Asian J. Med. Biol. Res. 2020, 6 (4), 714-722; doi: 10.3329/ajmbr.v6i4.51238

Asian Journal of Medical and Biological Research
ISSN 2411-4472 (Print) 2412-5571 (Online)
www.ebupress.com/journal/ajmbr

Article

Human papillomavirus vaccination coverage among working women

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Received: 15 November 2020/Accepted: 26 December 2020/ Published: 31 December 2020

Abstract: Human papillomavirus (HPV) infection is one of the causes of cervical cancer which is preventable. The study was a cross-sectional study with the objective was to determine the Human papillomavirus (HPV) vaccination coverage among working women. A total 236 educated working women were selected purposively from different working places in Dhaka city. A pretested semi- structured questionnaire was used for data collection. The knowledge was assessed by using modified Blooms cut off points which was developed with cervical cancer and vaccine knowledge related questions. The study result revealed that among 236 working women 71.2% knew about the risk factor of cervical cancer. It was found that 92.8% knew about the way of prevention of cervical cancer respectively. The overall knowledge on cervical cancer and vaccine was found to be having good knowledge 21.2%, satisfactory knowledge 41.9% and poor knowledge 36.9%. Out of the total working women only 5.1% had HPV vaccination coverage. Reason behind non vaccinations, 50% mentioned had no knowledge about vaccine, 35.3% mentioned can't decide and 8.9% mentioned high cost of vaccine. Significant association has been observed in between vaccination coverage with over all knowledge of cervical cancer (p value .04). It may be concluded that HPV vaccination coverage is very low which needs awareness program on this issues through mass media, educational session, counseling and so on to reduce human papillomavirus associated cancers as well as economic burden.

Keywords: human papillomavirus (HPV); vaccination; vaccination coverage; working places; working women

1. Introduction

Human papillomavirus (HPV) infection is the most common sexually transmitted infection both globally and nationally. It is an infection with a significant public health impact, contributing to the development of a variety of cancers, including cervical squamous cell carcinoma, cervical adenocarcinoma, anal cancers, vulvar, vaginal, and penile cancers, and oral and pharyngeal cancers. While there is no cure for HPV infection, the HPV vaccine has been proven to be a highly efficacious tool for prevention and this vaccination has the potential to decrease substantial health and economic burdens caused by HPV associated disease. However, rates of vaccination among both females and males remain exceedingly low all over the world.

HPV infection is a necessary cause of cervical cancer, but it is not a sufficient cause. Promiscuous sexual behavior (e.g. large number of sexual partners) has been clearly established as a predominant risk factor for acquiring genital HPV infection. The role of the 'male factor': the male partners' lifetime sex partners should not be neglected as risk. Men having regular intercourse with female sex workers (who can be regarded as reservoirs of HR-HPV) may be considered as vectors carrying the virus to their wife's, thus place them at

increased risk of developing cervical cancer (Marek *et al.,* 2011). The human papillomavirus (HPV) infection is one of the most prevalent sexually transmitted disease (STD). The prevalence of genital HPV infection in young women has been estimated to range between 20% and 46% in various countries, but some studies suggest the potential lifetime risk of infection to be around 60% or greater (Koutsky, 1997; Ho *et al.,* 1998). According to Boscoe *et al.,* 2014, in United States, on average, 2375 New York State residents are diagnosed with an HPV-related cancer each year, nearly two-thirds of whom are women .Cervical cancer alone accounts for 35.3% of all HPV-related cancers and for 55.6% of the total number of HPV-related cancers among women (Jemal *et al.,* 2013). Different studies showed the high prevalence of HPV infection worldwide. The estimated prevalence of HPV infection in the Hungarian female population is approximately 17.6%, with the highest rates occur in sexually active women among 17-22 year olds (Parkkinen *et al.,* 1986).

According to the International Agency for Research on Cancer (IARC), India has the highest number of cervical cancer cases in the world. There are an estimated 132000 new cases and 74,000 deaths each year which occur due to cervical cancer in India (Laikangbam *et al.,* 2007). According to International Agency for Research on Cancer (2007), sexually transmitted infection with human papillomavirus (HPV) is fundamental to the development of carcinoma of the cervix. HPV prevalence increases with multiple sexual partners and poor genital hygiene. Of the 100 HPV types, 18 have been categorized as high-risk types for cervical cancer, while the rest are low-risk type. Cervical cancer caused by human papillomavirus (HPV) is the most common form of cancer in developing countries and the second most common form of cancer in the world as a whole. Almost 80% of cervical cancer occurs in the developing countries. Bangladesh and India have annual incidence of cervical cancer of 11956 and 12595 respectively.

