

Perceptions of Dental Students about the Role of the Dentist in the

Prevention of HPV-OPC

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List of abbreviations used:

CEGEP: Collège d'enseignement général et professionnel

DNA: Deoxyribonucleic acid

HIV: Human Immunodeficiency Virus

HNC: Head and Neck Cancer

HPV: Human Papilloma Virus

IP: Interpretive Phenomenology

OHP: Oral health provider

OPC: Oropharyngeal Carcinoma

OSSC: Oral Squamous Cell Carcinoma

PCR: Polymerase Chain Reaction

RB: Retinoblastoma

CIN: Cervical Intraepithelial Neoplasia

DMD: Doctor of Dental Medicine

IRB: Institutional Review Board

DEDICATION

This thesis is dedicated to my husband and children, for their continuous support, to my parents for their belief in me, and to my supervisors, who constantly encouraged me to strive for the best and follow my dreams.

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ABSTRACT

Human Papilloma Virus (HPV) infection is now recognized as an antecedent for the development of cervical cancer and over the last two decades has been increasingly recognized as a major risk factor for oropharyngeal cancer (OPC). The last twenty years have also shown an increase in this type of cancer in the developed world, while tobacco and alcohol related head and neck cancer (HNC) have shown a decline. The trend of HPV-OPC may also have a projected increase in the future, if health promotion roles by dental health professionals are not in sync with these serious trends. Because the increase in HPV-OPC is relatively recent, the general population including many health professionals might not be aware of the magnitude of the problem and therefore may be slow in providing public health messaging and its immediate inclusion into health professional education. Dentists can play a major role in the prevention of the spread of HPV infections, as members of an interdisciplinary team of healthcare professionals. Through the results of this Interpretive Phenomenological (IP) study we attempted to explore the perceptions of dental students about the role and responsibility of the dentist to engage patients in discussions about sensitive lifestyle risk factors such as HPV transmission, including their sexual behaviours, with purposeful discussions about effective preventive strategies such as vaccinations to prevent acquiring HPV infections. This study also explored the current knowledge of dental students' understanding of the HPV-OPC interaction, as well as, gaining insight about their perceptions about their own professional role as health promoters. Findings demonstrated dental students did not have adequate knowledge about HPV-OPC to be able to counsel patients, and were not fully confident about talking about sensitive topics with their patients. Further educational training in this context is recommended for the dental students.

RÉSUMÉ

Le virus du papillome humain (VPH) est maintenant reconnu comme un antécédent pour le développement du cancer du col. Au cours des deux dernières décennies, il a été de plus en plus reconnu comme un facteur de risque majeur pour le cancer oro-pharyngé (OPC). Les vingt dernières années ont également montré une augmentation de ce type de cancer dans le monde développé, alors que le cancer cervico-facial lié au tabac et à l'alcool a montré une baisse. La tendance du HPV- OPC peut également avoir une augmentation projetée dans l'avenir, si les rôles de promotion de la santé par les professionnels de la santé dentaire ne sont pas en phase avec ces tendances sérieuses. En fait, l'augmentation de HPV- OPC est relativement récente et la population en général, ainsi que de nombreux professionnels de la santé, pourraient ne pas être conscients de l'ampleur du problème et peuvent donc être lents dans la fourniture de messages de santé publique et de leur inclusion immédiate dans l'enseignement professionnel de la santé. Les dentistes, en tant que membres d'une équipe interdisciplinaire de professionnels de la santé, peuvent jouer un rôle majeur dans la prévention de la propagation des infections au VPH. Grâce aux résultats de cette étude phénoménologique d'interprétation, nous avons tenté d'explorer les perceptions des étudiants en médecine dentaire sur le rôle et la responsabilité du dentiste à faire participer les patients à des discussions sur des facteurs de risque de style de vie sensibles tels que la transmission du VPH, y compris leurs comportements sexuels, avec des discussions pertinentes sur des stratégies efficaces de prévention, comme la vaccination, pour prévenir l'acquisition des infections au VPH. Cette étude a également exploré en détail l'état actuel des connaissances des étudiants en médecine dentaire de l'interaction HPV- OPC, obtenant aussi un aperçu sur leur perception de leur propre rôle professionnel en tant que promoteurs de la santé.

Des études ont démontré que les étudiants en médecine dentaire n'ont pas une connaissance suffisante du VPH - OPC pour pouvoir conseiller les patients et qu'ils ne sont pas tout à fait à l'aise de parler de sujets sensibles avec eux. La formation continue, dans ce contexte, est recommandée pour les étudiants en médecine dentaire.

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PREFACE & CONTRIBUTION OF AUTHORS

The candidate wrote all sections of the thesis with Dr. Richard Hovey and Dr Belinda Nicolau as the supervisory authors. The field work and data collection of the study were done by the candidate Nida Amir during the months of September 2013 to December 2013. The literature review, data preparation (transcription) and analysis was performed by the candidate. The source references have been provided in the “references” section, for the information that has been used based on the work of others. Dr. Richard Hovey was the primary supervisor and Dr Belinda Nicolau was the co-supervisor. They were involved in all stages of the project, from the writing and submission of the research protocol to the analysis and thesis writing.

CHAPTER I: INTRODUCTION

1. INTRODUCTION:

The research interest for conducting this study originated from the increasing media exposure concerning HPV and its relation to cervical and oral cancers. Being a dentist, and becoming a researcher it was a topic proposed to the interviewer by her supervisors and it was found to be topical and of professional interest. Dental students become future dental practitioners, and the interviewer, a recent graduate from dental school, could relate to them. The experience of going through dental school and becoming a dentist was also one that was familiar to the interviewer, in order to understand the shift in identity one takes, from student to practitioner, during these crucial years of one's life.

An Interpretive Phenomenology (IP) approach was chosen, to understand the perceptions of the students which required the interviewer to be intrinsically involved with the study. Using the interpretations of the responses given by the students, the analysis of the data, according to the principles of IP was proposed to be able to give answers to the research questions. After many hours of reviewing the literature, the research team came to the conclusion that a study like this had not been done on dental students with a phenomenological research perspective. The interviewer was trained by her supervisors in how to study the literature carefully and also given a directed reading course in IP, which made her familiar with the basis of IP over a one and a half year period. The following is a brief introduction about why this topic was chosen to be the subject of the study:

1.1. HPV and OPC:

Cervical cancer, and more recently oropharyngeal cancer (OPC) are some of the neoplastic disorders that are associated with Human Papilloma Virus (HPV) infections due to sexual activities in humans (Epstein, 2005). The increasing trend of HPV-OPC necessitates the dental practitioner in having a more active role in its prevention. According to Daley et al.:

“As awareness of HPV-related OC increases, dentists may be a key healthcare provider for discussing the HPV vaccine with their patients, demonstrating how OHPs (Oral Health Providers) may be important in future HPV prevention efforts” (Daley et al., 2014, p. 236).

Public knowledge and awareness about HPV-OPC is steadily increasing due to media exposure, creating the possibility of more informed patients in the future asking questions of their dentists regarding its prevention. Daley (2014) found that although practising dentists have adequate knowledge about HPV-OPC, they did not feel sufficiently prepared to discuss the HPV vaccine with their patients. The researchers of this study found that a majority of the participants; approximately 97% fell into the earlier stages of readiness, the stages of contemplation and pre-contemplation about discussing the vaccine as a preventive strategy. The current literature concerning HPV-OPC establishes that there is a knowledge gap, and the perceptions of dental students have not been researched regarding HPV-OPC prevention.

