

## **Perspectives about Human Papilloma Virus Vaccination among Parents Attending Pediatric Clinic in Trinidad**

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### **Abstract**

*Cervical cancer is one of the common cancers among women worldwide. Despite HPV vaccination being one of the effective preventive measures, it is still not in government vaccination programs. This study aimed to assess the perspectives on HPV vaccine among parents or guardians attending hospital clinics in Trinidad.*

*Method: This was a cross-sectional survey among 244 parent/guardian attending pediatric clinics in Trinidad. Majority of participants were females with 54.9% and most (63.9%) of participants were in <11 age group ( $p < 0.05$ ). Although 40.2% parents knew of cervical cancer ( $p < 0.05$ ), only 28.3% were sure about correct use of the vaccine ( $p < 0.05$ ). A majority of 94.7% had never vaccinated themselves against cervical cancer. Only 3.3% had vaccinated the child accompanying them and 2.5% had vaccinated their other children. Mean perception score ( $\pm$ SD) of the study population was 5.1 (39.3%  $\pm$ 16.5). Majority (62.6%) of the participants scored above mean score. Individual scores for knowledge and practices showed total knowledge score  $\pm$ SD of  $3.4 \pm 1.7$  ( $p < 0.05$ ) and total practice score of  $1.8 \pm 0.9$  ( $p < 0.05$ ).*

*Conclusion: This study highlights the limitations among selected Trinidadian parents with respect to HPV and its implication in cervical cancer. Public education on cervical cancer needs to be well addressed into the community for more acceptances of HPV vaccine and cervical cancer prevention.*

**Keywords:** Cervical cancer, Human papillomavirus (HPV) vaccine, pediatric clinic

### **1. Introduction**

Cervical cancer is the fourth commonest cancer among women worldwide with estimated 528,000 new cases in 2012 (Ferlay 2013). Pan American Health Organization (PAHO) reported three different studies done on Human Papilloma Virus (HPV) in Trinidad and Tobago (Ragin et al, 2007, Andall-Brereton et al, 2011, Hosein et al, 2013). One study in 2007 investigated HPV prevalence in 310 women who attended three primary health care centers in the northern part of Trinidad. This study had HPV prevalence of 40.6% for both low-risk and high-risk HPV. In addition, 65.9% of HPV positive women were infected with high-risk HPV. The most predominant genotypes were HPV 52, 66 and 16 with 12.7%, 10.3% and 9.5% respectively. Approximately 30% of HPV positive subjects had multiple HPV infections. In Trinidad and Tobago, HPV prevalence was higher in the younger age group compared to the oldest age groups (Andall-Brereton, 2011).

Human papillomavirus (HPV) vaccines are primarily designed to prevent HPV associated cancers that typically occur years to decades after exposure to HPV 16 and 18. Three prophylactic HPV vaccines which are available against cervical cancer are bivalent, quadrivalent, and nonavalent (9-valent) vaccines. The bivalent vaccine protects against HPV 16 and 18, the most common oncogenic HPV types, which are responsible for approximately 70% of HPV-associated cervical cancers and a large proportion of other HPV related cancers (Forman et al 2011). The quadrivalent vaccine protects against HPV 16, 18, 6 and 11 which are also responsible for genital warts and respiratory papillomatosis (Lacey et al, 2006). The 9-valent vaccine also protects against HPV 6, 11, 16, 18, 31, 33, 45, 52 and 58 (Jaura et al, 2015). Routine HPV vaccination is recommended for both females and males aged 11-12

years. HPV vaccination can be started by the age of 9 years or can be given between the ages of 13-26 years for females and 13-21 years for males who did not receive the HPV vaccine previously.

In Trinidad, routine HPV vaccination of girls began in 2013. Because of the slow natural history of HPV oncogenesis, the effect of vaccination on invasive cancers will not be evident for decades. Pre-invasive cervical intraepithelial neoplasia 2 and 3 and adenocarcinoma in situ (together referred to as CIN2+), which are detected through routine screening, take less time to develop and were used as a surrogate for cervical cancer in vaccine trials. Real-world reductions in CIN2+ have been shown in countries with high vaccination coverage and catch-up programs for older persons and where it is possible to link data across population-based disease, screening, and vaccination registries (Gertig et al, 2013; Crowe et al, 2014; Baldur Felskow et al, 2014; Pollock et al, 2014).