According to the World Health Organization (WHO) statistics, incidence of cervical cancer cases in Bangladesh has been estimated at 167 per 100000 populations and 6582 women die every year in the country for this cancer (Khatun *et al.,* 2011). In Bangladesh: Human Papillomavirus and Related Cancers, Fact Sheet 2016, Bangladesh has a population of 56.51 million women ages 15 years and older who are at risk of developing cervical cancer.

The recent introduction of a vaccine to prevent HPV infection offers the hope of the potential elimination of many HPV associated cancers in the future. Cervical cancer ranks as the 2nd most frequent cancer among women in Bangladesh and the 2nd most frequent cancer among women between 15 and 44 years of age. Data is not yet available on the HPV burden in the general population of Bangladesh and also the vaccination coverage for cervical cancer. Very few studies have focused on vaccination coverage for cervical cancer and knowledge or awareness related factors about this issue.

Although cervical cancer is the second most common female cancer in our country, but still no significant study have found about human papillomavirus vaccination coverage in our country and relatively very few study have done yet about this issue in our country. Therefore this cross sectional study has undertaken among educated working women with the objective to determine the human papillomavirus vaccination coverage such as knowledge about cervical cancer and vaccine of the respondents.

2. Materials and Methods

2.1. Ethical implication

Ethical approval of the research was taken from Institutional Review Board (IRB) of NIPSOM in due time. All the information collected for the study was utilized only for the purpose of research and was not disclosed to anyone outside the research team. After explaining the purpose and procedure of the study verbal consent was taken from all participating respondents. The participation was completely voluntary. Their right to refuse to participant in the study (if they wished so) was respected. Each respondent was interviewed separately and the study was not involved any physical, mental, societal risk to the participants.

2.2. Study Design

This was a cross sectional study.

2.3. Study population

The study population was graduate and above working women (n=236).

2.4. Study period

The study was conducted from 1st January, 2016 to 31st December, 2016.

a) Study place

The study was conducted in purposively selected different working places in Dhaka city, which includes Dhaka Medical College Hospital, Bangabandhu Sheikh Mujib Medical University, Khilgaon Sonali

Bank Ltd, Motijeel Sonali Bank Ltd, Fakirapul Sonali Bank Ltd, Motijeel Govt. Girls High School, National Ideal School Khilgaon, Modern Public School and College Khilgaon, Sunrise School Khilgaon, and Adorsho School Khilgaon.

b) Sampling method

Purposive sampling technique was used for sample selection. Sample sizes was 236.

c) Inclusion criteria:

- Working women in the study places
- Age between 22 to 45 years women irrespective of religion
- Educational qualification graduate and above
- Voluntary participation

d) Exclusion criteria:

- Working women who were on leave during data collection.
- Working women those who were very busy with their schedule.
- The working women who have any visual, hearing, speech problem and cognitive impairment.

e) Tool of the study: A Semi-structure questionnaire was developed according to objective and variables. The questionnaire was based on literature review. The questionnaire was divided into three parts, which includes i) socio-demographic characteristics of the respondents ii) knowledge of the respondents regarding cervical cancer iii) questionnaire related to receiving human papillomavirus vaccine by the respondents. Questionnaire was prepared in local language bangle. Before finalizing pretest of questionnaire was done. Data from the respondents were collected through face-to-face interview. The collected data were processed and analyzed by SPSS IBM Version 21 software.

3. Results

By non-probability purposive sampling 236 respondents were selected and data were collected by face to face interview using semi-structured questionnaire. The demographic characteristics of the respondents were shown in Table 1.

Table 1. Demographic characteristics of the respondents (n=236).

Age group(In years)	**Frequency**	**Percentage**
≤25	19	8.1
26-29	71	30.1
30-33	56	23.7
34-37	47	19.9
≥38	43	18.2
Mean±SD =32.1±5.38		
Marital status		
Married	178	75.4
Unmarried	50	21.2
Separated	3	1.3
Divorced	5	2.1
Educational qualification		
Graduation	114	48.3
Above graduation	122	51.7
Working women according to occupation		
Teacher	79	33.5
Nurse	56	23.7
Banker	54	22.9
Doctor	47	19.9
Fathers or husbands occupation		
Service	158	66.9
Business	67	28.4
Farmer	11	4.7
Monthly personal income (in Taka)		
Tk ≤ 16000	33	14.0
Tk 16001-32000	108	45.8
Tk 32001-48000	77	32.6
Tk>48000	18	7.6

