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RESEARCH ARTICLE

A Study to Assess the Knowledge and Attitude on HPV vaccination among the faculty of Sharda University, Greater Noida, Uttar Pradesh with a view to develop information Booklet

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Abstract: ***Background***: Human Papillomavirus (HPV) is the most common sexually transmitted infection worldwide and a leading cause of cervical cancer. Despite the availability of effective vaccines, uptake remains low in many regions, including India, due to limited awareness and cultural barriers. Faculty members in academic institutions play a vital role in influencing community health behaviors. This study aims to assess the knowledge and attitudes of Sharda University faculty toward HPV vaccination to support targeted educational interventions. ***Method and material:*** This descriptive study assessed the knowledge and attitudes of 101 faculty members at Sharda University toward HPV vaccination using an online structured questionnaire. Participants included faculty without prior HPV vaccine information, while vaccinated individuals were excluded. The questionnaire covered socio-demographics, knowledge questionnaire through 29 multiple-choice questions, and attitudes via a 15-item Likert scale. The tool was validated by experts to ensure accuracy and relevance. ***Result:*** The study revealed that most participants were young faculty members aged 25-30 years, predominantly female, and from allied sciences. A majority (69.3%) had poor knowledge of HPV vaccination, while only 19.8% showed good knowledge. Attitude toward HPV vaccination was largely negative, with 90.1% displaying unfavourable views. No significant association was found between knowledge levels and demographic variables such as age, gender, education, or vaccination status. ***Conclusion:*** The findings indicate a generally low level of knowledge and a predominantly negative attitude toward HPV vaccination among Sharda University faculty. This underscores the need for comprehensive educational programs targeting all demographic groups to raise awareness. Enhancing knowledge and attitudes is crucial to improve HPV vaccine acceptance and uptake in this population.

Keywords: HPV Vaccination, Human Papillomavirus, Knowledge, Attitude, Faculty Members, Health Education, Information Booklet

INTRODUCTION

Human Papillomavirus (HPV) is recognized as the most common sexually transmitted infection worldwide, with an estimated 80% of sexually active individuals contracting it at some point in their lives (WHO, 2024). Among the various HPV strains, types 16 and 18 are classified as high-risk because they are responsible for nearly 70% of cervical cancer cases globally (Rabiu & Yahuza, 2023). Cervical cancer remains a major public health challenge, especially in low- and middle-income countries, where it accounts for a high proportion of cancer-related deaths in women due to limited access to screening and vaccination services.

The World Health Organization's 2024 report highlights that cervical cancer is the fourth most common cancer among women worldwide, causing approximately 570,000 new cases and over 311,000 deaths annually. India contributes significantly to this burden, with about 70,000 deaths annually, making cervical cancer the second leading cause of cancer mortality among Indian women (Indian Council of Medical Research, 2024). Despite the availability of effective HPV vaccines such as Gardasil and Cervarix, vaccine uptake remains suboptimal, primarily due to gaps in knowledge, cultural stigma, and misinformation (Jasrotia et al., 2024).

Background

Persistent infection with high-risk HPV types is the primary cause of cervical cancer, a disease that typically progresses slowly, allowing for preventive interventions through vaccination and screening (Sunite A. Ganju et al., 2021). The introduction of HPV vaccines has led to remarkable reductions in HPV infection rates and cervical cancer incidence in many countries with robust immunization programs (Lakneh et al., 2022). However, despite these successes, global HPV vaccine coverage is uneven, with low uptake in many developing countries including India.

In urban settings like Greater Noida, Uttar Pradesh, certain factors such as higher population density, increased risky sexual behaviors, and socioeconomic disparities contribute to higher HPV transmission risk (Hariyono Winarto et al., 2022). Additionally, urban populations often face challenges like misinformation, vaccine hesitancy, and insufficient health education. University faculty, as respected community figures and educators, hold a strategic position to influence attitudes and disseminate accurate information about HPV and its vaccination.

National HPV vaccination programs in India, launched in select states including Delhi, Punjab, and Sikkim, have demonstrated promising results, with vaccination completion rates exceeding 90% in some areas (Ridhima Jasrotia et al., 2024). Yet, challenges such as vaccine cost, accessibility issues, and cultural misconceptions continue to limit broader acceptance. Awareness and education about HPV's link to cervical cancer, vaccine safety, and the importance of early vaccination are crucial for enhancing vaccine coverage. Studies show that healthcare providers and educators' knowledge significantly impact vaccine acceptance and preventive health behaviors (Verma et al., 2024). Given the faculty's influential role in shaping student perceptions and community health norms, understanding their knowledge and attitudes toward HPV vaccination is essential for designing effective awareness campaigns.

Significance of the Study

The present study focuses on assessing the knowledge and attitudes of the faculty at Sharda University, Greater Noida, toward HPV vaccination. The findings will help identify knowledge gaps, misconceptions, and potential barriers to vaccine acceptance within this key group. Using this data, an information booklet will be developed, tailored to address specific educational needs and promote informed decision-making regarding HPV vaccination.

By enhancing faculty awareness and positive attitudes, the study aims to foster a supportive environment for HPV vaccination advocacy, which can indirectly increase vaccine uptake among students and the broader community. This effort aligns with national and international goals to reduce the burden of cervical cancer through effective prevention strategies.

Need for the study

Cervical cancer continues to be one of the most common and deadly cancers affecting women worldwide, particularly in low- and middle-income countries like India. Despite the availability of effective prevention through the HPV vaccine, awareness, understanding, and acceptance of the vaccine remain significantly low among adults. The World Health Organization (WHO) emphasizes the importance of HPV vaccination; however, vaccination rates are still inadequate due to misinformation, lack of knowledge, cost barriers, and limited access.