This qualitative research study focused on the perceptions of dental students, asking if they thought there was a role for the dentist to play, in the prevention of HPV-OPC. The study also explored if the students are ready to have sensitive conversations with their future patients regarding its prevention. The research study was also intending to identify if the dental students were getting sufficient training to have sensitive conversations with their patients about topics

such as safe-sex. Dentistry curricula in major North American universities are designed to teach dental students to learn how to diagnose and treat oral diseases. Dental students are taught how to diagnose, examine and finally provide professional treatments plans for their patients. Dental students are also trained how to communicate to their patients when they are delivering a diagnosis and explain a treatment plan. With regards to HPV-OPC, the current dental curriculum at McGill University may be deficient in training future dental practitioners about how to approach sensitive topics with their patients such as sexual practises and safe sex. The current dental curriculum may also need reinforcement regarding oral cancer education and counselling (Boroumand, Garcia, Selwitz, & Goodman, 2008).

CHAPTER II: Literature Review

2. LITERATURE REVIEW:

2.1. HPV-OPC as an increasing health problem:

Human Papilloma Virus (HPV) infection is now recognized as a necessary aetiological factor for cervical cancer (Walboomers et al., 1999) which is the second most common cancer in women across the globe (Schiffman et al., 2007) and over the last two decades has been increasingly recognized as a possible aetiological factor for oropharyngeal cancer (Bosch, 2011). This aetiology and causality has been consistently accepted worldwide based on various studies including molecular epidemiological studies, case control studies, prevalence surveys, cohort studies, and screening studies (Bosch, 2011). According to Bosch the ultimate proof of this causality can be seen by the fact that HPV vaccination against HPV 16 and HPV 18 virtually eliminates the occurrence of the HPV-related CIN (Cervical Intraepithelial Neoplasia) if the vaccine is given to an infection free female. The vaccination against the oncogenic strains of HPV has shown to be an effective preventive strategy against the occurrence of cervical cancer (Paavonen et al., 2009) and is now recommended world-wide to females and males who are not yet sexually active, and also recommended to young adults even after they have become sexually active (Bosch, 2011). If the observed increase in HPV-OPC continues it is projected that the annual rates of these types of cancers may exceed those of cervical cancer by the year 2020; as cases of HPV-OPC are seen to be rapidly increasing in the developed world (Coughlan & Frick, 2012; Hocking et al., 2011). The rising incidence of HPV-OPC, which is a sub-set of HNC (Head and Neck Cancer), has also been described as an epidemic (Sturgis & Cinciripini, 2007).

HNC make up the sixth most common cancers worldwide and approximately 25-30% of them are attributed to HPV (Parkin et al., 2005). The presence or absence of HPV in patients who suffer from HNC is also seen as a new parameter for the prediction of the long-term outcome of these types of cancers (Curado & Hashibe, 2009). The cancers associated with HPV-16 have also been reported to be more prevalent in men who tend to have a better prognosis as compared to HNC associated with alcohol and tobacco (Marur et al., 2010). This has implications for vaccinating males against HPV infections as well as females (Giuliano et al., 2011). The rates of HPV-OPC have increased dramatically over the past 20 years. According to Coughlan and Frick:

“The reported proportion of oropharyngeal cancers attributable to HPV in the United States has increased from 16.3% during the 1980s to 72.7% during the 2000s” (Coughlan & Frick, 2012, p. 900).

An Australian study also reported that between 1982 and 2005 the incidence of potential HPV-OPC had increased (Hocking et al., 2011). Similar to the USA and Australia growth in the incidences of HPV-OPC have also been reported in Europe (Näsman et al., 2009). Although tobacco and alcohol related HNC are declining in the developed world HPV-OPC is seen to be increasing (Chaturvedi et al., 2008). The study conducted by Hocking et al., between 1982 and 2005 demonstrated that the incidence of HPV-related OPC increased significantly for both males and females (Hocking et al., 2011). The increased incidences of these types of cancers were also seen to be more marked in birth cohorts that are recent as compared to older birth cohorts. These cancers were also seen to be predominantly diagnosed in younger, white males which also have implications for vaccinating males against HPV as a preventive strategy. Why has this high incidence of HPV-related HNC been observed in younger individuals? One of the reasons of this effect could be attributed to changes in sexual practises (Marur, 2010). This evidence has major

clinical and prevention implications and highlights the need for strategies to prevent HPV infection as the age adjusted incidence of HPV-OPC is also rising dramatically (Coughlan & Frick, 2012). As more research is being conducted the link between HPV and cancers of the external genitalia and anus in males and of the oropharyngeal regions in both the sexes has implicated that vaccination against HPV for males along with females should also be recommended as a preventive measure (Bosch, 2011).

2.1.1. HPV-OPC a distinct pathology:

According to Coughlan and Frick the HNC that are associated with HPV occur in white males who are non-smokers and in a younger age group as compared to traditional HNC not associated with HPV, thus these cancers are shown to be “A distinct epidemiologic, clinical and molecular entity” (Coughlan & Frick, 2012, p. 900). The fact that these cancers are occurring in a younger population and are seemingly un-related to alcohol and tobacco usage shows that HPV-OPC is a distinct pathology when compared to non-HPV related HNC. Because the increase in HPV-OPC is relatively recent, the population including health professionals might not be aware of the magnitude of the problem and are therefore un-prepared to prevent it.

2.2. The Human Papilloma Virus:

The Human Papilloma Virus is a host specific DNA virus from the Papilloma Virus family which can infect humans (Arbyn et al., 2007). Papilloma viruses are small, epitheliotropic, non-enveloped DNA viruses that can infect the cutaneous and mucosal epithelia in a wide variety of higher vertebrates (including humans) in a manner that is series specific (Arbyn et al., 2007). HPV are sexually and non-sexually transmitted and responsible for various diseases of the skin, oral mucosa and human genitalia. Since these viruses lack a lipoprotein envelope they are relatively resistant to exsiccation and detergents (Handisurya, Schellenbacher & Kirnbauer,

2009). There are certain types of HPV that are responsible for cervical cancer and may also be responsible for the development of oropharyngeal cancers. Of the more than 120 types of HPV discovered so far only a few are high-risk factors for OPC, primarily HPV-16 and HPV-18 (Laronde et al., 2008). Most types of HPV are not oncogenic and cause skin warts, anal warts and associated lesions around the male and female genitalia. According to Laronde et al., over 90% of HPV-positive oral cancers are HPV-16 positive. Similarly, approximately 70% of the cancers of the cervix, vagina and anus may be caused by HPV 16 and 18 and approximately 30-40% of cancers of the penis, vulva and oropharynx may also be caused by HPV 16 and 18 (Munoz et al., 2006). The papilloma viruses tend to exhibit a strong attraction to the epithelial layers and exclusively infect the epithelium without causing systemic viremia (Handisurya, Schellenbacher & Kirnbauer, 2009).

