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ORIGINAL ARTICLE

Human Papilloma Virus as a risk factor for Carcinoma of Cervix: The Gynae Practitioners' View

Shayela Farah[1], Mohoshina Karim[2]

ABSTRACT

Background & objectives: Cancer cervix is the second leading cause of cancer deaths in women worldwide. Human papiloma virus infection (HPV) is the leading cause of cancer cervix which can be detected by cervical screening well before the manifestation of the disease. Awareness among service providers about HPV is the key to successful screening programme. The present study was undertaken to assess the perception about HPV as a risk factor for cervical cancer among Gynae-practitioners.

Methods: This cross-sectional study was conducted on 120 doctors (59 graduate and 61 postgraduate), between April to June 2008 in 5 tertiary hospitals of Dhaka City. There were altogether 15 questions for assessing knowledge level of the respondents. Score '1' was given for each correct response and '0' for each wrong response. The scores obtained by each respondent for each discrete question were then added together to find an integrated score which was then transformed into percentage and was subdivided into 5 categories where 0-20% meant dissatisfactory, 21-40% meant poor, 41-60% more or less satisfactory, 61-80% satisfactory and >80% highly satisfactory knowledge.

Result: The mean age of the respondents was 34.7 ± 7.2 years. Majority (80%) of the respondents was female. Of the 120 respondents, 13.3% obtained DGO, 10% MCPS, 25% FCPS, 2.5% MS. Over 40% of the respondents had 5 or > 5 years of working experience and about 19% had received specific training on HPV. Over one-quarter (25.2%) of the respondents had satisfactory and 4.2% had highly satisfactory level of knowledge about HPV. Moderate and poor level of knowledge comprised 62% and 6.7% respectively. Although age of the respondents was not found to be associated with level of knowledge on HPV infection ($p = 0.212$), female respondents were found more knowledgeable than their male counterparts ($p = 0.002$). No significant difference in knowledge level was found between respondents working for > 10 years and those working for 10 or < 10 years in the Gynae Department ($p = 0.558$). Postgraduate Gynae practitioners had satisfactory level of knowledge significantly more than the simply graduate doctors ($p = 0.047$).

Conclusion: Satisfactory level of knowledge among Gynae practitioners about different aspects of HPV and cervical cancer was poor (30%). Knowledge level was not influenced by age but female practitioners were more knowledgeable than the males. Postgraduation on the concerned subject increases the level of knowledge.

Key words: Human papiloma virus, cervical cancer, level of knowledge, Gynae practitioners.

Introduction

Worldwide cancer cervix is the second leading cause of cancer deaths in women after the breast cancer.[1,2] According to World Health Organization an estimated 500,000 new cases of cervical cancer are diagnosed each year and nearly half of the women die, mostly in Asia, Sub-Saharan Africa and Latin America. WHO cancer research team stated that by 2050 there will be one million new cases of cervical cancer each year in the developing world unless action is taken now to prevent this.[3,4] It is a significant public health problem in Bangladesh as well. This disease burden is primarily due to lack of sustained well-organized screening programme.[5]

The primary risk factor for cervical cancer is infection with certain types of human papilloma virus (type 16, 18, 31, 45, 51 etc.) Human Papilloma Virus (HPV) infection is the most common sexually transmitted disease. Sexual behaviour, particularly age at first intercourse, lifetime numbers of sexual partners and not using barrier contraception are known to affect the risk of developing cervical cancer.[6] It is the cause of virtually more than 90%

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of cases of cervical cancer.[7] Cervical HPV infection affecting an estimated 50-80% of sexually active women at least once in their life time.[8]

Programme cost-effectiveness should be a key guiding principle in making policy choices. Cervical cancer prevention must use a rational public health approach to recruitment, screening and treatment in low-resource settings, concentrating on efficiency in resource utilization where programme objectives can be best met. Analysing the current situation of cervical cancer and it's future impact, we can say the coming days would be really disastrous if measures are not adopted on the priority basis encompassing all the levels of its prevention. So the awareness about HPV as a risk factor is very important among the service-providers especially among the Gynae-practitioners. The present cross-sectional study was an opinion-seeking endeavor from Gynae-practitioners about HPV as a cause of cervical cancer and risk factors for transmission of HPV.