In India, cervical cancer incidence is high, yet vaccine coverage remains insufficient, making it critical to improve education and awareness about HPV vaccination. Faculty members in academic institutions, such as Sharda University in Greater Noida, Uttar Pradesh, hold influential roles in shaping health behaviors and public attitudes. Their knowledge and attitude toward HPV vaccination can significantly impact students and the wider community.

Existing studies highlight notable gaps in knowledge and mixed attitudes toward HPV vaccination among various groups, including students and women in rural areas. For instance, only a small fraction of women in Punjab have undergone cervical cancer screening or received the HPV vaccine, largely due to a lack of information and financial constraints (Keshni, 2019). Similarly, studies among nursing students reveal inadequate knowledge and low vaccination uptake despite positive attitudes in some cases (Chauhan et al., 2023).

In this context, assessing the knowledge and attitudes of faculty at Sharda University is crucial to identify educational gaps and misconceptions. This will enable the development of a tailored information booklet to promote accurate knowledge, positive attitudes, and vaccination acceptance, thereby contributing to cervical cancer prevention efforts in the region.

Statement of the problem

A Study to Assess the Knowledge and Attitude on HPV vaccination among the faculty of Sharda University, Greater Noida, Uttar Pradesh with a view to develop information Booklet"

Purpose of the study

The purpose of this study is to assess and enhance awareness about HPV vaccination among the faculty members of Sharda University in Greater Noida, Uttar Pradesh. The goal is to develop an informative booklet that can help spread knowledge and encourage HPV vaccination among both men and women.

Objectives of the study

- To assess the level of knowledge on HPV vaccine among faculty of Sharda University.
- To measure the attitude level on HPV vaccine among faculties of Sharda University
- To develop and information booklet regarding HPV vaccination and its importance.
- To find out the association between the knowledge score with demographic variables

Gap of the study

- Lack of Awareness: Many people, including healthcare students and faculty, have limited knowledge about HPV, its transmission, and the link between HPV and cervical cancer.
- Negative Attitudes Toward Vaccination: Even when people are aware of the vaccine, negative attitudes, myths, and fears about side effects reduce acceptance and uptake.
- High Cost of the Vaccine: The cost of the HPV vaccine remains a barrier, especially for those from low-income backgrounds, preventing large-scale immunization.
- Limited Accessing Rural and Underserved Areas: In rural areas, the vaccine is either unavailable or not part of regular immunization drives, further contributing to low coverage.
- Long-Term Side Effect Concerns: Misconceptions about long-term side effects of the HPV vaccine contribute to hesitancy among both males and females.
- Inadequate Training for Healthcare Providers: Faculty, nurses, and health workers sometimes lack updated and accurate knowledge about the HPV vaccine, reducing their ability to advocate effectively.

Research Hypotheses

All hypothesis will be assessed at 0.05 level of significant

Ho1: There will be no significant association between knowledge with selected demographic variables regarding the HPV vaccination.

Assumptions

1. There will be adequate knowledge about HPV vaccine among faculty of Sharda University.
2. There will be positive attitude about HPV among faculty of Sharda university.

Research Variable

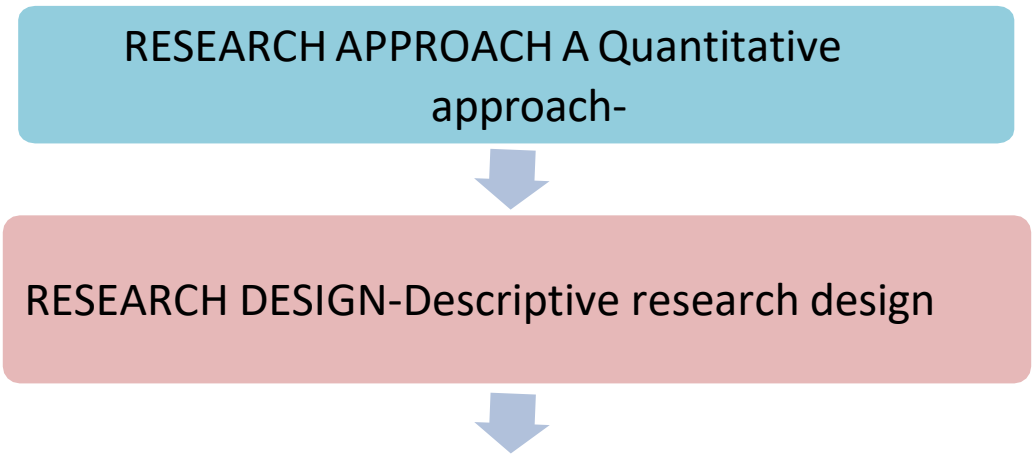
Independent variables: Variables those that the researcher intentionally changes or modifies, also called manipulated variables. The information booklet is the independent variable in this study.

Dependent variables: are variables that changes when the researcher manipulates the independent variable. The factor that is dependent in the current investigation is knowledge and attitude concerning HPV vaccination among the faculties of Sharda University.

Operational Definition

1) Knowledge: The understanding that the participants know about HPV vaccination respects to symptoms, risk factors, treatment, and vaccine schedule. According to my study I will be assessing the knowledge regarding HPV vaccine.
2) Attitude: To check the attitude level of Respondents toward HPV vaccination. Their belief and feeling about HPV vaccination. To find what women think about HPV and its advantages.
3) HPV vaccine: The HPV vaccine helps protect against genital warts and most cases of
4) cervical cancer. It also guards against other cancers caused by HPV, including cancers of the vagina, vulva, penis, and anus. In addition, the vaccine offers protection against certain mouth, throat, head, and neck cancers linked to HPV.
5) Sharda faculty: According to my study both men and women working at Sharda University will be the main participants and their knowledge and attitude towards HPV vaccine.