2.2.1. HPV and Oncogenesis:

The high risk Human Papilloma Viruses are capable of inducing oncogenic cellular proliferation (Münger, et al., 2004). In order for the viruses to infect persistently they need to penetrate deeper than the uppermost epithelial layers and reach the basal layer of the epithelium. This occurs usually as a result of micro-trauma or abrasions which cause the virus particles to enter the basal layer of cells in the epithelium that are capable of cellular proliferation (Handisurya, Schellenbacher & Kirnbauer, 2009). The high risk HPV are able to encode two viral oncoproteins, E6 and E7, which have been consistently seen to be expressed in cases of cervical cancer (Jones, Alani & Münger, 1997). E6 and E7 interact to suppress the activity of p53 and RB (Retinoblastoma) which are tumour suppressor genes (Hausen, 2002). These and other factors tend to contribute in the process of oncogenesis. Out of the approximately 120 different types of HPV that have been identified the viruses that are carcinogenic include HPV 16 and HPV 18,

which are deemed as “High Risk” HPV (Arbyn et al., 2007). While most humans experience transient symptoms due a viral infection such as fever, rhinitis, chills, diarrhoea and malaise some chronic viruses can become incorporated into the human genome (Flaitz & Hicks, 1998). Chronic infection with HPV has been known to be an important factor in the development of cervical cancer in females (Ho et al., 1995) and similar infections are suggested to be associated with HPV related OPC (Anaya-Saavedra et al., 2008). The Human Papilloma Virus has been well recognized in playing a role in benign (squamous papilloma, condyloma acuminatum, focal epithelial hyperplasia), pre-malignant (epithelial dysplasia) and malignant lesions (squamous cell carcinoma) of the cervix and more recently of the oral cavity (Campisi et al., 2007). HPV are capable of causing infections in the epithelial layers of the genital area, anus and oral mucosa of both males and females (Handisurya, Schellenbacher & Kirnbauer, 2009). Particularly HPV 16, 18, 31, 33, and 35 viral geno-types have been frequently associated with Leukoplakia (white patches) and squamous cell carcinoma (Bologna-Molina, Castaneda-Castaneira, Molina-Frechero, & Perez-Rodriguez, 2006).

The development of cancer is a pathology that has a multifactorial aetiology with factors such as age, sex, nutrition, genetic predisposition, alcohol and tobacco consumption all playing a role (Bologna-Molina et al., 2006). The development of cancer also depends upon the lifestyle of individuals along with the above mentioned factors (Le Marchand et al., 1997). The combination of alcohol and infection with HPV, or smoking and infection with HPV, or both smoking and alcohol along with HPV infection may have an additive effect in the development of OPC (Laronde et al., 2008). The HPV related to cervical cancer and OPC is spread from person to person through sexual and social contact (Feller, Wood, Khammissa, & Lemmer, 2010). Unsafe sexual practises can lead to further spread of the virus in an unsuspecting population. Sexually

transmitted infection control and continued efforts in sex education all across the world highlight the significance that such infections have on human lives (Meffert, 2006).

2.2.2. HPV presence in neoplastic sites:

According to Gillison et al., “High-risk HPV” such as the HPV16 and HPV18 are the ones that have been known to be tumorigenic (tumour causing agents) in human epithelial tissues which makes up the external most layers of the mucus membranes in the oral cavity, cervix, anus and also the skin. HPV 16 has been found more commonly in oral cancer tissues as compared to HPV 18 (Sugerman & Shillitoe, 1997); but both viruses have been casually associated with oropharyngeal cancer as well as a small group of intra oral cancers (Herrero, 2003). Results from various studies have shown that HPV has been associated with cancers of the base of the tongue and tonsils as well (Cleveland et al., 2011). HPV has also been found to play a role in the development of laryngeal cancer (Franceschi, Munoz, Bosch, Snijders, & Walboomers, 1996). In both the male and female external genitalia HPV has also been seen to be associated with anal, penile, vulvar and vaginal cancers (Parkin & Bray, 2006). According to Parkin & Bray since oncogenic HPV can be detected by PCR (Polymerase Chain Reaction) in literally all the cases of cervical cancer it is generally accepted that the infection with HPV is the main cause in the development of this type of cancer. HPV 16 is more commonly seen in cases of HPV-OPC and HPV-16 infection may be a risk factor for HNC (Mork et al., 2001).

2.3. The link between HPV and oropharyngeal carcinoma:

Human Papilloma Virus is known as a necessary etiologic agent in certain types of HPV-related oropharyngeal cancers, particularly squamous cell carcinomas (Miller & White, 1996; Vidal & Gillison, 2008). The data collected by Gillison et al., suggested strongly that HPV causes a *distinct molecular, clinical, and pathologic disease entity* in the oropharyngeal region. These

types of cancers are different from oropharyngeal cancers that are linked with smoking, alcohol and chewing tobacco use and have a better prognosis (Vidal & Gillison, 2008). High risk HPV types are also seen to be frequently detected in the malignant and pre-malignant lesions of the oral mucosa, while these viruses are not seen on normal oral mucosa (Bouda et al., 2000). This is suggestive of the causative nature of these viruses in HPV-OPC especially of HPV-16 (Scully, 2002). HPV-16 has also been significantly associated with the increased risk of laryngeal squamous cell carcinoma (Li et al., 2013). Head and neck squamous cell carcinoma are the sixth most common cancers in the world (Chung & Gillison, 2009). The Human Papilloma Virus has been found to be associated with 20 % - 25% of the annual incidence of this type of cancer (Chung & Gillison, 2009). Not all types of human papilloma virus are linked with oral cancers (Oliveira, Soares, Pinto, & De Lisboa Lopes Costa, 2003); rather HPV 16 and 18 have been linked with oral and cervical cancers (Chung & Gillison, 2009). HPV 16 and 18 are considered “High Risk” types, even for cases of oropharyngeal cancers, along with cervical cancers (Sugerman & Shillitoe, 1997).

As the trend of HPV related oropharyngeal cancer continues to increase it is important for the dental practitioner to be able to not only screen these types of cancers in their patients (Daley et al., 2011), but to also educate patients about sensitive topics such as safe sexual practices as part of a primary prevention program (Syrjanen et al., 2012). This type of awareness program may help prevent the further spread of HPV and the rise in associated cancers (Stock, Peterson, Houlihan, & Walsh, 2013). It is also important to examine patients for pre-cancerous lesions as a part of a routine examination (McDowell, 2006). It has been seen that HPV-positive OPC also tends to be more responsive to chemotherapy and radiotherapy as compared to HPV-negative OPC, contributing to the better prognosis of this type of disease (Marur et al., 2010). The

survival of patients with HPV-positive cancer is also better than those in HPV negative pathologies, but this has only been seen in males (Ritchie et al., 2003).

2.4. Transmission of the HPV virus:

Studies indicate that sexual contact is important in the transmission of high risk Human Papilloma Virus (Nielsen, Iftner, Munk, & Kjaer, 2009). HPV is a sexually transmitted infection, and one of the potential risk factors for the transmission of the virus is the number of sexual partners, usually greater than or equal to five (Smith et al., 2004). Social contact, such as kissing may also play a role in the transmission of HPV (Feller, Wood, Khammissa, & Lemmer, 2010). The development of oral-HPV infections is seen to be associated with oral sex and open mouth kissing with multiple sexual partners (D'Souza et al., 2009). Sexual practises with multiple partners cause the spread of the virus from one individual to another (Rosenquist, 2012). Some of the known risk factors of HPV infection are having a larger number of sexual partners or frequently changing sexual partners, having intercourse at a younger age, and changing sexual practises (Laronde et al., 2008). Changing sexual practises refer to those sexual practises that are different from the norm such as anal sex and oral sex. These factors can play a profound role in the spread of HPV infection in the population, especially in younger adults, and also increase the risk of developing HPV related malignant and pre-malignant lesions (Laronde et al., 2008). Oral sex has been linked with HPV transmission to the oral cavity (Rosenquist, 2012). A case-control study done by D'Souza et al. demonstrated that high risk oral HPV infection is sexually acquired and the odds of the infection increase with the increase in the number of oral sexual partners, or a higher number of lifetime sexual partners (D'Souza et al., 2009 ; Wheeler et al., 1993). The HPV positive OPC are associated with certain types of sexual behaviours and also tend to occur more in white males and in a younger population (by around four years) than the more traditional HNC

associated with tobacco and alcohol (Cleveland et al., 2011). Vaccinating with HPV vaccine may play a role in preventing oral cancer as well but studies have not established this yet (D'Souza & Dempsey, 2011). The expansion of HPV related cancers can also be reversed with the help of public campaigns about unsafe sex and HPV transmission (Epstein, 2005). These areas are currently under-investigated in the literature.

