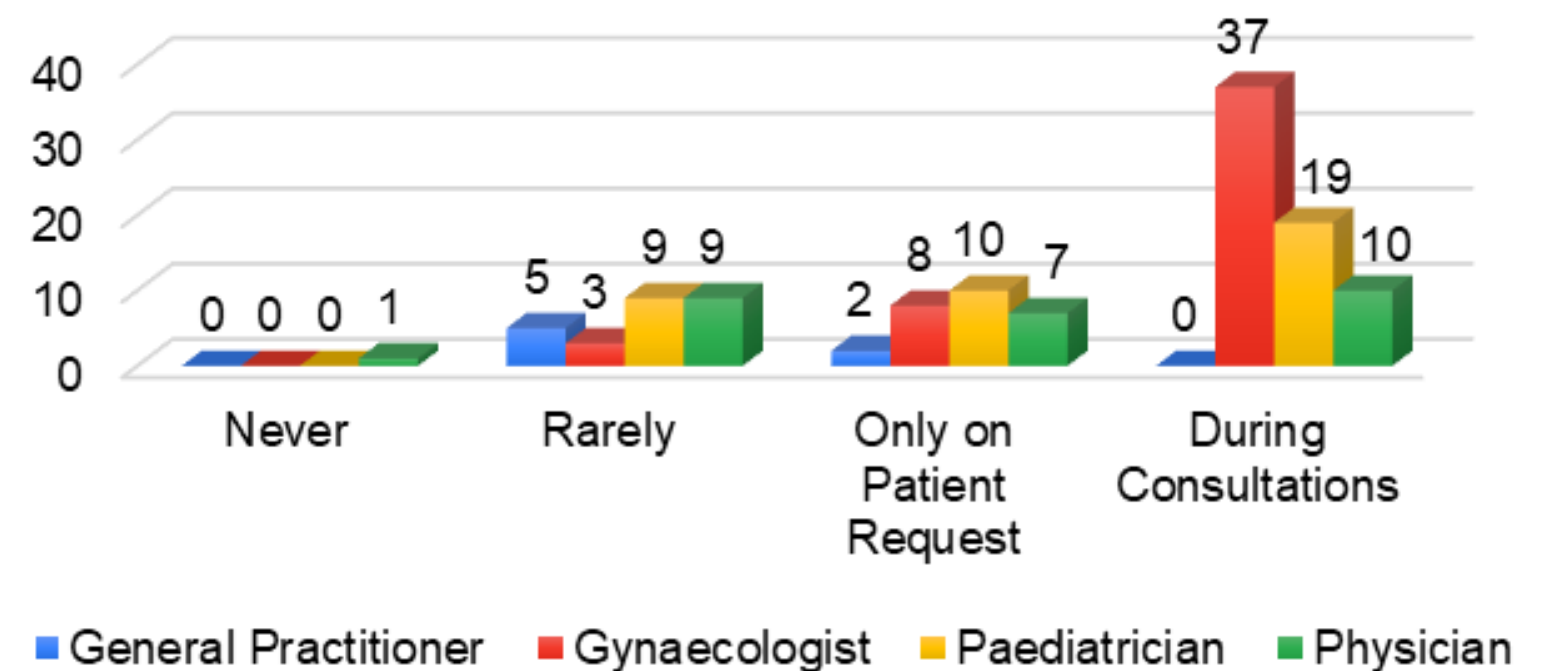


Specialty × Perception of Safety Concerns as a Barrier

$$\chi^2 = 27.726, p = 0.001$$

Specialty × Frequency of HPV Vaccination Discussion

$$\chi^2 = 29.568, p = 0.001$$



Case Study: Rwanda – A Global Success Story



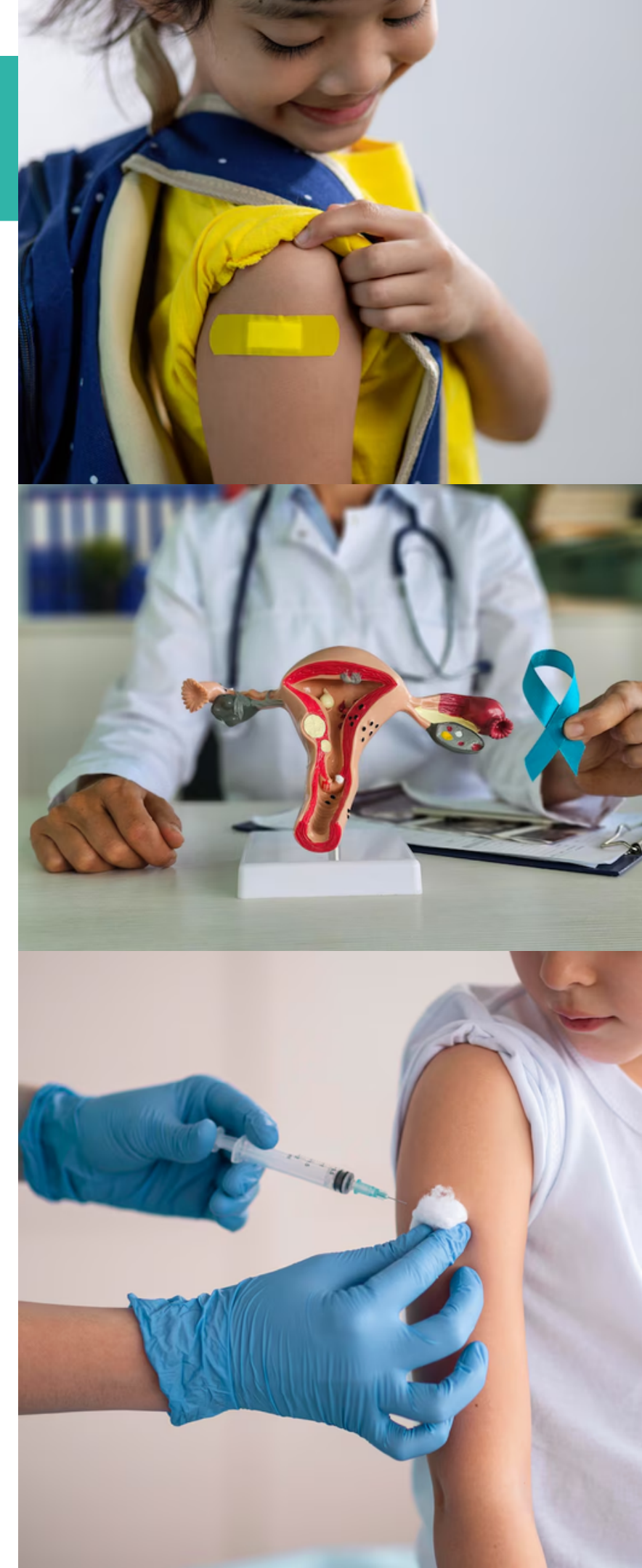
From Crisis to Control: Rwanda's HPV Vaccine Strategy

- 2011: First African country to launch a national HPV vaccination program
- Achieved >93% coverage among girls aged 11–15
- **Key success factors:**
- **Strong political leadership** – Backed by President's Office and Ministry of Health
- **Govt-Pharma partnership** – Free vaccines from Merck for 3 years (via GAVI)
- **School-based delivery model** – Central to reaching adolescent girls
- **Community engagement** – Health workers + local leaders drove awareness
- HPV vaccine rollout was part of a broader cancer prevention roadmap