Methods

This cross-sectional study was conducted between April to June 2008 in 5 tertiary hospitals of Dhaka City. The hospitals were Dhaka Medical College, Sir Salimullah Medical College & Mitford Hospital, Bangabandhu Sheikh Mujib Medical University, Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM), Holy Family Medical College & Hospital. A total of 120 respondents - 59 graduate and 61 postgraduate doctors with specialty in Gynae & Obstetrics were purposively selected from these institutes. A self - administered questionnaire (both open - and close-ended) containing the variables of interest were introduced for evaluating knowledge of the respondents about HPV. The level of knowledge was measured using Likert Scale Score. There were altogether 15 questions for assessing knowledge level of the respondents. Score '1' was given for each correct response and '0' for each wrong response. The scores obtained by each respondent for each discrete question were then added together to find an integrated score out of 15. The total score thus obtained by the respondents were transformed into percentage and was subdivided into 5 categories where 0-20% meant dissatisfactory, 21-40% meant poor, 41-60% more or less satisfactory (moderate), 61-80% satisfactory and > 80% highly satisfactory level of knowledge.

Statistical analysis was performed with the help SPSS (Statistical Package for Social Sciences) version 11.5 using descriptive and analytical statistics. The descriptive statistics used were frequency with corresponding percentages and mean with standard deviation from the mean. The analytical test used to find the factors influencing knowledge of the respondents was Chi-square Probability Test. The level of significance was set at 0.05 and $p < 0.05$ was considered significant

Result

The mean age of the respondents was 34.7 ± 7.2 years and the youngest and the oldest respondents were 22 and 53 years old respectively. Majority (80%) of the respondents was female with male to female ratio being 1:4 (Table I). In terms of professional position, 45.8% was medical officer, 25.8% honorary medical officer, 14.2% registrar, 8.3% internee doctor and 5.8% clinical assistant. Of the 120 respondents, 13.3% obtained DGO, 10% MCPS, 25% FCPS, 2.5% MS. Over one-quarter (27.5%) completed FCPS-Part I, 11.7% MS-Part I, 1.7% MS-Part II and and 8.3% others (Table II). Nearly 60% of the respondents had < 5 years of working experience in Gynae and Obstetrics, about one-quarter (24.2%) had 5 - 10 years, 12.5% 10 - 15 years, 2.5% 15 - 20 years and another 2.5% 20 or > 20 yrs. experience (Fig. 1).

Table I. Distribution of respondents by demographic characteristics (n=120).

Age Group (years)	Frequency	Percentage
< 30	35	29.2
31-34	21	17.5
35-39	30	25.0
40-44	24	20.0
> 45	10	8.3
Sex		
Male	24	20.0
Female	96	80.0

* Mean age = (34.7±7.2) years; range = (22-53) years.

Table II. Distribution of respondents by current position (n=120).

Respondents profile	Frequency	Percentage
Current professional position		
Medical officer	55	45.8
Honorary medical officer	31	25.8
Internee doctor	10	8.3
Clinical assistant	07	5.8
Registrar	17	14.2
Postgraduation status		
DGO	16	13.3
MCPS	12	10.0
FCPS	30	25.0
MS	03	2.5
FCPS-Part I	33	27.5
MS-Part I	14	11.7
MS-Part II	02	1.7
Others	10	8.3

About 19% of the respondents had received specific training on HPV. In response to a question what type of virus HPV was, 19.2% told single stranded DNA virus, 76.7% told double-stranded DNA virus (correct) and 4.2% single-stranded RNA virus. Further asked whether carcinoma of cervix could occur in the absence of