2.5. Prevention of the spread of HPV with the HPV vaccines:

Cervical cancer, the second most common cancer of women has been identified as the first type of cancer that is exclusively caused by virological agents namely the oncogenic genotypes of HPV (Garland & Smith, 2010). The HPV vaccine is effective in protecting individuals from the virus (Lynch, 2009). Recently, two prophylactic vaccines have been developed based on viral-like particle technology that help in the prevention of HPV related illnesses such as cervical cancer and genital warts (Schmiedeskamp & Kockler, 2006). The two types of HPV vaccine include a quadrivalent vaccine commonly known as Gardasil and a bivalent vaccine commonly known as Cervarix (Bosch, 2011). The quadrivalent vaccine targets two oncogenic HPV types, namely the HPV 16 and 18 as well as HPV 6 and 11 that are non-oncogenic. HPV 6 and 11 are responsible for respiratory papillomatosis and genital warts. The bivalent vaccine targets HPV 16 and 18 and also contains ASO4 which is a new adjuvant that helps boost the immune response (Bosch, 2001). Both these vaccines are currently licenced in 120 countries. Vaccination against HPV may also reduce the overall burden of those cancers against which vaccines are available such as HPV related cancers (Jemal et al., 2011). The public health agency of Canada recommends Gardasil to both males and females between the ages of 9-26 (PHAC, 2011). One of the most important factors to note is that even though Gardasil vaccine is prescribed for both females and males, the vaccine is mostly given to girls. Cervarix has not been recommended to

be used in males at this time. Since the vaccine (Gardasil) will work as effectively well in males as it does in females the benefits of vaccinating males will help in reducing HPV related illnesses such as cancers and genital warts, in both groups (Bosch, 2011). The role of the dentist in advocating for the HPV vaccine is one that has not been extensively investigated in the literature.

2.6. The Role of Dentists in HPV-OPC prevention:

As public awareness is steadily increasing about the Human Papilloma Virus and oropharyngeal carcinoma it is important for oral health providers to address these issues with their patients (Daley et al., 2011). The dentist is usually the only health professional who tends to examine and screen the oral cavity of their patients with medical professionals only screening if their patient complains specifically about the mouth (Macpherson et al., 2003). For comfortable and effective communication regarding the HPV-OPC link between dentists and their patients, dentists need to be efficiently trained and also ready to discuss these topics. According to Daley et al., (2014):

“Although dentists may play a crucial role in primary prevention of HPV related OSCC (Oral Squamous Cell Carcinoma), results suggest that the majority of dentists are not ‘ready’ to do so.” (p. 236).

Studies have identified areas in which the training of dental students in the understanding of the HPV-OPC link and also in oral cancer screening is lacking (Daley et al., 2011; Boroumand et al., 2008). Public health education and information has been strongly focused on educating the general public about cervical cancer and HPV while educational interventions regarding HPV and oral sex and oral cancers have not been well established (Stock et al., 2013). The dentist as a member of a health care team can play a vital role in increasing awareness about this link in this context. HPV infections and unprotected oral sex are increasing and the oral sex related risks should be researched (Stock et al., 2013). A study conducted by Stock et al. on 238 college

students researched the effects of an of HPV and oral sex risks education intervention. These researchers reported results that students who were informed about the risks chose to practise safer oral sex and were willing to get vaccinated against HPV compared to those who were not (Stock et al., 2013):

“Students exposed to the oral sex-related HPV information reported greater knowledge and HPV vaccination likelihood, and increased perceived risk and HPV infection concern, compared to students who did not read information.” (p. 99).

2.7. Dentist’s Knowledge about HPV-OPC:

Morbidity and mortality rates can be reduced if dentists have sufficient knowledge about how to detect and prevent oral cancer (Cannick, et al., 2005). Dental students are future dental practitioners and their knowledge and perceptions about HPV-OPC and its prevention have been researched. HPV is a Sexually Transmitted Infection and is usually acquired after sexual activity (Barroso & Wilkin, 2011). The dentist as a member of a patient-centred team can play an important role in the prevention of HPV-OPC by increasing patient knowledge and awareness about HPV-OPC in their patients (Cleveland et al., 2011). Public awareness of HPV and its link to cancer is steadily increasing, and as a result of this, more and more people are asking dentists about HPV infections and its prevention (Rautava & Syrjanen, 2011). Since HPV is considered primarily a sexually transmitted infection, parents with children with HPV associated lesions may also have concerns which they would want to discuss with their dentists:

“Public awareness of human papillomavirus (HPV) as the causal agent of cervical cancer and of the availability of HPV vaccines has increased. As a result, more patients are asking their dentists about oral HPV infection and its prevention by means of vaccination. Parents of pediatric dental patients also may be concerned when their children have HPV-

associated oral lesions, because HPV infection still often is considered a purely sexually transmitted disease” (Rautava & Syrjanen, 2011, p. 905).

This necessitates the dental practitioner to be trained in communicating effectively with his or her patients. Although vaccines that prevent HPV are available their effectiveness against oral cancer remains to be fully elucidated (Rautava & Syrjanen, 2011). Nevertheless, the HPV vaccines are so far seen as a very likely preventive strategy for the spread of HPV-OPC but they cannot be useful without patient counselling (Nicolas et al, 2013). By advocating vaccination and by taking a more proactive approach in counselling their patients about safe-sexual practises steps can be taken in order to prevent HPV-OPC. It also remains to be elucidated if dentists are prepared or properly trained for these steps. The knowledge and perceptions of an individual affects their behaviour and in the case of dental students, their future practise. By addressing this gap in the literature the knowledge and the practise of dentists can be improved regarding the prevention of HPV-OPC as well as dentist-patient communication about sensitive topics.

3. Research Question and Objectives:

The purpose of conducting research is to gain insight and attempt to answer questions through an investigation of a topic of interest. Researchers do this in order to gain a deeper understanding of a particular human phenomenon (Englander, 2012). The purpose of an Interpretive Phenomenology (IP) research study is different from that of a mainstream scientific experiment or a quantitative study and this is why each aspect of the study such as the methods, research questions, data collection and analysis are all informed by the philosophical underpinnings and concepts of IP. IP is used to find out from a detailed description of a human experience that is representative of a specific topic of interest from a well-defined population. The interpretations of these detailed descriptions become the findings that are organized and written to inform theories and practice within healthcare and education (Hovey, 2007).

“To explain the social world we need to understand it, to make sense of it, and hence we need to understand the meanings that construct and are constructed by interactive human behaviour. Human action is given meaning by interpretive schemes or frameworks”
(Scott & Usher, 1996, p. 18-19).