The CDC and NIH report low uptake of the HPV vaccine for the past few years continuously with vaccination of males being significantly lower than females. Despite a slight overall increase (3%) in both 2013 and 2014, uptake of the HPV vaccine has fallen in the past few years from its initial uptake after it was approved (CDC 2015; Nelson 2015).

This study therefore aimed to assess the perspectives on HPV and HPV vaccine of parents/guardians of children visiting the pediatric clinic in Trinidad hospitals.

## **2. Method**

A cross sectional survey of 244 parents whose children were attending pediatric clinics at different hospitals in Trinidad, on HPV, cervical cancer and HPV vaccine, was conducted in October 2015.

Several criterions were used for participation in the study.

### **Inclusion criteria:**

1. Participant must have at least one child in order to provide information for this study.
2. Both males and females were included in this study
3. All ethnicities were invited to participate in this study
4. Participants must have been 18 years or older to participate in this study
5. Mentality stable
6. English speaking parents

### **2.1. Ethics approval**

Ethical approval for this study was granted by the University of the West Indies Ethics Committee. Written consent from parents or guardians was obtained prior to filling out the anonymous questionnaire.

### **2.2 Data analysis**

Data were assessed using SPSS version 21.0 and statistical analysis was conducted using the  $\chi^2$  test and a p-value  $\leq 0.05$  level was considered significant. Mean  $\pm$  SD was used to evaluate the total scores and individual scores of participants.

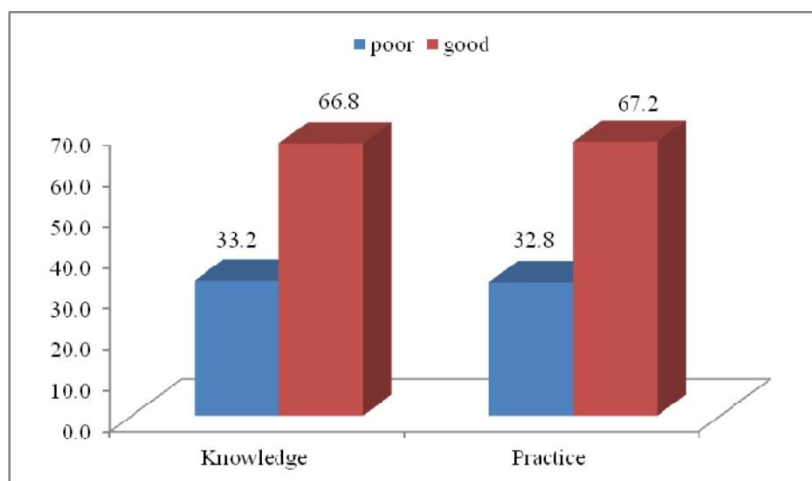
## **3. Results**

A total of 244 parents were enrolled in the study with Clinic 1 with 40.6% parents, Clinic 2 with 37.3% parents and Clinic 3 with 22.1% parents ( $p < 0.05$ ). Age group of participating children were <11, 11-12, 13-15 and 16-18 years old with 63.9%, 11.5%, 16.0%, 8.0% respectively ( $p < 0.05$ ). The majority (54.9%) of the participants were females than male (45.1%) ( $p > 0.05$ ) (Table 1).

**Table1:** Demographic characteristics of participants

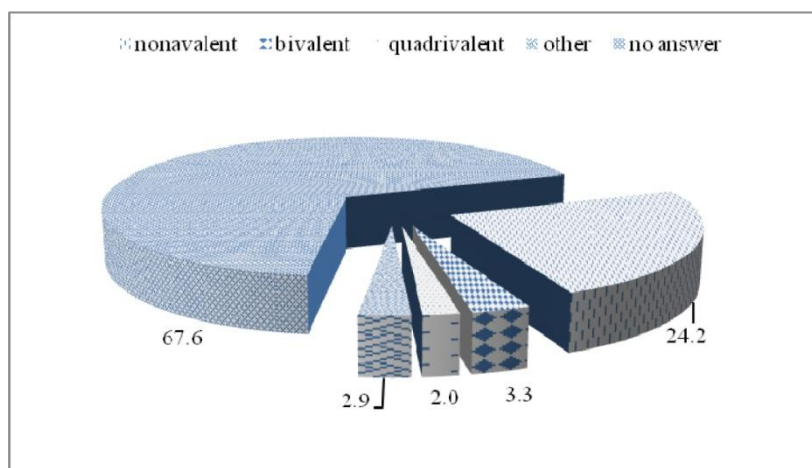
Demographic variable	n(%)	p-value
Clinic 1	99 (40.6)	
Clinic 2	91 (37.3)	
Clinic 3	54 (22.1)	p<0.05
<11	156 (63.9)	
11-12	28 (11.5)	
13-15	39 (16.0)	
16-18	21 (8.6)	p<0.05
Male	110 (45.1)	
Female	134 (54.9)	p>0.05