Mean±SD	30533.9±13810.6	
Working women by the number of children		
1 child	60	37.5
2 children	92	57.5
3 children	5	5.0
Area of residence		
Dhanmondi	43	18.2
Shahbag	51	21.6
Farmgate	24	10.2
Motijeel	35	14.8
Kamlapur	30	12.7
Khilgaon	53	22.5
Total	236	100.0

Table 1 shows the mean age of the working women was 32.1±5.38) years with minimum age 22 years and maximum 45 years and among them 75.4% (n=178) were married, 21.2% (n=50) were unmarried, 2.1% (n=5) were divorced and 1.3% (n=3) were separated. Out of 236 working women 48.3% (n=118) was graduate and 51.7% (n=128) working women's educational qualification was above graduation and among them 33.5% (n=79) were teacher, 23.7% (n=56) were nurse, 22.9% (n=54) were banker and 19.9% (n=47) were doctor. From the total respondents, 66.9% (n=158) working women's fathers or husbands occupation were service, 28.4% (n=67) occupation were business and only 4.7% (n=11) occupation were farming. It was found that, 45.8% (n=108) working women's monthly personal income was 16001-32000 taka, 32.6% (n=77) working women's monthly personal income was 32001-48000 taka, 14.0% (n=33) working women's monthly personal income was ≤ 16000 taka and7.6% (n=18) working women's monthly personal income was>48000 taka respectively. The monthly personal income (Mean±SD) of working women was 30533.9±13810.6) taka, with the range of 3000 taka to 100000 taka. Out of 160 respondents, 57.5 % (n=92) working women had 2 children, 37.5% (n=60) working women had 1 child and 5.0% (n=5) working women had 3 children. Here, 22.5 % (n=53) working women's were from Khilgaon, 21.6% (n=51) working women's were from Shahbag, 18.2% (n=43) working women's area of residence were Dhanmondi, 14.8% (n=35) working women's area of residence were Motijeel, 12.7% (n=30) working women's area of residence were Kamlapur and 10.2% (n=24) working women's area of residence were Farmgate.

Table 2. Distribution of the working women by their knowledge and concept about cervical cancer, way of prevention and importance of cervical cancer vaccination (n=226).

Concept about cervical cancer	**Frequency**	**Percentage**
Abnormal cell growth on cervix	83	35.1
One kind of cancer that occur in cervix	112	47.4
Caused by human papillomavirus	21	8.9
All of the above	10	4.2
Knowledge about the way of prevention of cervical cancer		
Know	219	92.8
Don't know	17	7.2
Importance of cervical cancer vaccination		
Cervical cancer is prevented by vaccine	164	69.5
Don't know	72	30.5
Total	236	100.0

Table 2 shows out of 226 working women, 47.4 % (n=112) think cervical cancer is one kind of cancer that occur in cervix, 35.1% (n=83) think abnormal cell growth on cervix, 28.9% (n=21) think it is caused by human papillomavirus and 4.2% (n=10) mentioned about all the points about cervical cancer and among them 92.8% (n=219) know about the way of prevention of cervical cancer and 7.2% (n=17) don't know about the way of prevention of cervical cancer. From the respondents, 69.5% (n=164) mentioned about the importance of cervical cancer vaccine is that it can prevent cervical cancer and 30.5% (n=72) don't know about the importance of cervical cancer vaccination.

Table 3. Distribution of the working women according to their knowledge about the symptoms and risk factors of cervical cancer (n=199).

Knowledge about the symptoms of cervical cancer	**Frequency**	**Percentage**
1 correct response	128	64.3
2-3 correct responses	38	19.0
4-5 correct responses	33	16.6
Knowledge about the risk factors of cervical cancer		
Know	168	71.2
Don't know	68	28.8
Total	236	100.0

Table 3 shows that out of 199 working women who know the symptom of cervical cancer. Here, 64.3% (n=128) know 1 correct symptom, 19.0% (n=38) know 2-3 correct symptoms and 16.6% (n=33) know 4-5 correct symptoms of cervical cancer and among them, 71.2% (n=168) know about the risk factors of cervical cancer and 28.8% (n=68) don't know about the risk factors of cervical cancer.

Table 4. Distribution of the working women by their sources of information about cervical cancer vaccine, knowledge about the probable age to be affected and appropriate age of cervical cancer vaccination (n=175).