RESEARCH METHODOLOGY



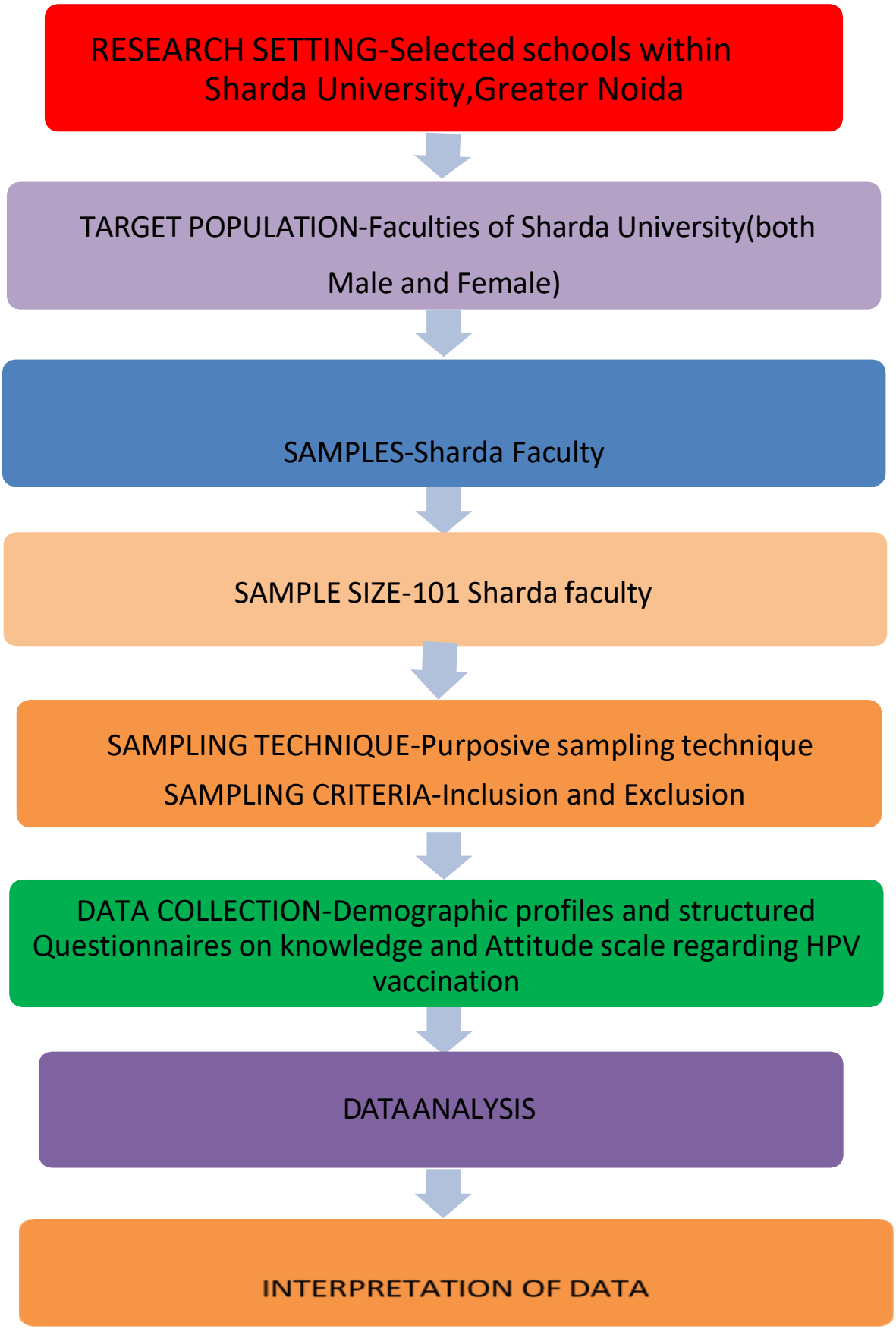


Fig.1 Schematic presentation of Research Design

Sample size

Sample size is the number of subjects or units included in a study. It should be adequate enough to provide reliable and valid results (suresh K.Sharma,2018)

In this study the sample size will be 101 faculties .the sample will be taken from different schools of Sharda University.

$$\frac{Z(1-\alpha/2) \times (SD)^2}{SD}$$

Z=Required sample size

α/2) =value from the standard normal distribution for the the desired confidence level(1.96 for 95%)

SD= population standard deviation i.e 0.05

Variables

Variables are characteristics, like weight or height that might have many values. Variables are attributes, or characteristics of individuals, objects, or circumstances that change or vary. Research variable: Knowledge and Attitude on HPV vaccine.

Independent variables: Variables those that the researcher intentionally changes or modifies, also called manipulated variables .The information booklet is the independent variable in this study.

Dependent variables: are variables those changes when the researcher manipulates the independent variable. The factor that is dependent in the current investigation is knowledge and attitude concerning HPV vaccination among the faculties of Sharda University.

Sampling criteria

Inclusion criteria for sampling

1. Male and Female faculty of medical profession who have done vaccination of selected schools of Sharda University, Greater Noida, Uttar Pradesh.
2. Faculty who have not received any information regarding HPV vaccination.

Exclusion criteria for this study are

1. Those faculty who are aware about the vaccination and are already vaccinated HPV.

Method of Data Collection

The term method refers to the approach or technique used to gather information, while data collection is the structured and systematic process of obtaining data relevant to a research study. In this particular study, which focused on assessing the knowledge and attitude of faculty members toward HPV vaccination, the researcher chose to collect data using a questionnaire. This tool was designed to gather accurate and relevant information directly from the participants in an organized manner.