This research study endeavoured to elucidate and identify training gaps that may currently exist within the dental curriculum regarding the role of dentists in addressing sensitive lifestyle issues with their patients where cultural and social health disparities may exist (Mouradian, Berg & Somerman, 2003). In order for the dentist as a healthcare professional to play a future role in the prevention of HPV transmission it was deemed a valuable research proposal to explore the perceptions of the dental students about what they think / believe is the role of the dentist in the prevention of HPV-OPC. This knowledge can then be used to reconsider how and what is taught about HPV in the undergraduate dental education. To further explore and understand the

research questions, it was also deemed important to get an idea about the students' professional identity and perceptions about dentistry and dentists as professionals. In order to suggest evidenced based practices for dental education, it was important to understand how students learn or, do not learn how to talk to their patients about sensitive issues by exploring their perceptions about the non-clinical training they receive.

The project used face-to-face interviews as a method for data collection and Interpretative Phenomenology was used for data analysis to answer the following questions:

- *Do dental students see the dentist having a role in the prevention of HPV-OPC?*
- *Do the dental students see themselves playing a preventive role in HPV-OPC in the future?*

3.1. Study objectives:

- a. To explore the perceptions of dental students about the role of the dentists in the prevention of HPV related oropharyngeal cancers.
- b. To explore the student perceptions about their own knowledge of HPV-OPC.
- c. To explore the “idea” of the students evolving identity, in order to understand the change in their professional identity as the student transforms from dental student to dental practitioner.
- d. To explore the non-clinical training that the students receive and how it influences their ability to counsel patients about sensitive health issues.

CHAPTER III: Methodology

4. METHODOLOGY:

4.1. Research method: Interpretative Phenomenology

Interpretive Phenomenology (IP) is a research approach within the human sciences that is used to understand how a given person in a given context makes sense of a given phenomenon (Smith, 2007). The purpose of interpretive phenomenology analysis is to explore how the research participants were making sense of their own personal, professional and social world (Smith & Osborn, 2003). The IP researcher tries to study the phenomenon itself, in order to investigate and classify it; instead of making ontological claims about what the phenomenon or acts that govern the phenomenon are directed toward (Svenaeus, 2001). According to Benner (1994), it is actually the phenomenon and its context that frame the interpretive undertaking of understanding the world of the participants and events:

“The interpretive researcher creates a dialogue between practical concerns and lived experience through engaged reasoning and imaginative dwelling in the immediacy of the participants’ world”. (1994, p. 99)

This is an approach used by qualitative researchers to research the “lived experience” of some event or experience that is of interest to the researcher (Manen, 1990). Interpretative phenomenology, in this project was deemed suitable to provide an understanding of the dental students’ experiences, perceptions and characteristics. The project needed to explore the dental students’ perceptions first-hand, about the prevention of HPV-OPC as first students and as future dental practitioners.

According to Englander (2012) the process of phenomenological research starts with the acknowledgement of the fact that there is a need to understand a particular phenomenon from the point of view of the research population's lived experience. This methodology was chosen, because it enabled the researchers to illicit the perceptions of the dental students based on their own experiences about the question of interest. Interpretive phenomenology offers to help make interpretive sense of a phenomenon, within a "life world". According to Manen:

"Phenomenology, aims at gaining a deeper understanding of the nature or meaning of our everyday experiences" (Manen, 1990, p. 2).

The life of the undergraduate dental student is one comprised of learning multiple forms of scientific information, working with simulated models and gaining clinical experiences with patients under the professional supervision of clinical instructors. Researching a particular topic means to pause the student in their busy life to focus on one aspect of their education, to help us understand how they perceive that aspect at that time and in that context. Therefore the phenomenological research process interrupts the everyday activities of being a student to ask questions, without preparation, but how it is understood at that time and place (Hovey & Paul, 2007).

4.1.1. IP as a philosophically based research approach:

IP research approaches are different from other natural science quantitative studies where one tends to search for correlations or tests hypothesis. IP has been used extensively for research in education where student perspective was the intended outcome (Hovey et. al, 2012). The works of Benner (1994) contributed significantly to the IP methodology, used in medicine and healthcare (Chan, 2010).

For the ease of interviewing very busy students the research team decided to interview the participants (third year and fourth year students) in the study at the Montreal General Hospital, where they take classes and work in their faculty supervised clinics with patients.

The role of the dentist traditionally has not been seen as a counsellor or advocator and to understand the perspective of the dental students, with the help of IP, one can discover if they feel that dentists have a role in this context. The application of phenomenology from the skilled researcher can provide extraordinary insight into some of the many issues that the world of medicine addresses, such as the relationship between the body, mind [consciousness] and the world, the nature of medicine itself, the nature of the body, the meaning of health, disease and illness, the structures of emotions and relationship (Toombs, 2001, p.1). According to Kvale and Brinkmann (2009): “The interpretation of the meaning of the interview text goes beyond a structuring of the manifest meanings of what is said deeper and more critical interpretations of the text” (p.207).

The researcher becomes deeply engaged with the participant transcripts, and thus less reliant on computer related software, depending upon the amount of data that he/she has collected. In this way, the researcher can make sure that no parts of the transcripts are left un-analyzed or unscrutinised in detail. Interpretive phenomenology when utilized as a methodology enables the researcher to find an “interpretation” of the phenomenon, which brings them closer to understanding it [the phenomenon].

4.2. Research Design:

IP studies have been used with the aim of “understanding unique individuals and their meanings and interactions with others and the environment” (Lopez & Willis, 2004, p. 726). A study

conducted by Svedlund et al. (2001) used interpretive inquiry and its philosophical assumptions to understand the contextual features of the unique experiences and the lifeworlds of women who suffered from myocardial infarctions (Svedlund, Danielson, & Norberg, 2001). The study aimed to understand the meaning of the lived experience of these women. The findings of the study were able to illuminate more than the study simply alone suggests as they have implications for future medical practise. The results demonstrated the description of the experience by the women and can help the literature in developing guidelines for practice (Lopez & Willis, 2004). According to Lopez and Willis (2004, p. 733) “The interpretive approach is useful in examining contextual features of experiences that might have direct relevance to practice”, such as in the case of the study conducted by Svedlund et al.

4.3. Participants:

The selection of the participants is the first step in the data gathering process. In IP studies the researchers select participants who will be able to provide them with the most relevant answers to the research questions. According to Englander (2012):

“When it comes to selecting the subjects for phenomenological research, the question that the researcher has to ask themselves is: Do you have the experience that I am looking for?” (p. 19).

The first task that the project required was to find the participants who would have the specific experiences of the phenomenon that was needed to explore. Undergraduate third year and fourth year dental students at McGill University, fit the profile of the participants that the project required. The research team determined that 16-18 students would be enough to generate the amount of data required for an IP study (Hovey et. al., 2012). It was also decided that first year and second year students do not have the necessary experience that the project required, as they

had not started interacting with patients yet and this is why they were excluded from the study.

According to Kvale:

“To the common question ‘How many interview subjects do I need?’ the answer is simply, ‘Interview so many subjects that you find out what you need to know’ ” (Kvale, 1994, p. 165)

The participants were all contacted via email, with the help of their program coordinator and the interviewer to request their participation in the study. The students who responded to the emails were then given a time, location and date for the data collection process. Students were also contacted in person in their faculty supervised clinics and outside their classrooms. Overall, eighteen students agreed to participate in the study, nine from third year and nine from fourth year.