Sources of information about cervical cancer vaccine	**Frequency (f)**	**Percentage (%)**
Doctor	51	29.1
Health workers	20	11.4
Friends / colleagues	25	14.3
Mass media (Radio, television, newspaper)	79	45.1
Probable age to be affected by cervical cancer		
After 30 years	175	74.2
Before 30 years	2	.8
Don't know	59	25.0
Appropriate age of cervical cancer vaccination		
9-26 years	113	47.9
Before 9 years of age	6	2.5
After 26 years of age	23	9.7
Don't know	94	39.8
Total	236	100.0

Table 4 shows the distribution of working women by their knowledge about sources of information about cervical cancer. Out of 175 working women 45.1% (n=79) said that they heard about cervical cancer vaccine from mass media (radio, television, newspaper), 29.1% (n=51) heard about cervical cancer vaccine from doctors, 14.3% (n=25) heard about cervical cancer vaccine from friends / colleagues and 11.4% (n=20) heard from health workers respectively. Here,74.2% (n=175) working women mentioned about the probable age of cervical cancer to be affected after 30 years and only .8% (n=2) mentioned before 30 years is the probable age to be affected by cervical cancer and25.0 % (n=59) working women mentioned do not know about the probable age of cervical cancer and out of 236 working women 47.9% (n=113) said the appropriate age of cervical cancer vaccine is 9-26 years, 9.7% (n=23)said about the appropriate age of cervical cancer vaccine is after 26 years and 2.5% (n=6) said about the appropriate age of cervical cancer vaccine is before 9 years of age. 39.8% (n=94) said that they don't know about the appropriate age of cervical cancer vaccine.

Table 5. Distribution of the working women by their knowledge about the dose, number of dose, schedule and Overall knowledge about cervical cancer and vaccine (n=236).

Knowledge about the dose of cervical cancer vaccine	**Frequency**	**Percentage**
Know the dose	77	32.6
Don't know the dose	159	67.4
Knowledge about the number of doses about cervical cancer vaccine.		
1 dose	3	3.9
2 doses	6	7.8
3 doses	68	88.3
Knowledge about the schedule of cervical cancer vaccine		
1st dose any time after 9 years	2	0.8
2nd dose after one month of 1st dose	8	3.4
3rd dose after six months of 2nd dose	7	3.0
All of the above	22	9.3
Don't know about the schedule	197	83.5
Overall knowledge about cervical cancer and vaccine		
Good knowledge	50	21.2
Satisfactory knowledge	99	41.9
Poor knowledge	87	36.9
Total	236	100.0

Table 5 shows out of 236 working women 67.4% (n=159) don't have the knowledge about the dose of cervical cancer vaccine and 32.6% (n=77) know about the dose of cervical cancer vaccine, 88.3% (n=68) working women said the dose of cervical cancer vaccine is 3 doses, 7.8% (n=6) said about 2 doses and 3.9% (n=3) said about 1 dose. That means among 77 working women who know the dose of cervical cancer vaccine 88.3% (n=68) know the correct dose and that is 3 doses and 83.5% (n=197) working women had no knowledge about the schedule of cervical cancer vaccine. 9.3% (n=22) mentioned about the schedule of cervical cancer vaccine is 1st dose any time after 9 years, 2nd dose after one month of 1st dose and 3rd dose after six months of 2nd dose. That means about the schedule of cervical cancer vaccine 29.3% (n=22) know the correct schedule of cervical cancer vaccine. Out of 236 working women 41.9% (n=99) had satisfactory knowledge, 36.9% (n=87) had poor knowledge and 21.2% (n=50) had good knowledge about cervical cancer and vaccine.

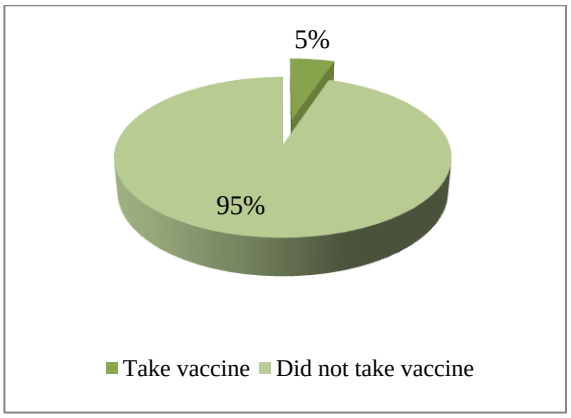

Figure 1. Taking of human papillomavirus (n=236).