A questionnaire is a Google form link that a research subject is asked to complete the link that as provided.

Development of the tool

The tool used in this study was developed by the researcher based on relevant literature and the study's objectives. A questionnaire was designed to assess knowledge, and a Likert scale was created to measure attitudes among the faculty members of Sharda University. To ensure validity, the tool was reviewed by five experts from various nursing departments. Their feedback and suggestions were carefully considered and incorporated before finalizing the tool.

Description of the tool

As per expert's suggestions the tool was prepared, the final tool consist of two sections

- **Section A:** Socio-demographic data
- **Section B:** It consists of self-structured questionnaire for assessment of knowledge regarding HPV vaccination.

- **Section C:** 5-point Likert scale used to assess the level of attitude regarding HPV vaccination. Attitude checklist (Likert Scale)

Section-A consists of 10 on personal demographic data of the subjects those are:

Age, Gender, Educational status, Reason for not getting Vaccinated, Professional status, Monthly Income, Source of knowledge regarding, HPV vaccination Ever taken vaccine for HPV, Have you received two doses of vaccination?

Section-B It deals with structured questionnaire to convey the knowledge regarding HPV vaccination among the faculty of Sharda University. It consists of 29 multiple questions. Each question gives success answer as 1 score. If not answering gives 0 score.
Section -C 5-point Likert scale. It consists of 15 questions to assess the level of Attitude towards HPV vaccination.

Validity
Validity refers to how accurately a tool or instrument measures what it is intended to measure. It ensures that the results truly reflect the concept being studied.
The validity of the tool was ensured by consulting five experts from various nursing departments. Their feedback and valuable suggestions were carefully considered and included in the final version of the tool.

Reliability
The internal reliability test was done. The test-retest method was used and was calculated With the help of Karl Pearson's correlation coefficient formula for estimation of reliability.

$$r = \frac{n\Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[n\Sigma x^2 - (\Sigma x)^2]\,[n\Sigma y^2 - (\Sigma y)^2]}}$$

The Pearson's r value was found 0.9 and it shows that tool was highly reliable.
r: is the Pearson correlation coefficient. n: is the number of data pairs.
Σxy: is the sum of the products of the paired scores (x and y). Σx: is the sum of all x-values.
Σy: is the sum of all y-values.

Σx^2: is the sum of the squared x-values. Σy^2: is the sum of the squared y-values.

Pilot study
A pilot study is a small-scale preliminary conducted in order to evaluate feasibility,

duration, cost, adverse event and improve upon the study design prior to performance of full-scale research project.
Pilot study was conducted to determine the feasibility of the study, to refine and modify and to establish the sample size. The pilot study was conducted from 10 march to 18 march in school of allied science, Sharda university, Greater Noida.10% of the sample had chosen to conduct pilot study in order to assess the feasibility and validity of the tool, to refine and modify tools. The study was found to be feasible.

DATA ANALYSIS AND INTERPRETATION
This chapter presents the analysis and interpretation of data collected from 101 faculty members at selected schools within Sharda University. A self-structured questionnaire was used to assess their knowledge about HPV vaccination, and a Likert scale was used to evaluate their attitudes toward the vaccine.
The objectives of the study are:
1. To assess the level of knowledge on HPV vaccine among faculty of Sharda University.
2. to measure the attitude level on HPV vaccine among faculties of Sharda University.
3. To develop and information booklet regarding HPV vaccination and its importance.
4. To find out the association between the knowledge score with demographic variables.

The data analysis and interpretation was discussed under the following sections
Section A: Findings related to socio demographic variables of the study subjects.
Section B: Findings related to of level of knowledge regarding HPV vaccination.
Section C: Finding related of level of attitude regarding HPV vaccination.
Section D: Findings related to association between the knowledge score with demographic variables

Section1: Findings related to socio demographic variables of the study subjects.

Table 1: Frequency and Percentage distribution of Demographic characteristic of the study subjects

Background variables.	**F**	**%**
Age in years		
>40 year	8	7.90%
25- 30	76	75.20%
31-35	10	9.90%

36-40	7	6.90%
Gender		
Male	15	14.90%
Female	86	85.1%%
Religion		
Hindu	65	64.40%
Muslims	32	31.70%
Others	4	4.00%
Educational status		
Doctorate	23	22.80%
Graduation	23	22.80%
Post graduation	55	54.50%
Reason for not get getting vaccinated		
Cost	31	30.70%
Efficacy	10	9.90%
Knowledge	39	38.60%
Safety	21	20.80%
Professional status		
Allied science	52	51.50%
Business studies	6	5.90%
Dental	8	7.90%
Engineering	5	5.00%
Pharmacy	30	29.70%
Monthly income		
<40000	5	5.00%
>40000	10	9.90%
25000-35000	61	60.40%
Source	13	12.90%
Books	25	24.80%
Friends	34	33.70%
Magazine	5	5.00%
Newspaper	11	10.90%
TV.	26	25.70%
Ever taken vaccine for HPV		
Yes	4	4.00%
No	97	96.00%
Have you received two doses of vaccination		
Yes	6	6.00%
No	95	94.00%

Table 4.1 reveals the socio demographic profile of 101 study subjects among them majority (75.2%) aged between 25 and 30 years. Participants older than 40 years comprised only 7.9%, while those in the 31–35 and 36–40 year age groups accounted for 9.9% and 6.9%, respectively. As per gender distribution, females represented the overwhelming majority at 85.1%, with males constituting 14.9% of the sample.