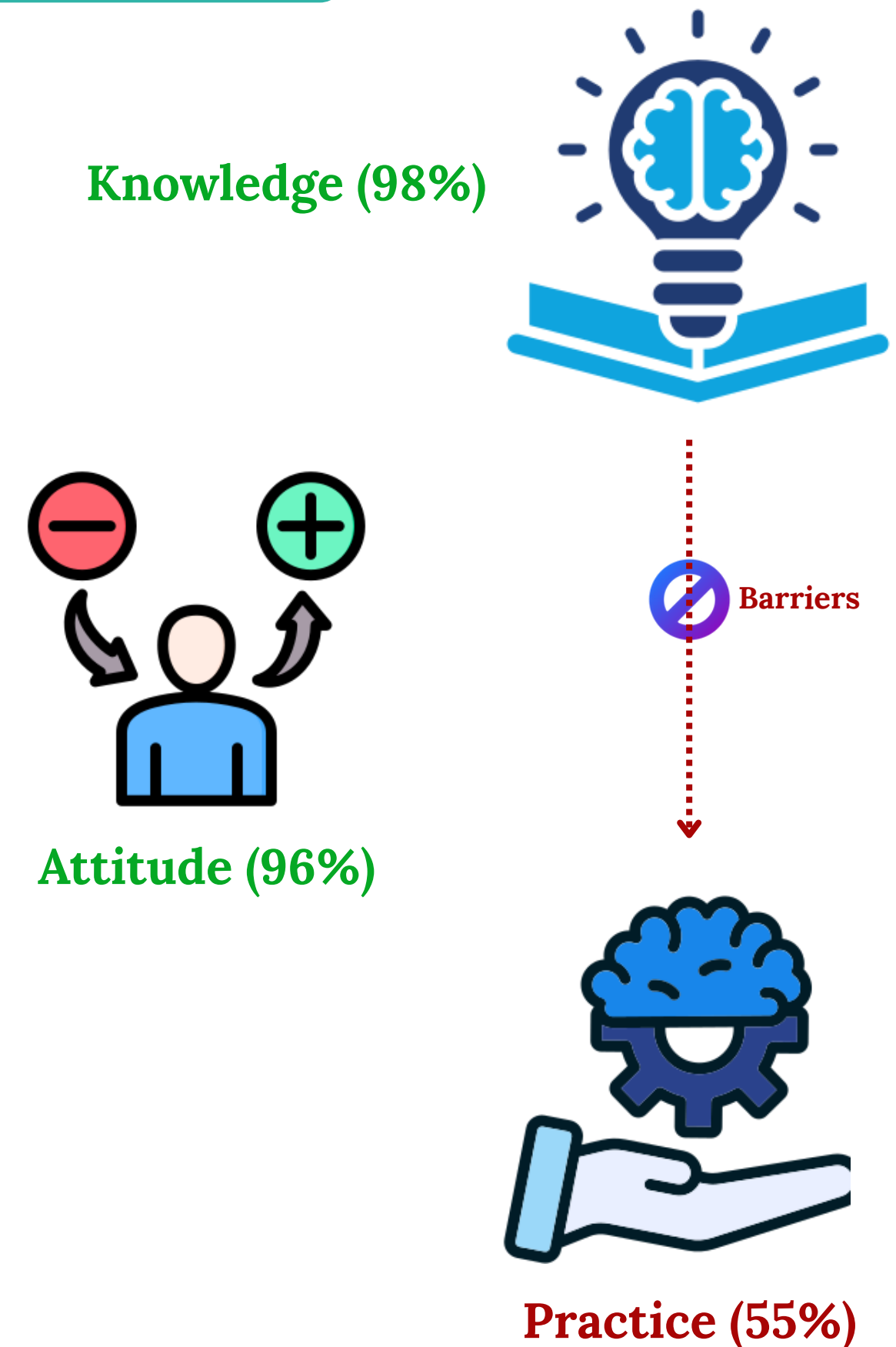
From Crisis to Coverage: Lessons from Rwanda for India

- Use of Cervavac to **reduce cost barriers—₹400 vs. ₹3000+ earlier**
- Integration of **HPV vaccination into school health programs**, similar to mid-day meal or deworming campaigns
- Strengthening **government–private partnerships** to coordinate supply, delivery & advocacy
- **Training and empowering doctors** to initiate HPV vaccine conversations with parents and adolescents
- Adopting **unified public health messaging** to reduce cultural and social hesitancy
- Leveraging ASHAs, ANMs, and teachers for community trust-building and mobilization



Key Insights from the Study

- **High knowledge among doctors**—but gaps in policy awareness (e.g., Cervavac, national immunization programs)
- **Positive attitudes overall**—but confidence in recommending to adolescents still limited
- **Practice–knowledge gap:** Only **55%** prescribe consistently despite 80% having prescribed before
- **Barriers identified:** Cost, cultural hesitancy, limited parent awareness, discomfort discussing sexuality
- **Specialty matters:** Gynecologists and pediatricians showed better KAP than general practitioners
- Rwanda's >90% coverage highlights importance of coordinated systems, not just awareness



Strategies to Improve HPV Vaccine Uptake

- Integration of **HPV vaccination into school health programs** for systematic coverage
- **CME sessions** to update doctors on Cervavac and immunization policies
- **Communication tools** for doctors to address parental concerns
- Display **informative materials in clinics** to normalize HPV vaccine conversations
- Strengthening **public health messaging** to reduce stigma and increase acceptability
- Promotion of **multi-sectoral collaboration between government, medical associations, and community leaders**
- Exploring **subsidization models or public-private partnerships** to make vaccines affordable in private care