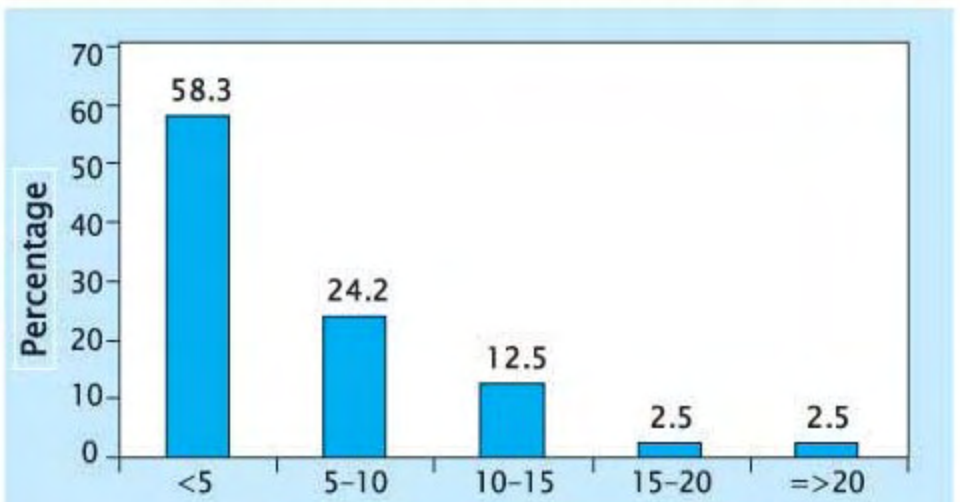

Fig. 1: Distribution of respondents by years of experience in Gynae

HPV, majority (86.7%) of them opined that it could, 10.8% told it could not and 2.5% refrained from answering the question (Table III). Majority mentioned multiple sex partners and early sexual intercourse as the risk factors of carcinoma cervix (99.2% and 95.8% respectively). Infertility and drug-use were also claimed as the risk factors by 3.3% and 14.2% of the respondents respectively. In another question, which type of cancer cervix commonly occur, 90% of the respondents told squamous cell and 10% told basal cell carcinoma (Table IV).

Table III. Distribution of respondents by knowledge about HPV (n=120).

Knowledge about HPV	Frequency	Percentage
Specific training related to HPV received		
Yes	22	18.3
No	98	81.7
Type of virus		
Single standard DNA virus	23	19.2
Double standard DNA virus	92	76.7
Single standard RNA virus	05	4.2
Carcinoma of cervix occur in absence of HPV		
Yes	104	86.7
No	13	10.8
Don't know	03	2.5
Risk factors of carcinoma of cervix		
Multiple sex partners	119	99.2
Infertility	04	3.3
Early sexual intercourse	115	95.8
Drug	17	14.2
Common type of cancer of cervix		
Basal cell carcinoma	12	10.0
Squamous cell carcinoma	108	90.0

Table IV. Distribution of patients by HPV findings (n=120).

Relevant information about HPV	Frequency	Percentage
Type of HPV causes carcinoma of cervix		
Type 16	98	81.7
Type 6	05	4.2
Type 41	04	3.3
Type 42	13	10.8
HPV infects		
Pancreas	07	5.8
Colon	29	24.2
Anus	63	52.5
Rectum	21	17.5
Vulnerable age for HPV infection (years)		
10 - 15	02	1.7
20 - 25	48	40.0
35 - 50	70	58.3
HPV-18 persists longer than HPV-16		
Yes	37	30.8
No	83	69.2
Mode of transmission of HPV infection		
Transmission to the baby at the time of birth	24	20.0
Through blood	35	29.2
Sexually transmitted disease	113	94.2
Fomite-borne disease	01	0.8

Table V shows the distribution of the respondents by knowledge about some relevant information about HPV. Responses given against carcinoma cervix caused by type of HPV were classified as type16 (81.7%), type 6 (4.2%), type 41 (3.3%) and type 42 (10.8%). In terms of sites infection of HPV, 5.8% told pancreas, 24.4% colon, 52.5% anus and 17.5% rectum. In another

question what factors make women vulnerable to HPV, nearly 60% told middle age (35 - 50 years). Approximately 30.8% of the respondents opined that HPV-18 persists longer than HPV-16 and the rest 69.2% held the opposite view. About latency period of HPV infection, 16.7% told 1 month, 20% 1 year, 38.3% 1 month to 1 year and 25% 3 months to 2 years (Fig. 2). Asked about the mode of transmission of HPV infection, about 95% of the respondents told via sexual intercourse, 29.2% through blood transfusion, 20% told it could transmit from mother's genital tract to the baby at the time of birth (Table VI).