4.3.1. Inclusion criteria:

- 3rd and 4th year dental students from McGill University
- Over the age of 18
- Speak and understand English

4.3.2. Exclusion criteria:

- Under the age of 18
- First and second year dental students

4.4. Data Collection:

Data collection in qualitative studies can be done in one of two major ways, either with the help of interviews, or with the help of detailed written accounts. Interviews can also be based on

interview guides, that are more structured or scripted, or they can be more open, with an interview guide that generally contains an outline of topics, with suggested questions (Kvale & Brinkmann, 2009). The research team decided to use semi-structured face-to-face interviews for the data collection method. According to Smith and Osborn, there are many methods that data from IP analysis can be obtained, such as diaries and personal accounts; however, the best way of data collection for an IP study is through the semi-structured interview (Smith & Osborn, 2010). What phenomenological research in this project aimed to discover was to get as complete of a description from the participants about their perceptions of HPV and HPV-OPC (Giorgi, 2009). The data collection for this project was done in a setting that each participant found convenient and the data was collected either in the students own clinics or their classroom.

4.4.1. Interviews:

Personal interviews are one of the main methods of data collection in qualitative studies. Face-to-face, semi-structured interviews were conducted with eighteen undergraduate third and fourth year dental students at McGill University, and each student was interviewed for approximately 30-40 minutes. According to Crabtree and Miller (1999) semi-structured in-depth interviews are the most widely used format for interviews in qualitative research and can occur either with individuals or in groups. Most commonly they are conducted only once and take between 30 minutes to several hours. Each participant was interviewed in the Montreal General Hospital, either in their own clinic space or in a private section of the cafeteria. The interviews consisted of semi-structured, open ended questions that were especially designed by the research team to understand the perceptions of the dental students. Semi-structured interviews, in an IP study are ideal as they tend to allow the participants' to take the lead, and direct the interview, instead of being directed by the interviewer (Smith & Osborn, 2010). This helps the interview to be rich

and informative. According to Smith & Osborn, the investigator usually has a set of questions (see Appendix A) on a scheduled interview, but the actual interview is simply guided by the schedule, and not dictated by it (Smith & Osborn, 2010). Each participant was asked to talk about their experiences as freely as possible. The interview lasted approximately 30-40 minutes, however the interview length was dependent upon the students. The audio-recording process was chosen instead of note-taking because it frees the interviewer to be fully present and attentive during the interview.

4.4.2. Data preparation:

Each audio-recording was transcribed verbatim by the interviewer, usually the same day or the next day after the interview was conducted. Each transcript took approximately 3-5 hours to transcribe, depending upon the length of the interview. The transcripts were then compared to the audio-recordings to ensure that the data was accurate. The transcripts were then read and re-read to identify themes and sub-themes and develop into “findings”.

4.4.3. Data Analysis

The aim of data analysis in IP is to be able to develop “findings” based on the responses given to the interviewer by the participants. These “findings” then help develop an “interpretation” and this is where IP becomes a more personal and interwoven method of data analysis with the interviewer as compared to more traditional qualitative research methods. The process of interviewing the participants, listening to the audio-recordings, and transcribing the data in order to prepare it for analysis, enables the interviewer to become extremely familiar with the text and each participants responses. The research team decided not to use any data analysis software to analyse the data, rather the transcripts were rigorously read, and re-read, and also compared to the audio recordings of the interviews in order to develop the findings of the research.

4.4.4. Writing and reporting the findings:

Relevant responses by the students were highlighted, and notes were added next to them to help with the final analysis process. The findings that were similar were placed together in different documents, in order to stratify and condense each theme that was identified. The findings have been based upon the responses given by the students in order to answer the research questions. Other relevant findings have also been included in the final report that is written in detail in the sections that follow.

4.5. Ethical considerations:

Ethical approval was sought from the McGill IRB (Institutional Review Board) before the commencement of the study. The study itself did not pose any risks to the participants, and all the students were asked to provide either written or verbal, voluntary informed consent. Any student who wished not to participate in the study was told that he or she has the right to decline their participation during the interview. The interviews were audio-recorded, after taking the audio or written consent of each student. Each research participant was informed of their rights as a participant before the interview process started [see Appendix B for Consent Form] and they were asked if they were comfortable before beginning the interview process. Each student was emailed a copy of the consent form as well, so that he or she has a copy that contains all their rights and all the contact information of the researchers. The form indicates that their identity is kept completely anonymous and confidential. The study did not use any pseudonyms or identification numbers to identify the participants and gender stratification has also not been done. Any data that follows that may indicate gender stratification is not exact, and the gender choice with the quotation has been chosen by the interviewer. All the information gathered was kept secure and confidential, and all materials (recordings, transcripts) will be destroyed at the

end of the prescribed period as indicated in the IRB form.

4.6. Reliability, validity and rigor:

“Reliability and validity have a long history as the central concepts in determining rigor in qualitative research” (Emden & Sandelowski, 1998, p. 207).

Interpretive phenomenological studies, like other qualitative studies are usually very targeted and specific to the research questions being asked. However, every scientific study conducted with rigour is replicable. Unlike scientific experiments, interpretive qualitative studies do not have set guidelines that one can follow in order to replicate them, rather, the researcher needs to deeply understand the philosophy and concepts behind the research methodology he or she may adopt. The questioning of phenomenology based qualitative analyses do not take the same form as analyses based upon the interpretations from a quantitative study (Giorgi, 1988). According to Madison, the rigour of IP research should be based on its potential, comprehensiveness, coherence and appropriateness (Madison, 1988). According to Laverly (2003):

“Phenomenology is essentially the study of lived experience or the life world. Its emphasis is on the world as lived by a person, not the world or reality as something separate from the person” (p. 22).

These philosophical principles are based on the IP approach developed by Van Manen (1997). With the help of methodological coherence, theoretical thinking and appropriate sampling, proposed verification strategies can be devised to reposition validity and reliability (Morse et al., 2002). These measures ensure that scientific rigour is maintained in IP studies such as this one.

CHAPTER IV: Analysis

5. ANALYSIS: FINDINGS

5.1. Description of the participants:

The participants were third year and fourth year undergraduate dental students at McGill University. Nine students were from third year and nine were from fourth year. The age of the students ranged from 23 years to 30 years old.

5.2. Appraising the research question:

The detailed analysis of the transcripts revealed four major findings, along with sub-findings.

The following major findings were found in the responses that the students gave:

- 1) Identity as a dentist and perceptions of the students about dentists
- 2) Perceptions of dental students about their training in non-clinical aspects
- 3) Student perceptions about their HPV-OPC knowledge
- 4) Role of the dentist in HPV-OPC prevention.

Each finding and its appropriate sub-findings have been described in detail below, supported with quotes by the students.

5.2.1. Identity as a dentist and perceptions of the students about dentists:

The professional identity that each person has of him or herself is not only based on what we think about ourselves, but also about what we think about our career/role and its progression (Pratt, Rockman & Kaufmann, 2006). Dentists have a unique identity that makes them separate from other medical professionals (Silberman et al., 1982). They are doctors, who are also highly specialized with a concern for oral health and work specifically in the mouths of their patients. It

was found that most of the third year students did not yet think of themselves as “Professional Dentists” as they had at that point in time not interacted much with patients:

“...we have only had a month and a half or two months of third year education right? So we still have the whole rest of third year [left] ...”