Evaluating the Study: Strengths & Limitations



Strengths

- **Focused on an urban healthcare hub** with **diverse specialties**
- Captures both **quantitative data and qualitative insights** from field interactions
- Addresses a timely **public health priority** aligned with WHO and national goals
- **Adds to limited literature** on physician KAP in HPV vaccination in India
- **Direct inputs from doctors** enrich recommendations and real-world relevance



Limitations

- Convenience sampling may **limit generalizability** of findings
- **Final sample size (120)** was lower than estimated (267) due to time constraints
- **Self-reported responses** may include bias or social desirability
- **Focus limited to Kochi city**—results may not reflect rural or pan-India trends
- **No direct observation of practice behavior** (relied on survey data)



"We have the science, we have the solution. What we need now is the will to act."

— Inspired by WHO's call for cervical cancer elimination

Annexure: Survey Questionnaire

The study used a 24-item validated KAP questionnaire covering knowledge, attitude, and practice regarding HPV vaccine prescription.

Consent & Demographics

Knowledge

Attitude

Practice

Annexure: KAP Questionnaire

Survey on HPV Vaccine Awareness and Practices Among Doctors in Kochi

Conducted by Dr. Maneesha Mohan

Dear Participant,

I am Dr. Maneesha Mohan, conducting a study titled:

“Knowledge, Attitude, and Practice of Physicians, Paediatricians, and Gynaecologists in Kochi on HPV Vaccine Prescription: A Cross-Sectional Study”

This research aims to understand healthcare providers' perspectives, challenges, and experiences with HPV vaccination in Kochi. Your participation is voluntary, and all responses will remain anonymous and confidential.

- This survey will take approximately 5-7 minutes to complete.
- You may skip any question or withdraw at any time without any consequences.
- The data collected will be used solely for research purposes.

By selecting “I Agree,” you confirm that you understand the purpose of the study and voluntarily consent to participate.

☐ I Agree to Participate (Required to proceed)

☐ I Do Not Agree (Exit survey if selected)

Section 1: Demographics (Mandatory)

1. How do you identify your gender?
 - Male
 - Female
 - Prefer not to say
2. Which of the following best describes your medical specialty?
 - General Physician
 - Gynaecologist
 - Paediatrician
 - Other (please specify)
3. How many years have you been practicing medicine?
 - 0-5 years

- 6-10 years
- 11-15 years
- 16+ years

4. What type of healthcare setting do you primarily work in?

- Government hospital
- Private hospital
- Private clinic

Section 2: Knowledge (Mandatory)

5. What are the main risk factors for cervical cancer? (Select all that apply)

- HPV infection
- Multiple sexual partners
- Early sexual activity
- Other (please specify)

6. Which HPV vaccines are available in India? (Select all that apply)

- Cervarix
- Gardasil
- Gardasil-9
- Cervavac
- Don't know

7. Is the HPV vaccine included in India's national immunization program?

- Yes
- No
- Not sure

8. According to current guidelines, what is the most suitable age for initiating HPV vaccination?

- 9-14 years
- 15-26 years
- 26- 45 years
- Not sure

9. Is HPV infection a sexually transmitted disease?

- Yes
- No
- Not sure

10. Can HPV infection cause cervical cancer?

- Yes
- No
- Not sure

11. Does HPV infect both men and women?

- Yes
- No
- Not sure

12. Which of the following cancers in women are known to be caused by HPV? (Select all that apply)

- Cervical cancer
- Vulvar cancer
- Vaginal cancer
- Anal cancer
- Not sure

13. Is HPV infection usually asymptomatic?

- Yes
- No
- Not sure

Section 3: Attitude (Likert Scale, Mandatory)

(Responses: Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree)

14. I believe the HPV vaccine is effective in preventing cervical cancer.

15. The high cost of the HPV vaccine is a major barrier.

16. Parents hesitate due to cultural or religious beliefs.

17. If the HPV vaccine were freely available, would you recommend it or support making it mandatory?

- I would recommend it but not make it mandatory.
- I would recommend it and support making it mandatory.
- I would not recommend it.
- Not sure.