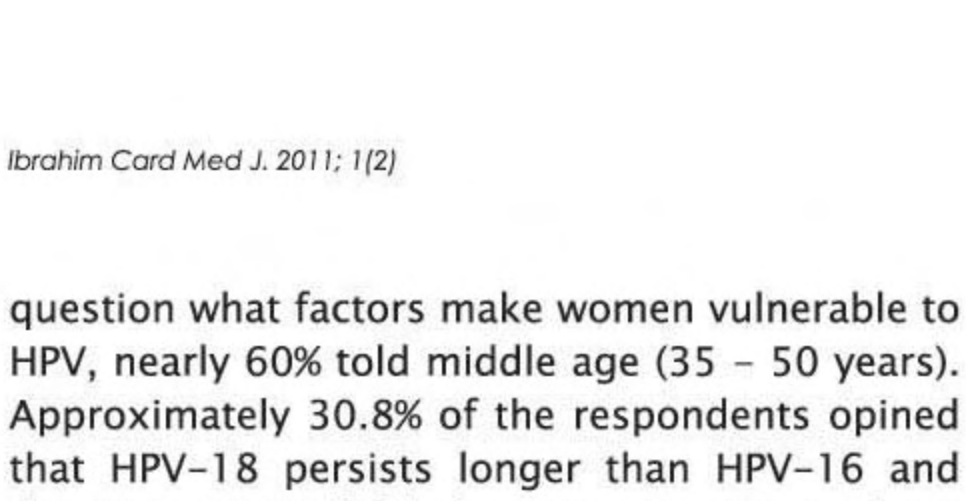

Fig. 2: Distribution of respondents by latency period of HPV infection

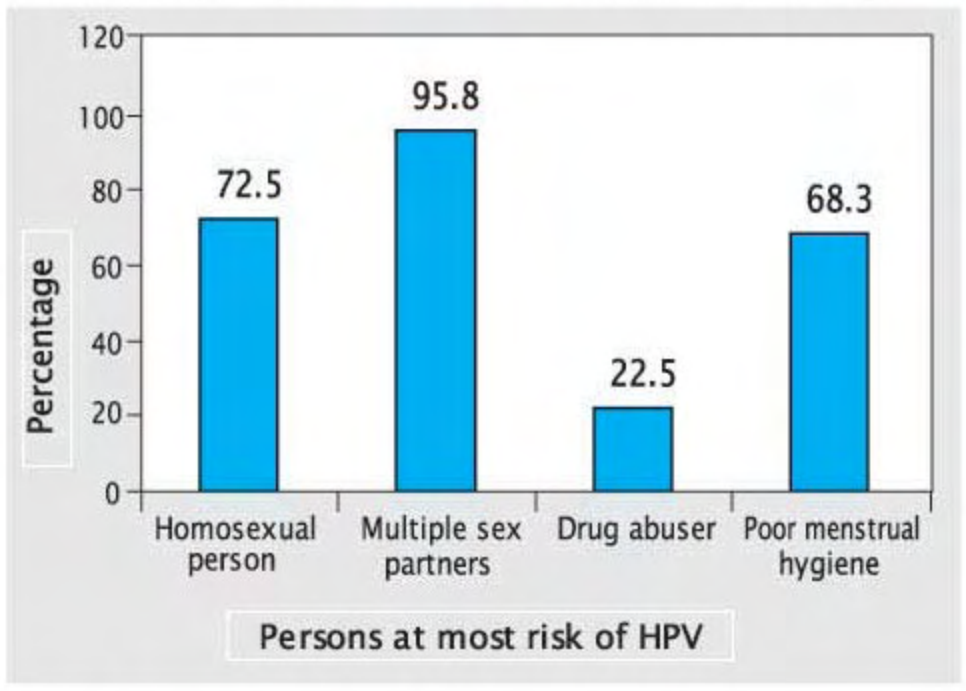

Fig. 3: Persons at most risk of HPV (n = 120).

Table V: Distribution of patients by prognosis of HPV infection (n = 120).