Perspectives of parents were assessed by asking questions on etiology, signs and symptoms transmission, treatment and management of cervical cancer. A total of 9 questions were used to assess the participants with a maximum possible score of 13. Mean score ( $\pm$ SD) of the perspectives for the entire study cohort was 5.1 (39.3%  $\pm$ 16.5). Parents scoring  $\geq$ mean were categorized good and those scoring  $<$ 5 were categorized poor. Majority (62.6%) of the participants scored above mean score. Individual scores for knowledge and practices showed total knowledge score  $\pm$ SD of 3.4 $\pm$ 1.7 (p<0.05) and total practice score of 1.8 $\pm$ 0.9 (p<0.05). A total of 66.8% scored good knowledge and 67.2% scored good practices (Figure 1).



**Figure 1:** Overall grade of participants with regard to their knowledge and practices

Majorities (40.2%) of the participants were aware of the presence of vaccines, but only 28.3% were sure about the correct use of the vaccine (p<0.05). A majority (71.7%) did not know the use of vaccine. Although majority knew about the vaccine, only 3.3% of the participants had vaccinated the child visiting the clinic and less (2.5%) had vaccinated their other children (p<0.05). Almost 94.7% had never vaccinated themselves against cervical cancer.



**Figure 2:** Types of the vaccines known to participants

Many (93.0%) of the participant did not know about types of vaccines available but only small number (9.0%) believed that the vaccines could have side effects ( $p < 0.05$ ). 73.4% believed that giving the vaccine in Trinidad would be beneficial whereas 62.3% would want their child/children to get vaccinated ( $p < 0.05$ ). Figure 2 demonstrates the percentage of participants and their knowledge on different HPV vaccines.

#### 4. Discussion

Trinidad and Tobago is a multi-ethnic society consisting of people mainly belonging to East Indian or African origin, as these two races are the dominant races found in country. This study showed the knowledge, attitudes and practices of these social groups as the questionnaires were distributed without bias almost evenly throughout the groups. Most parents had secondary school education. Trinidad and Tobago also offers free health care to its citizens, most of the participants in this study were believed to come from the middle or lower economic class, with the assumption being that upper class families will opt to visit private doctors for their children's health rather than rely on the public health system. Most participants involved indicated that they had multiple offspring, with a minority stating that they only had one child.

With respect to the values obtained, it was observed that only 21% of the population was educated sufficiently about the HPV vaccination program (this was calculated as a direct result to answers given concerning the presence of the vaccine, knowledge of the virus itself, types of vaccines for HPV as well as possible side effects of the vaccine).

It was also observed that only 3.3% of parents had a child that received the vaccine with the ratio being a 1:3 male to female ratio. These results can be explained by the basic level of education among the majority of the participants partly as an extension of their middle and lower income backgrounds limiting their social and educational mobility. The results also showed that 62.3% of participants believed that the vaccine was beneficial to the country and a similar number expressed that they would like their children to receive the vaccine in the future. Though the willingness to be vaccinated is present, lack of education was identified as the limiting factor from turning desire into reality.

The results of the study mimic those of the CDC and NIH concerning the knowledge attitudes and practices of participants toward the vaccination program, showing no differences between the two first world countries (Trinidad & Tobago and the USA) with both countries identifying a lack of education about the vaccine being a severe limiting factor to being vaccinated (Fernandez-Expada et al, 2014).

## 5. Conclusion

This study has provided essential information on the perceptions of parents in Trinidad towards HPV and cervical cancer and emphasis the need for educational and interventional programs, especially targeting women to reduce the major burden imposed by cervical cancer.

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