Above pie diagram shows the working women those who had taken vaccine against human papillomavirus. Here, 5.1% (n=12) working women are vaccinated against human papillomavirus and 94.9% (n=224) did not vaccinated against human papillomavirus (Figure 1).

Table 6. Association between the occupation and overall knowledge regarding cervical cancer and vaccine of working women (n=236).

Occupation	Overall knowledge regarding cervical cancer and vaccine			Total
	Good knowledge	Satisfactory knowledge	Poor knowledge	
	n (%)	n (%)	n (%)	n (%)
Teacher	7 (8.9)	27 (34.2)	45 (56.9)	79 (100.0)
Banker	3 (5.5)	21 (38.9)	30 (55.5)	54 (100.0)
Nurse	21 (37.5)	28 (50.0)	7 (12.5)	56 (100.0)
Doctor	19 (40.4)	23 (48.9)	5 (10.6)	47 (100.0)
Total	50 (21.2)	99 (41.9)	87 (36.9)	236 (100.0)

$\chi 2$ =24.5, df=6, p=0.031

Table 6 shows the association between occupation and overall knowledge regarding cervical cancer and vaccine. Out of 236 respondents, overall knowledge regarding cervical cancer 8.9% teacher had good knowledge, 34.2% had satisfactory knowledge and 56.9% had poor knowledge. 5.5% banker had good knowledge, 38.9% had satisfactory knowledge, and 55.5% had poor knowledge, among the nurses 37.5% had good knowledge, 50% had satisfactory knowledge, 12.5% had poor knowledge. Within the doctors, 40.4% had good knowledge, 48.9% had satisfactory knowledge and 10.6% had poor knowledge. Here calculated Pearson $\chi 2$ =24.5, df=6, p=.031. Based on this result, overall knowledge regarding cervical cancer and vaccine had a significant association with the occupation of working women.(since p value < .05).

Table 7. Association between the vaccination coverage and overall knowledge regarding cervical cancer and vaccine of working women (n=236).

Vaccination coverage	Overall knowledge regarding cervical cancer			Total
	Good knowledge	Satisfactory knowledge	Poor knowledge	
	n (%)	n (%)	n (%)	n (%)
Vaccinated	7 (58.4)	4 (33.3)	1 (8.3)	12 (100.0)
Not vaccinated	43 (19.2)	95 (42.4)	86 (38.4)	224 (100.0)
Total	50 (21.2)	99 (41.9)	87 (36.9)	236 (100.0)

$\chi 2$ =16.1, df=2, p=0.04

Table 7 shows the association between vaccination coverage and overall knowledge regarding cervical cancer and vaccine. Out of 12 vaccinated respondents, 58.4% had good knowledge, 33.3% had satisfactory knowledge and 8.3% had poor knowledge. Out of 224 not vaccinated respondents, 19.2% had good knowledge, 42.4% had satisfactory knowledge and 38.4% had poor knowledge. Here $\chi 2$ =16.1, df=2, p=0.04.The result shows overall knowledge regarding cervical cancer had a significant association with the vaccination coverage of the working women (since p value < 0.05).

4. Discussion

The study result revealed that among 236 working women the mean age was 32.1±5.38 years, with a range of 22 to 45 years. More than one quarter (30.1 %) of the working women were in 26-29 years age group, 23.7 % were in 30-33 years age group, 19.9% were in 34-37 years 18.2% were in ≥38 years and 8.1% were in ≤25 year's age group. Similar study was conducted among the nursing staff, where 52% belonged to the age group of 41–50 years with a mean age of the study population was 46 years (Shah *et al.,* 2012). The mean age of that study was much higher than the present study. This dissimilarity may be due to selection criteria of the respondents in both studies. More than three fourth 83.5% were Muslim and 15.3% were Hindu and 1.3% were Christian. Similar findings in religious distribution were observed in the study, Nurun *et al.,* 2014, where 90% respondents were Muslim. This similarity is because both the studies were conducted in Bangladesh where majority population belongs to the religion Islam.

Almost three fourth 75.4% were married, 21.2% were unmarried, 1.3% were separated and 2.1% were divorced. About marital status close findings were found by Shah *et al.,* 2012, where they showed majority of respondents 89% was married. The similarity in the findings on marital status can be explained by the age of the respondents. These results support normal age of marriage in this subcontinent.

Since this study was conducted among graduate working women, about educational qualification it was observed that 51.7% educational qualification was above graduation and 48.3% were graduate. Dissimilar scenario was observed in the study of Bangladesh conducted by Fahmida *et al.,* 2015, where 37.01% participants were educated up to secondary level and 21.26% were illiterate. This dissimilarity is due to the selection criteria of the respondents in the study. As because present study was conducted among educated working women, and that study respondents were patients attending in a tertiary care hospital.