Prognosis of HPV infection	Frequency	Percentage
Curable	99	82.5
Non-curable	19	17.5
Don't know	02	1.8

In response to a question who were at most risk of acquiring HPV, 72.5% of the respondents informed homosexual person, 95.8% mentioned multiple sex partners, 22.5% drug abusers and 60% poor menstrual hygiene (Fig. 3). In response to a question who were at most risk of HPV, 72.5% of the respondents informed homosexuals, 95.8% mentioned multiple sex partners, 22.5% told drug abusers and 60% told it affects women with poor menstrual hygiene (Fig.3). About prognosis of HPV infection, over 82.5% informed that HPV infection was curable, 17.5% opined that the infection was non-curable with persistence of infection and 1.8% did not hold any view (Table V). Over one-quarter (25.2%) of the respondents had satisfactory and only 4.2% had highly satisfactory level of knowledge about HPV. Over 62% had more or less satisfactory and 6.7% had poor level of knowledge (Fig. 4).

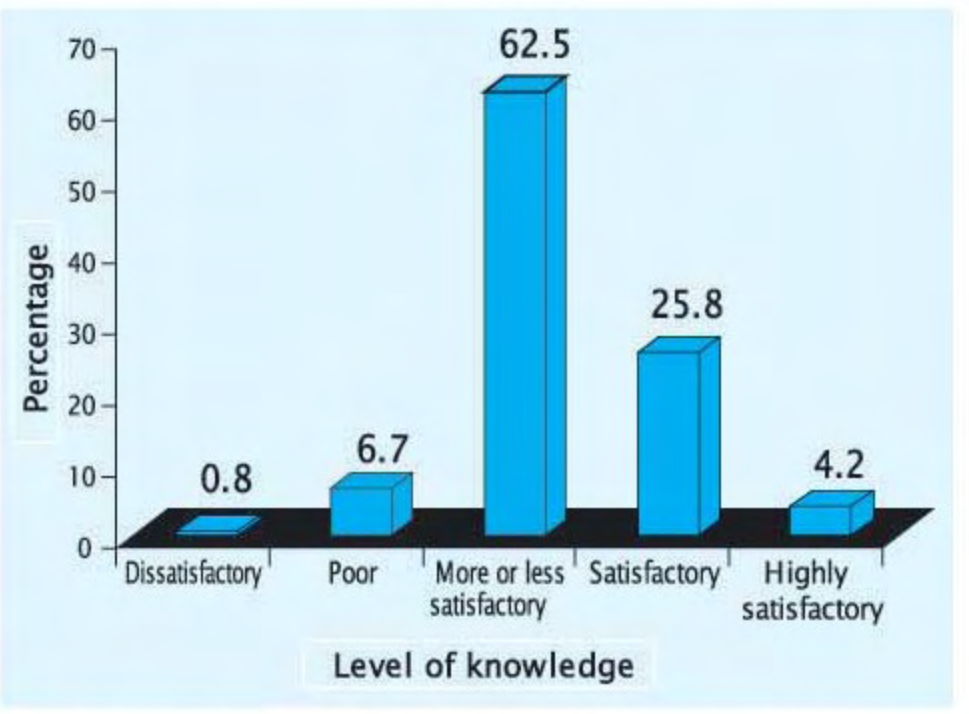

Fig. 4: Respondents' level of knowledge about HPV (n = 120)

Age of the respondents was not found to influence the level of knowledge regarding HPV infection (p=0.212). However, female respondents were more knowledgeable than their male counterparts (p=0.002). (Table VI). No significant difference in knowledge level was observed between respondents working for > 10 years and the respondents working for 10 or < 10 years in the Gynae Department suggesting that working experience in the concerned subject is not associated with knowledge level of the respondents (p = 0.558) (Table VII) demonstrates that. Respondents with postgraduation degree had satisfactory and highly satisfactory level of knowledge significantly more than the respondents having graduation degree only (p = 0.047).

Table VI. Association between demographics and level of knowledge.

Demographic characteristics	Level of knowledge		p-value#
	Satisfactory & highly satisfactory (n=36)	Not satisfactory (n = 84)	
Age (yrs)			
< 35	17(47.2)	48(57.1)	0.212
⩾ 35	19(52.8)	36(42.9)	
Sex			
Male	1(2.8)	23(27.4)	0.002
Female	35(97.2)	61(72.6)	

Figures in the parentheses denote corresponding percentage.
Chi-square (χ^2) Test was employed to analyse the data.