18. Doubt on the efficacy of HPV vaccine is one of the barriers for the recommendation

19. HPV vaccine is not recommended due to some safety concerns

20. Sexually transmitted nature of HPV is a barrier for a recommendation

Section 4: Practice (Mandatory)

21. Have you ever recommended the HPV vaccine?

- Yes
- No

22. What are the biggest barriers to recommending HPV vaccines? (Select all that apply)

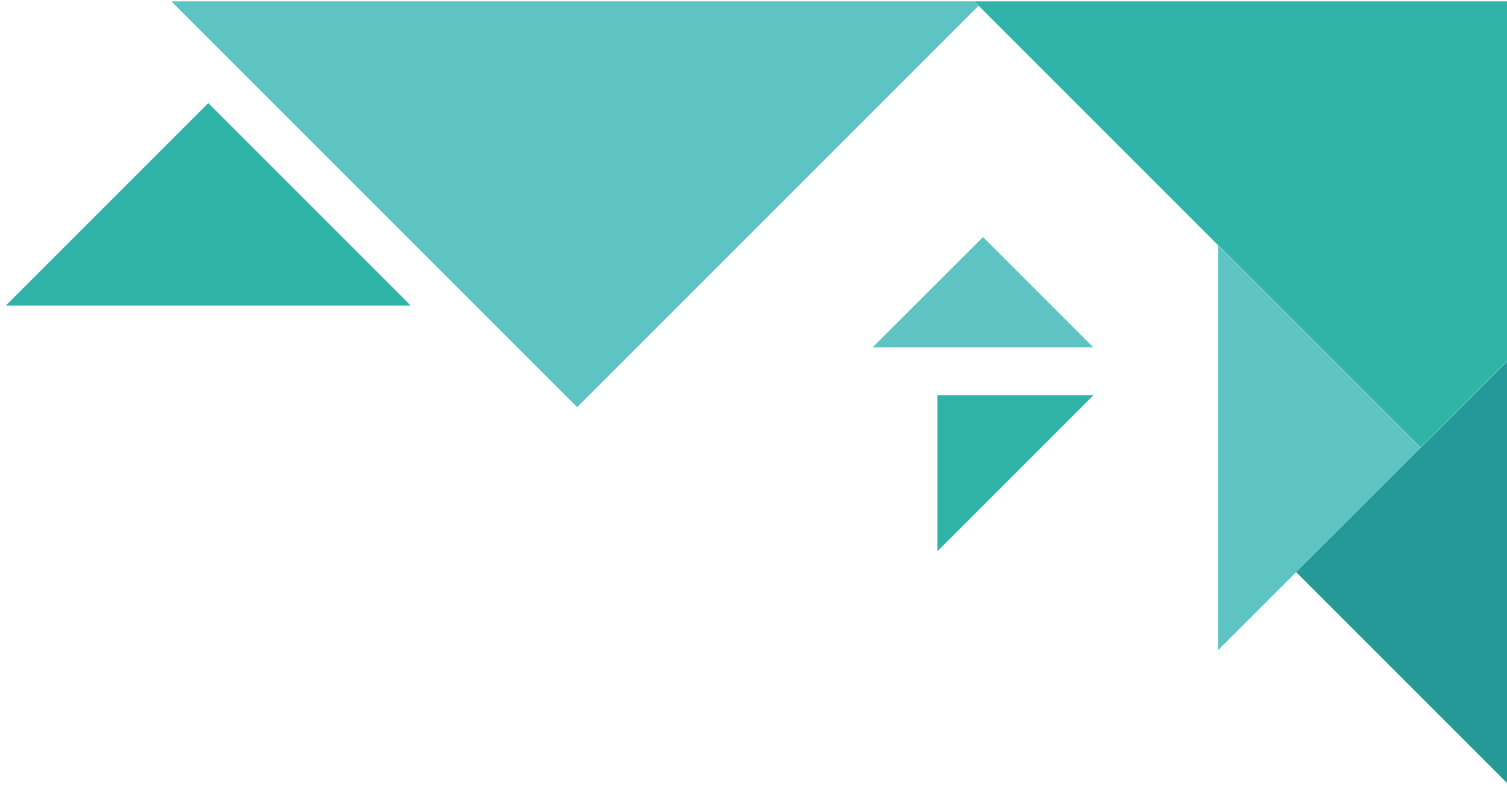
- High cost
- Lack of awareness among patients
- Safety concerns
- Religious or cultural beliefs
- Unavailability of the vaccine
- Other (please specify)

23. When do you most often discuss HPV vaccination with patients?

- During consultations
- Only on patient request
- Rarely
- Never

24. Do you provide information about cervical cancer prevention during routine consultations?

- Always
- Sometimes
- Rarely
- Never



THANK YOU!

For your attention



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