In terms of religion, Hindu participants made up 64.4% of the study population, followed by Muslims at 31.7%, and a small proportion (4%) belonged to other religious groups.

According to Educationally status, more than half of the participants (54.5%) had completed post-graduation, while equal proportions of 22.8% held either a doctorate or a graduation degree. As per reasons for not getting vaccinated, lack of knowledge was the most common barrier, cited by 38.6% of respondents. Cost concerns were also significant, reported by 30.7%, followed by safety concerns (20.8%) and doubts about vaccine efficacy (9.9%).

As per the reason when exploring reasons for not getting vaccinated, lack of knowledge was the most common barrier, cited by 38.6% of respondents. Cost concerns were also significant, reported by 30.7%, followed by safety concerns (20.8%) and doubts about vaccine efficacy (9.9%). As per professional status, participants from allied science disciplines formed the largest group at 51.5%. This was followed by those in pharmacy (29.7%), dental (7.9%), business studies (5.9%), and engineering (5%). unspecified sources (12.9%), newspapers (10.9%), and magazines (5%).

According to this very few participants had ever taken the HPV vaccine, with only 4% reporting they had received it. Similarly, just 6% had completed the recommended two doses of the vaccine, while the vast majority (94%) had not.

Section 2: Findings related to of level of knowledge regarding HPV vaccination

Table 2.1: Frequency and percentage distribution of the participants based on the level of knowledge regarding HPV vaccination. N=101

Knowledge level	Category	percentage	Knowledge score	Knowledge percentage
Poor knowledge	0-9	<50%	70	69.3%
Average	10- 19	50-75%	11	10.89%
Good	20-29	>75%	20	19.8%

The study assessed the participants' knowledge levels regarding HPV vaccination among 101 individuals. The majority of participants, accounting for 70 individuals (approximately 69.3%), demonstrated poor knowledge, with category scores from 0 to 9, which corresponds to less than 50% of the total possible knowledge score. A smaller group of 11 participants (10.9%) showed an average level of knowledge, scoring between 10 and 19, representing 50% to 75% knowledge. Lastly, 20 participants (19.8%) exhibited good knowledge about HPV vaccination, with scores between 20 and 29, indicating more than 75% knowledge of the subject.

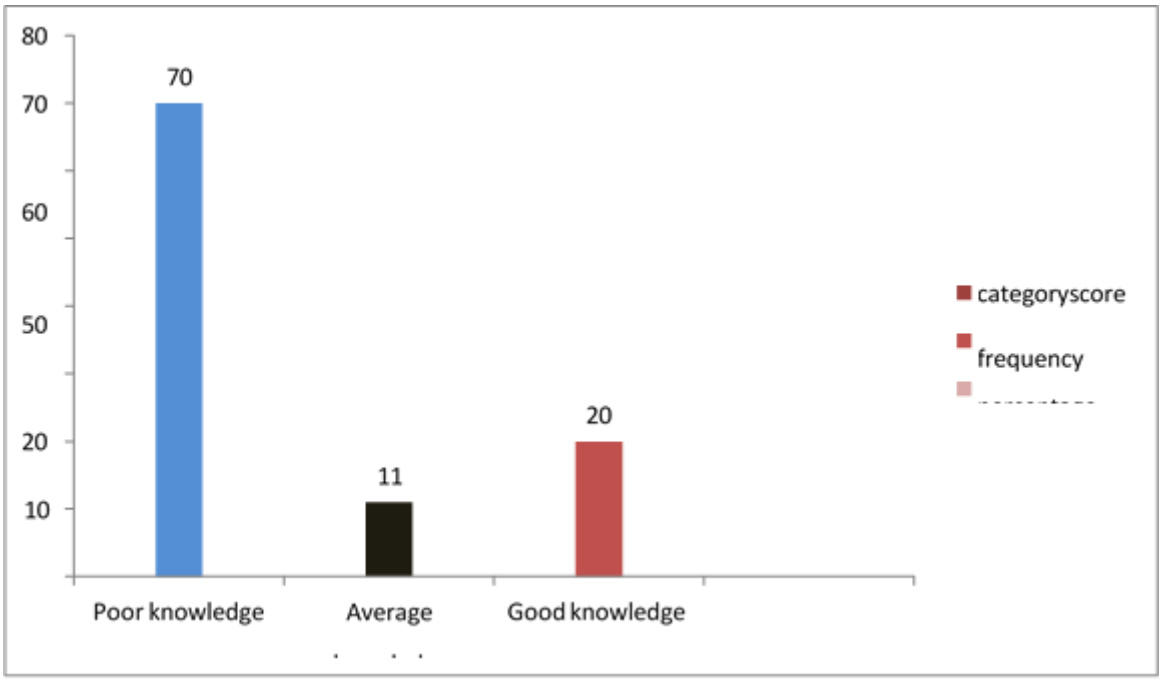


Fig: Findings related to of level of knowledge regarding HPV vaccination

The data present in table 2 shows the pre-test knowledge regarding HPV vaccination. The results reveal that the Maximum participants 70% have poor knowledge regarding the HPV vaccination about 10% have average knowledge and 20% have good knowledge. This revealed that Maximum participants were not aware about the HPV vaccination.

Section 3: Finding related of level of attitude regarding HPV vaccination.

Table 3: Frequency and percentage distribution of the participants based on the level of attitude regarding HPV Vaccination.