The present study shows respondents occupational categories were teacher, banker, nurse and, doctor within the category it was found 33.5% were teacher, 23.7% were nurse; 22.9%were banker and 19.9% were doctor. According to the study Fahmida *et al.*, 2015, about the occupation, 77.1% respondents were housewives, 6.7% were in office job, 8.46% were garments worker. In present study the respondents were working women, that is the reason of the variability in the occupation in between these studies.

Out of 236 working women majority (84.3%) know about the symptoms of cervical cancer and it was found that those who know about the symptoms of cervical cancer, 64.3% know at least one correct symptom, 19.0% and 16.6% know 2-3 correct symptoms and 4-5 correct symptoms of cervical cancer respectively. Another study of Bangladesh titled "Knowledge and Awareness About Risk Factors of Cervical Cancer, Its Screening and Vaccination Among the Women Attending Chittagong Medical College Hospital" conducted by Fahmida *et al.,* 2015, 42.54% respondents had idea about cervical cancer and 24% know about the cause of cervical cancer, which was not consistent with our study findings. And the possible reason of this dissimilarity is that study was conducted among the women attending in a tertiary level public hospital, and present study respondents were educated working women in Dhaka city.

About the risk factors of cervical cancer, 71.2% know about the risk factors of cervical cancer and 28.8% don't know about the risk factors of cervical cancer, among those who know about the risk factors of cervical cancer, 63.7% know at least 1 correct risk factor, 24.4 % and 11.9 % working women know 2-3 correct risk factors and 4-6 correct risk factors respectively.

Bansal *et al.,* 2015 conducted a cross sectional study in India where they showed at least one symptom and one risk factor were known to 35.25% and 39.75% participants. In comparison with this study, present study shows much higher percentages regarding knowledge about at least one correct symptom and risk factors of cervical cancer. These differences may be due to the variability of the respondents. As because that study conducted among the females of reproductive age who presented to out-patient-department of a tertiary care hospital, Bhopal, India. Present study respondents were graduate working women where nurses and doctors were also present. So it is natural to be the better knowledge about symptoms and risk factors of cervical cancer in present study respondents from that study respondents.

The study result also revealed that out of 236 working women, Knowledge about the way of prevention of cervical cancer it was observed that almost all (92.8%) know about the way of prevention of cervical cancer and 7.2% don't know about the way of prevention of cervical cancer. In the study (Hoque *et al.,* 2009) showed that 58.5% don't know about the way of prevention of cervical cancer, where as 40.2% know about the way of prevention of cervical cancer. This inconsistency regarding the knowledge about the way of prevention of cervical cancer may be due to the selection criteria of the respondents in the study. That study was conducted among female university student, where as in present study respondents there were nurses, doctors. So they have better knowledge about the preventive way of cervical cancer.

About vaccination coverage against human papillomavirus it was found a very small percentage (5.1%) was vaccinated against human papillomavirus and the rest 94.9% was not vaccine. According to the study of Judy *et al.*, 2013 in the United States; the median HPV vaccination coverage levels for female adolescents among commercial and Medicaid plans were 12% and 19%, respectively (ranges = 0%–34% for commercial plans; 5%–52% for Medicaid plans); which was quite high coverage from present study finding. This dissimilarity may be due to awareness, economic status and geographical variability.

The level of knowledge and understanding of cervical cancer as well as its preventable nature should be improved. Awareness regarding cervical cancer and its prevention is quite low amongst women in our country. Though it is the only preventable cancer by vaccination still the vaccination coverage scenario is very poor globally and no data have been found about vaccination coverage among Bangladeshi women. It is necessary to make aware not only women, but also create mass awareness within the overall population about cervical cancer and its vaccination.

4. Conclusions and Recommendations

Based on the findings of present study it has been observed that the vaccination coverage against human papillomavirus in our country is very low, though this study is a scenario of vaccination coverage of educated working women, so it can easily assumed that the vaccination coverage will be much more disappointing.

- The cost of vaccine should be in an affordable range.
- Easy access and availability of vaccine should be ensured in all health care centers through expanded program on immunization.
- Raise awareness about cervical cancer and vaccine against human papillomavirus through mass media (radio, television, newspaper etc).
- Organize and conduct educational program in the school, colleges and others social setting to aware the adolescent girls.

Conflict of interest

None to declare.

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