They lacked a confidence that the more senior students seemed to have. The fourth year students on the other hand, were much more confident and radiated an attitude of success as they had successfully been treating patients for a year and found themselves to be more in the “role” of a dentist than their younger less experienced peers:

“...Well it will be about two years of clinic this year and half a year of pre-clinical simulation.”

This statement made by a fourth year student demonstrated that he seemed to have had enough hands on experience to be considered a “dental clinician”. The identity of the students, transitioning from a dental student into an actual dentist seemed to be rooted in the clinical experience that they gained in third and final year of dental school. The accomplishment of treating patients successfully contributed enormously to the transition of the dental students, from students to practitioners.

i) Reasons for joining dental school:

Dental students differ from other medical professionals in their choice of making dentistry a career (Silberman et al., 1982); there are many factors that contribute to their decision. The experience of “becoming a dentist” was further explored when they were asked why they chose this profession. In order to understand how [if at all] dental school has changed them the interviewer asked them what they felt is different now that they are in dental school. The reasons

for joining dental school that they gave ranged from, family members being dentists to seeing that dentists have a nice life style:

“They do take you out of pain and they fix you up, and to me my dentists were always very cool people with very, very nice jobs and seemed to have a very nice way of living.”

The potential earning and lifestyle of dentists may also play a role in choosing dentistry as a career. Most of the students tended to concur on this ideology and thought that dentists as compared to medical doctors have the respectful title of a “doctor” and also earn potentially good incomes, without treating patients who may have life threatening conditions, and going through extremely long hours of residency training that are required to earn a medical doctorate degree.

ii) Student perceptions about the role of a dentist as a health care professional:

Most of the students realised that the responsibility of a dentist is much more than simply diagnosing conditions of the mouth and treating them. A lot of the students felt that their perceptions had changed about what the role of a dentist is after joining dental school and the actual enormity of the program that they had enrolled in also affected them after they had started the program. Some students also stated that they had originally considered dentistry to be something like a speciality in medicine. Their perceptions about the role of the dentist changed when they started going through the curriculum and realized that they had to also study in depth many of the medical subjects that medical doctors study:

“I think I just realized how big of a deal it was just being part of the program, going through that curriculum when we started, it was basics of medicine so just the fact of learning all these things and all those details, you become aware of how complex it is not

only to be in medicine but to be a dentist as well because I feel now knowing all of that we have a responsibility towards our patients.”

In the interpretation of these and similar answers by the interviewer, the dental students start their program with medical students being slightly outnumbered by them. They study the basics of medicine and life sciences and start to feel more like medical doctors rather than focused dental practitioners. The transition to actual dentistry comes, somewhat abruptly in the third year of dental school where students who were before very academic suddenly have to start clinics. If the students started off with some exposure to clinics in the form of clinic shadowing during the first or second year then the transition may not be so overwhelming. Students who were older like the one who has been quoted below also had a better understanding about the role of a dentist than their younger peers regardless of academic year (third or fourth).

“I think that I had a pretty decent understanding [before joining dental school]; to correct form and function and to maintain oral health.

Question: “And has that changed at all since you became a [dental] student?”

Answer: “No, not really, not significantly.”

The interviewer’s interpretation of these responses was that most of the students had a varied response about the role of a dentist as a health care professional. Some of them stated what they thought that the dentist should do instead of what he/she actually does but some of them were well informed about the responsibilities of the dentist as a health care professional.

iii) Perceptions of dental students about dentistry and public health:

The role of the dentist in society was a very pre-determined concept for most students before they joined dental school. They felt that the dentist does play a crucial role in the oral health care

of patients and that also makes the dentist somewhat responsible for the over-all health of their patients. Most of the students had a varied response about the role of a dentist in society. Their perceptions of public health dentists were limited; however, they did seem to agree on the role of a dentist in society to be much more than simply examining and treating patients:

“As a health professional the main role is to provide high quality care, patient centered care basically and patient care should come first on your list, and whether it means you might lose money here or there, it is always the patient that should come first. Also you should be up to date with the research, with the literature to be able to provide that high quality care throughout your career.”

Another response that was given by the students was they did not realise that dentists actually did play a big role in public health. They discovered this fact during dental school and it exposed them to public health and research:

“That’s something I didn’t really understand before dental school. I did meet a dental public health researcher during my undergrad, but when I met them I was kind of shocked, I was floored at the fact that you can do this kind of research as a dentist, and then do meaningful research in that sphere.”

This fourth year student was actually very impressed with the kind of research dentists were doing for the betterment of the health of the population. These responses were interpreted as a “growing awareness” by the students and they felt pride in their profession that they can actually partake in meaningful research in dentistry.

iv) Perceptions of students about how the public views the dentist:

Most of the students knew that the role of the dentist and their role in society is very distinct from that of a medical doctor but they do not feel that they garner the same amount of respect that doctors get. In Canada, since health care is mostly free for citizens and permanent residents they feel that the patients tend to treat dentists more like “technicians” and refer to themselves as “clients” instead of patients.

“....Thing is this [dentistry] is the only department in the whole of the hospital where you have to pull out your Visa [card] at the end of the appointment....Apart from the cafeteria, this is the only department where you actually pay at the end of the treatment, that’s why I feel they think this is more of a business than a medical practice...”

When asked why this fact may exist? And why such a perception of dentists in their opinion is so dominant the students mentioned that a visit to the dentist is seen by the public as a “money drainer” as treating dental cavities is not a life-threatening treatment and is seen more as a luxury than a necessity:

“I think dentists don’t do a good job of explaining to patients why they need something, or explaining the proper consequences of not getting a proper treatment. For instance, you tell a cancer patient that if you don’t get this radiotherapy you are going to die, we as dentists don’t really go into that depth. We don’t for example tell them the consequences of not getting a crown on their tooth. It has become a stereotype....We don’t do a good job of pushing patients into the things they need, or take out time to explain. So patients basically see us checking one patient after the other and think we’re just doing it to get our paycheck.”

Most students also thought that the public viewed them on a lower status/level than medical doctors. They felt that they went through extensive training but the public did not realise the extent of the training that they actually go through and the fact that they study pharmacology, anatomy, physiology in so much detail tended to surprise people:

“They don’t see dentists as health care professionals or complete doctors. Sometimes they tell you ‘You’re not a real doctor, you’re a dentist’ so I don’t think we have that respect or that understanding. People are so surprised that we have to go through medical school, and usually when I tell people that I know about something they’re really surprised. I don’t think they understand we have that knowledge, that background or that information. It is still typically seen as a business.”

Dentistry is seen as a business by the public is the general perceptions of the students and the dentists are not real doctors rather, they are seen more as technicians. This was the perception of almost all the students who expressed their views.

5.2.2. Perceptions of dental students about their training in non-clinical aspects:

The training of the students in non-clinical aspects for example in taking sexual history or counselling patients according to them was good, but not always adequate. In a scenario when an awkward situation may arise not all of them were equally trained. The simulation clinics that the undergraduate dental students attended covered various “scenarios” that prepare the future dentists for what they can expect in an actual clinic setting:

“My experience was good. The actor was told to be embarrassed and to be shy, and I approached him by saying that this is a safe environment and what happens here, stays here. It was a very good learning experience for sure. It was the first time I was exposed

to such a scenario but it was good to learn what the right things are to do or say to someone who is shy so that they don't feel shy and embarrassed in front of you."