Table VII: Association between academic qualification & experience in gynae and level of knowledge.

Academic qualification & experience in Gynae	Level of knowledge		p-value#
	Satisfactory & highly satisfactory (n = 36)	Not satisfactory (n = 84)	
Working experience (yrs)			
< 10	31(86.1)	73(86.9)	0.558
⩾ 10	5(13.9)	11(13.1)	
Academic degree			
Graduate	13(36.1)	46(54.8)	0.047
Postgraduate	23(63.9)	38(45.2)	

Figures in the parentheses denote corresponding percentage.
#Chi-square (χ^2) Test was employed to analyse the data

Discussion

The present study, intended to assess the perception of Bangladeshi Gynae practitioners about HPV as a risk factor for carcinoma cervix, is by far the first study in the context of our country. Majority of the respondents was female giving a male to female ratio of 1:4. The mean age was 34.7 ± 7.2 years. Current professional position of the respondents demonstrates that 45.8% was medical officer, 25.8% honorary medical officer, 14.2% register, 8.3% internee doctor and 5.8% clinical assistant. In terms of postgraduation status, 13.3% obtained DGO, 10% MCPS, 25% FCPS, 2.5% MS. About 20% of the respondents had specific training on HPV. Majority (86.7%) of the respondents was of the opinion that carcinoma cervix could occur even in the absence of HPV infection. Of the demographic factors, age of the respondents was not found to be associated with their level of knowledge about HPV, but female respondents were more knowledgeable than their male counterparts. While years working experience on Gynae was not emerged as determinant of knowledge of the respondents, obtaining academic degree on the concerned subject enriches the level of knowledge on HPV.

Jasmin et al[9] in a study in the United States demonstrated that awareness of HPV has increased over the past decade, but knowledge of its link to cervical cancer remains low. The earliest study conducted on medical students about HPV knowledge identified that 13% had ever heard of HPV and only 8% of them knew that it was associated with cervical cancer.[10] In 2000, a population-based survey of women aged 18 to 65 years living in the US found that only 28% had ever heard of HPV and 41% of them knew that it was sometimes associated with cervical cancer.[11] This low level of knowledge is consistent with findings from other studies of US adult women,[12-15] and is not surprising given that the HPV DNA test was recommended for primary cervical cancer screening programme in 2002 to 2003.[1,2] Although HPV is the most common sexually transmitted infection (STI) in the US, most infections are transient (median duration, 8 months); thus, most women probably do not receive treatment, and therefore, miss an opportunity to learn about the consequence of infection from a health care provider. In this study 72.5% of the respondents informed that homosexual persons were at risk of acquiring cervical cancer, 95.8% mentioned multiple sex partners, 22.5% drug abusers and 68.3% poor menstrual hygiene (Fig.3). In a study, conducted by Campana[16] in 1995 it was found that the attributable risks for cervical cancer were multiple sex partners (38%) and early age at first intercourse (25%).

Another study conducted by Philips and associates[17] reported young women's knowledge of cervical cancer risk factors. For those offering four or fewer risk factors, multiple partners and family history of cervical cancer were those most frequently chosen, and 46.1% of this group identified both. When women identified more than four factors, these first two continued to be chosen, although others were reported with increasing frequency. Of those on their list, the major risk factors for cervical cancer accepted by

authorities such as the American Cancer Society (American Cancer Society, 2001) and the NHS Screening Program (NHS Cancer Screening Programs, 2001) are smoking, age at first intercourse, multiple sexual partners and HPV infection. These were all in the 'top five' identified by the full sample. Understandably, identifying HPV as a risk factor was significantly more common amongst those who had heard of it.

Before going to conclusions some limitations of the study deserve mention. No such study was done before on Bangladeshi doctors and as such, it is difficult to compare the findings of the study with others. As the study was conducted in some selected institutes of Dhaka city, the findings cannot be generalized. The study revealed that there are many aspects of HPV in which knowledge is inadequate or misinformed. The development of HPV prevention and health promotion programs largely depends on health care providers and therefore the issue should be addressed accordingly.

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