Attitude level	Category score	percentage	Attitude score	Attitude percentage
Negative attitude	>7.5%	90.1%	91	90.0%
Positive attitude	<7.5%	9.9%	10	9.90%

Table 3 explains the frequency and percentage distribution of participants based on their attitude level regarding HPV vaccination. Among the 101 participants, a predominant majority of 91 individuals (90.1%) exhibited a negative attitude toward HPV vaccination, scoring above 7.5% on the attitude scale. In contrast, only 10 participants (9.9%) demonstrated a positive attitude, with scores below 7.5% regarding HPV vaccination among faculty of Sharda University.

Section 4: Findings related to association between the knowledge score with demographic variables

Table 4: Association between knowledge and selected demographic variables

Variable	Poor	Average	Good	Chi-square	df	P value
Age						
25-30	1(25.0%)	53(73.6%)	22(88.0%)	7.983	6	0.239
31-35	1(25.0%)	8(11.1%)	1(4.0%)			
36-40	1(25.0%)	5(6.9%)	1(4.0%)			
>40 years	1(25.0%)	6(8.3%)	1(4.0%)			
Gender						
Male	1(25.0%)	9(12.5%)	5(20.0%)	1.165	2	0.559
Female	3(75.0%)	63(87.5%)	20(80%)			
Religion						
Hindu	3(75.0%)	45(62.5%)	17(68.0%)	6.47	4	0.167
Muslims	0(0.0%)	25(34.7%)	7(28.0%)			
Others	1(25.0%)	2(2.8%)	1(4.0%)			
Education status						
Graduation	0(0.0%)	18(25.0%)	5(20.0%)	4.38	4	0.357
Post graduation	2(50.0%)	41(56.9%	12(48.0%)			
Doctorate	2(50.0%)	13(18.1%)	8(32.0%)			
Reason for not getting vaccinated						
Cost	0(0.0%)	24(33.3%)	7(28.0%)	4.982	6	0.546
Safety	2(50.0%)	15(20.8%)	4(16.0%)			
Efficacy	1(25.0%)	6(8.3%)	3(12.0%)			
No knowledge	1(25.0%)	27(37.5%)	11(44.0%)			
Professional status						
Dental	0(0.0%)	6(8.3%)	2(8.0%)	4.932	8	0.765
Pharmacy	2(50.0%)	18(25.0%)	10(40.0%)			
Engineering	0(0.0%)	5(6.9%)	0(0.0%)			
Allied science	2(50.0%)	38(52.8%)	12(48.0%)			
Monthly income						
25000-30000	1(25.0%)	44(61.1%)	16(64.0%)	13.805	8	0.087
31000-35000	2(50.0%)	10(13.9%)	0(0.0%)			
36000-40000	1(25.0%)	8(11.1%)	4(16.0%)			

>40000	0(0.0%)	8(11.1%)	2(8.0%)			
Source of knowledge regarding HPV vaccination through						
TV	1(25.0%)	17(23.6%)	8(32.0%)	7.033	8	0.533
Newspaper	1(25.0%)	10(13.9%)	0(0.0%)			
Magazines	0(0.0%)	4(5.6%)	1(4.0%)			
Friends	1(25.0%)	26(36.1)	7(28.0%)			
Books	1(25.0%)	15(20.8%)	9(36.0%)			
Ever taken vaccine for HPV						
Yes	1(25.0%)	2(2.8%)	1(4.0%)	4.92	2	0.085
No	3(75.0%)	70(97.2%)	24(96.0%)			
Have you received two doses of vaccination						
Yes	1(25.0%)	2(2.8%)	1(4.0%)	4.92	2	0.085
No	3(75.0%)	70(97.2%)	24(96.0%)			

The above tables describes the association between the Knowledge levels with demographic variables

Association between Knowledge and Age

The association between participants' age and their level of knowledge about HPV vaccination was analyzed using the Chi-square test, yielding a value of 7.983 with 6 degrees of freedom and a p-value of 0.239, indicating no statistically significant relationship. Among different age groups, participants aged 25–30 years constituted the largest proportion across all knowledge levels, with 73.6% having average knowledge and 88% exhibiting good knowledge. In contrast, other age groups such as 31–35, 36–40, and over 40 years had relatively fewer participants with average or good knowledge.

Association between Knowledge and Gender

The distribution of knowledge levels across gender showed no significant association (Chi- square = 1.165, df = 2, p = 0.559). Among males, 20% demonstrated good knowledge, while 80% of females fell within average and good knowledge categories combined. The majority of females (87.5%) exhibited average knowledge, whereas 75% of those with poor knowledge were females, suggesting a similar distribution of knowledge across genders.

Association between Knowledge and Religion

Religion also showed no statistically significant association with knowledge levels (Chi- square = 6.47, df = 4, p = 0.167). Hindu participants comprised the majority across all categories with 62.5% showing average knowledge and 68% demonstrating good knowledge. Muslim participants followed, with 34.7% having average knowledge and 28% having good knowledge. Participants from other religions made up a small fraction, with a negligible presence in each knowledge category.

Association between Knowledge and Educational Status

The level of education did not significantly affect participants' knowledge about HPV vaccination (Chi-square = 4.38, df = 4, p = 0.357). Post-graduates represented the largest group with average knowledge (56.9%) and a considerable proportion with good knowledge (48%). Doctorate holders and graduates were distributed across the knowledge categories without significant differences, indicating that higher formal education did not necessarily translate to better HPV vaccination knowledge**.**

Association between Knowledge and Reason for Not Getting Vaccinated When examining the reasons for not getting vaccinated, no significant association was found between these reasons and knowledge levels (Chi-square = 4.982, df = 6, p = 0.546). Participants citing lack of knowledge accounted for the highest percentages in both average (37.5%) and good (44%) knowledge categories. Those concerned about cost, safety, or efficacy were spread across all knowledge levels without clear patterns.

Association between Knowledge and Professional Status

Professional status was also not significantly associated with knowledge level (Chi-square = 4.932, df = 8, p = 0.765). Allied science professionals made up the largest group with average (52.8%) and good (48%) knowledge, followed by pharmacy professionals. Dental and engineering professionals had smaller representations and more variation across knowledge

categories.

Association between Knowledge and Monthly Income
Monthly income showed no statistically significant association with knowledge level (Chi- square = 13.805, df = 8, p = 0.087). Participants earning between ₹25,000–30,000 represented the largest group with average (61.1%) and good (64%) knowledge. Other income brackets had fewer participants and displayed no consistent trend across knowledge categories.

Association between Knowledge and Source of Knowledge about HPV Vaccination
Sources of information such as TV, newspapers, magazines, friends, and books were analyzed for their relationship with knowledge levels but showed no significant associations (Chi-square = 7.033, df = 8, p = 0.533). Friends were the most common source among participants with average knowledge (36.1%), followed by TV (23.6%) and books (20.8%). The distribution suggests that no single source was distinctly associated with better knowledge levels.
Association between Knowledge and HPV Vaccination Status

Only a few participants reported having taken the HPV vaccine or completed two doses. No significant association was found between vaccination status and knowledge levels (Chi-square = 4.92, df = 2, p = 0.085). Among those vaccinated, knowledge levels were similar to those not vaccinated; indicating that receiving the vaccine did not necessarily correlate with higher knowledge about HPV vaccination.

The analysis revealed no statistically significant associations between participants' knowledge levels about HPV vaccination and the selected demographic variables, including age, gender, religion, educational status, professional status, monthly income, source of information, and vaccination status. Although certain groups such as younger participants aged 25–30 years, those with post-graduate education, and allied science professionals tended to show higher levels of knowledge, these differences were not significant. This suggests that knowledge about HPV vaccination is generally low to moderate across diverse demographic segments in the study population. Efforts to improve awareness and education about HPV vaccination should be broad-based and inclusive, targeting all demographic groups to enhance knowledge and ultimately improve vaccination uptake.

DISCUSSION

Finding and the discussion of the study
This chapter deals with the discussion which was based on the findings obtained from the statistical analysis and its relation to the objectives of the study, the theoretical framework and the literature review.

A Study to Assess the Knowledge and Attitude on HPV vaccination among the faculty of Sharda University, Greater Noida, Uttar Pradesh with a view to develop information Booklet.

The objectives of the study are:
1. To assess the level of knowledge on HPV vaccine among faculty of Sharda University.
2. to measure the attitude level on HPV vaccine among faculties of Sharda University.
3. To develop and information booklet regarding HPV vaccination and its importance.
4. To find out the association between the knowledge score with demographic variables.

In the present study, the mean age of hypertensive patients was 59.77 ± 12.71 years. Most patients were older, with 50%

1. Findings related to association between knowledge with their selected demographic variable.
Findings regarding participant's demographic characteristics

The table above provides an overview of the participants' demographic details. Most of the individuals in the study (75.2%) were between the ages of 25 and 30, and the majority were female (85.1%). A large portion (64.4%) identified as Hindu, and more than half (54.2%) held a

Major findings of the study
The findings of the study are described in the light of the objectives by relating to the results of similar studies. The major finding of the study was presented under the following headings.
1. Findings related to distribution of data according to demographic variables.
2. Findings related to level of knowledge regarding HPV vaccination.
3. Findings related to level of Attitude regarding HPV vaccination

postgraduate degree. When it came to knowledge about HPV, 38.6% of participants had low awareness. Over half (51.5%) were working in allied health sciences, and 60.4% reported a monthly income between ₹25,000 and ₹30,000. For many participants (33.7%), friends were their main source of information about HPV. Notably, a vast majority (96%) had never received the HPV vaccine, and 94% had not completed both doses.

The findings of the present study are consistent with those reported by Muhammad Abu baker Tobaiqi. In his research, a large proportion of participants (45.2%) were aged between 18 and 25 years, and just over half (51.3%) were single. While 59.4% had heard of HPV, only 37%

understood that it is a sexually transmitted infection, and 37.4% were aware of its link to cervical cancer. His study also revealed that participants' knowledge and awareness of HPV and the vaccine were significantly influenced by their education level and monthly income.
Findings related to level of knowledge regarding HPV vaccination

In the current study, the results of the pre-test revealed that participants had generally inadequate knowledge about HPV vaccination. The frequency and percentage distribution showed that less than 50% of the participants had a poor level of knowledge, around 50– 75% demonstrated an average level of understanding, and only a small portion more than 75% had good knowledge about the HPV vaccine.

The findings of the current study are consistent with those reported by Muhammad Abubaker Tobaiqi. In his research, which involved 721 participants responding to an online questionnaire, the majority were between 18 and 25 years old (45.2%) and single (51.3%). Although 59.4% had heard of HPV, there was a noticeable lack of in-depth knowledge about the virus and its vaccine. The most frequently cited reason for not getting vaccinated was a lack of awareness. These findings highlight the urgent need for improved education and awareness campaigns to help increase HPV vaccination rates.

Similarly, a study by Sehrish Habib presented a mixed picture. Among the participating doctors, 22.4% were male and 77.6% were female. The group included 20% internists, 35.2% family physicians, 18.8% pediatricians, and 26.1% gynecologists. While 67.2% of the doctors demonstrated good knowledge about HPV and 90.9% had a positive attitude toward recommending the vaccine, only 37.5% actually prescribed it to patients. The main reasons for not recommending the vaccine especially to female patients included the high cost, limited time during appointments, and lack of adequate training or expertise. Despite having positive attitudes, many doctors are still not prescribing the HPV vaccine regularly. This indicates a need to focus on resolving practical barriers in the healthcare system to improve vaccine recommendation and uptake. Findings related to level of Attitude regarding HPV vaccination
The findings of the study showed that out of 101 participants, a large majority 91 individuals (90.1%) had a negative attitude toward HPV vaccination, as indicated by scores above 7.5% on the attitude scale. In contrast, only 10 participants (9.9%) displayed a positive attitude, with scores below 7.5%. These results highlight a significant lack of favorable perception toward HPV vaccination among the faculty at Sharda University, indicating the need for targeted educational initiatives to improve awareness and attitudes.

Similarly, a 2025 study by Sehrish Habib Memon revealed somewhat mixed results. Among the participants, 22.4% were male and 77.6% were female doctors, including 20% internists, 35.2% family physicians, 18.8% pediatricians, and 26.1% gynecologists. While a solid 67.2% of these doctors demonstrated good knowledge about HPV and 90.9% held a positive attitude toward recommending the vaccine, only 37.5% actually prescribed it to their patients. The study identified several key barriers to vaccine recommendation, especially for female patients, including the high cost of the vaccine, limited time during consultations, and a lack of sufficient training or confidence in discussing the topic.

Overall, the study highlights that even though most doctors support the vaccine in theory, actual prescribing practices remain low. This gap suggests a need to overcome these practical challenges in order to improve vaccination rates. The positive attitude among physicians is a strong starting point, and addressing the obstacles can help strengthen the profession's role in HPV prevention

Findings related to association between knowledge score with their selected socio demographic variable
The analysis revealed no statistically significant associations between participants' knowledge levels about HPV vaccination and the selected demographic variables, including age, gender, religion, educational status, professional status, monthly income, source of information, and vaccination status. Although certain groups such as younger participants aged 25–30 years, those with post-graduate education, and allied science professionals tended to show higher levels of knowledge, these differences were not significant. This suggests that knowledge about HPV vaccination is generally low to moderate across diverse demographic segments in the study population. Efforts to improve awareness and education about HPV vaccination should be broad-based and inclusive, targeting all demographic groups to enhance knowledge and ultimately improve vaccination uptake.

A 2022 study by Sreshtha Chowdhury presented different findings. It showed that overall knowledge and practical behavior regarding HPV were lacking only 43.29% of participants had good knowledge, and just 11.82% reported practicing preventive measures. Despite this, the majority (75.88%) had a positive attitude toward the HPV vaccine, with female participants showing more supportive views than males. The study highlighted the critical role of physicians and dentists in raising awareness and encouraging vaccination. It also called for improved medical education and a rethinking of current training methods to better equip healthcare professionals in promoting HPV prevention.

CONCLUSION

The study concluded that the majority of faculty members at Sharda University possess inadequate knowledge and hold predominantly negative attitudes toward HPV vaccination. Most participants were young females aged 25–30, with many unaware of or unvaccinated against HPV. The analysis revealed that nearly 70% had poor knowledge and 90.1% exhibited a negative attitude towards the vaccine. Despite the expectations, no significant association was found between knowledge levels and most demographic variables such as gender, education, and source of information.

The lack of awareness and misinformation highlights the urgent need for educational interventions. Consequently, the development of an information booklet and more targeted awareness programs are recommended to bridge these knowledge gaps and positively influence attitudes, ultimately improving HPV vaccination uptake and reducing HPV- related disease burden.

Implication

The findings of the study have implications for nursing practice, education, administration and research.

Nursing education

The research highlights how important it is to connect key concepts when it comes to understanding and shaping knowledge and attitudes about the HPV vaccine. This is especially important for preparing nurses, who play a critical role in promoting and giving the vaccine, ultimately helping to prevent HPV-related cancers. Nurses are essential in educating the public about HPV, how vaccination can prevent it, and why regular screening matters.

Nursing practice

Health education is a key part of nursing practice. To provide effective education about the HPV vaccine, nurses need to understand what both men and women know and how they feel about it. Nurses play an important role in teaching patients about HPV, how it's linked to cervical cancer, and the benefits of getting vaccinated. This includes explaining how well the vaccine works, how safe it is, and when it should be given.

Nursing administration

Proposals need to be submitted by the nurse administrator, who is also part of the planning committee. When it comes to giving the HPV vaccine, nursing staff must follow proper procedures like knowing the right age to start the vaccine, the correct dosage schedule, how to give it, and how to handle any risks or special precautions. Nurses also play a key role in helping patients and parents understand the benefits and safety of the vaccine, and how it helps prevent diseases caused by HPV.

Nursing research

The questionnaire serves as a starting point for future research. It's important to find ways to improve people's understanding and attitudes toward the HPV vaccine. Researchers may need to focus on educating both men and women about the vaccine and why it's important

Limitations

The study is limited to:

- Single setting only
- The study only assessed the Knowledge and Attitude on HPV vaccination among the faculty of Sharda University, Greater Noida, and Uttar Pradesh with a view to develop information Booklet.
- The study was done with a sample of 101 participants.

Recommendation

Based on the finding of the study the following recommendation is made:

The study can be conducted with large samples so that it can be generalized.

- A similar study can be conducted in different settings.
- More training programs should be implemented to enhance knowledge among both men and women regarding HPV infection, cervical cancer, and Pap smear examinations, hence contributing to a reduction in mortality among the youth.
- Nurses should encourage more HPV vaccination campaigns during their interactions with adolescent girls, older women, and married couples.
- The study can be conucted using various research designs.

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