This opinion differed from other students who were in a minority less than one third, but none the less who felt that they had not been adequately trained for facing difficult situations. They felt that maybe a little more training in how to deal with difficult patients would be more helpful. When asked if the training was adequate for this student she replied:

"Personally, I would say maybe not. I have only had those two cases [about patients with STI] and maybe it's just two cases more than anyone else has had but I feel it varies from case to case.....if I met a patient who is less forthcoming about it [talking about sexual history] then I would feel a little bit unprepared on how to approach the situation..."

When asked if students actually need additional training in dealing with sensitive topics with their patients the answers also varied. Some students felt like there was no need to train them in dealing with such a situation as they will not really need to deal with it, while others felt that it is very important and necessary. The students who felt that they did not need this training and furthermore believed that it was not part of their professional responsibilities to delve into the sexual history or practises of their patients were in a minority as only two students out of the eighteen that were interviewed felt this way. The majority of the students did feel that they need additional training:

"I feel like, yes [there is a training need] because there are a lot of people in class who probably wouldn't feel comfortable at all even though they might say they would, so I feel like yes, it would be."

Additional training in dealing with sensitive-life style questions and taking sexual history is recommended for dental students as well as medical students. While medical students do get trained in these aspects dental students are often not given similar training as dentistry is seen as a domain that deals exclusively with “oral health”. Oral health has been accepted for a few decades as being a much bigger part of overall health, which includes physical, mental and social wellbeing (Breslow, 1972).

i) Communicating with an “emotional” patient:

Many of the students felt that in their curriculum they have not been specifically taught how to deal with patients who may get emotional. Most of the students, more than two thirds of them felt that they had to rely on their own instincts on how to react to situations when a patient may talk about their distress or grief. They felt that they are not prepared to handle situations that may become very sensitive:

“...I don’t think that in dental school you are really taught how to approach those situations necessarily, I think often you’re caught off guard with those more intimate conversations when you are not expecting them to happen. Like you ask about the family history and the patient starts crying because his daughter was just killed recently in a drunk driving accident or something, and I don’t know if we are really trained to deal with that appropriately.”

This thought was shared by other students who also felt that they needed the curriculum to have additional training sessions about how to talk to a patient who is distraught. Even though they all admitted that their simulation centers did train them in dealing with aggressive patients, they still

felt that they should get additional training in how to counsel patients who are distraught or extremely depressed.

ii) The dentist as a “listening ear”:

The sentiment that patients actually see their dentist more often (or more frequently) than their medical doctor was shared by many of the dental students:

“...A lot of times patients see their dentists way more than they see their family physicians so in some way you are the first health care professional they see...”

This student felt that because of multiple visits and probably because of routine cleanings and check-ups, most patients saw their dentists more than their doctors. Some dental procedures require many visits and the constant communication that dentists have with their patients to alleviate their fear and anxiety may enable patients to trust and therefore confide in their dentists (Yamalick, 2005). A dentist also works in very close proximity with patients as working inside the mouth inches away makes it a more intimate kind of treatment. Patients tend to become more familiar with their dentists than with their medical doctors more quickly because they have time to talk during their visits. Medical doctors also tend to keep a physical distance unless absolutely necessary to examine the patient. Dentists on the other hand, tend to remain in physical contact with their patients for 20-30 minutes and sometimes even longer. The dental students felt that they provide their patients a “listening ear” but they were not necessarily prepared for that:

“...I think patients see us not only as dentists but as health care professionals and they see us quite often, and they will open up to us about recent terminal illnesses that they have been diagnosed with, for example I have had a patient tell me once about a diagnosis she received that she hadn’t even told her family about yet.”

The intimate admission of this patient to her dentist shows that she felt that the dentist treating her was in a position to help. Simply by the provision of a “listening ear” many patients start their path to healing as for the patient, as a sufferer, is it therapeutic and liberating to talk about his/her burdens (Hovey & Amir, 2013). This student also mentioned why he thought the patient opened up to him, he felt that his “lab coat” or “scrubs” put him in a position of authority, and that made his patient open up to him:

“...you kind of get the feeling that they’re telling you because you’re in the white coat, or scrubs or whatever and they see you as a professional that they can trust or confide in.”

He understood the importance of his role as a medical health professional, but he also felt the tremendous need to be trained in how to handle such situations. This fact can also be emphasized by another student. She felt completely untrained in how to handle patients who are upset:

“Some patients come in and if something is really bothering them even if it isn’t really related to their mouth, they will tell you because you’re there and they just need to tell someone. In these situations you want to help them so badly but you just can’t because you don’t know what to do. I had a patient yesterday, and she started crying because something traumatizing was happening in her life. I wanted to help her but I didn’t know what to tell her to help her feel better, so all I can do is just sit there feeling stupid while she’s crying. It’s emotionally draining.”

The student was feeling inadequate and did not know how to handle the situation. The training of dentists differs from medical doctors, as they rarely ever have to deal with traumatic situations. The dental students were trained in various scenarios in their simulation center, and received basic training in how to deal with aggressive patients, uncooperative patients, shy or reserved

patients and other situations but according to them they did not receive enough training in how to deal with an emotionally distraught patient. When this student was asked about her training or readiness in dealing with sensitive or distraught patients she answered that she did not feel that she was adequately trained to deal with such an event. Usually the traditional role of the dentist is not seen as a counsellor or a therapist however more than one dental student did relate that their patients did speak to them about their traumatic experiences.

iii) Taking sexual histories from patients:

Taking the history from patients about their sex lives is not traditionally viewed as the role of a dentist. With the increasing trend of HPV related OPC, it seems that eventually the dental practitioner may be able to play a role in the prevention of this disease, or may be ideally situated to do so. The students were asked if they had ever taken the sexual history from their patients. Most of the third year students claimed that they had not, as they had seen very few patients so far. Some of the fourth year students did have some experience with taking sexual history from their patients. One of the students who had a patient with an STI did not directly ask her patient questions; rather it was ticked in the form that needs to be filled by every patient. She responded in the following way:

“I actually had two such patients. One of my patients had ticked off in his questionnaire that he had a Sexually Transmitted Infection, and I did ask him about it, whether it was recent, whether it was something chronic and he told me it had happened once when he was a teenager and he was in his sixties when he came to me..... The second patient was one that I assisted a surgery on, and he was HIV positive. He was aware of his status, and he was on anti-retroviral drugs so his counts were low but he was in good health so that wasn’t an issue.”

The students did not feel hesitant asking about the technical aspects of the STI or an existing condition if a patient was suffering from it. They did not initiate the questions on their own however. Another response received from another student was that even though he saw a patient was suffering from an STI, he did not really probe much into it:

“During the course of the treatment, it didn’t really enter my mind, so for me it wasn’t much...I sort of just saw it on the sheet, asked them about it, they confirmed that they have/or had the medical condition, and then we moved on...”

Another student replied similarly:

“I asked him when he encountered the first infectious disease (HIV) and if he was on medication right now and stuff like that...”

But when both the students were asked if they felt comfortable taking the sexual history, a similar response was given that unless it was already ticked on the form they would not ask their patients about their sexual activities on a regular or routine basis and neither did they feel that they had a need to.

iv) Should the dentist take sexual histories and how should they be trained?

The sexual history is a very difficult aspect of any clinical practise. Many medical doctors struggle to take the sexual history. According to Walker et al., (1990, p. 972):

“The process of taking a useful and accurate sexual history is sufficiently threatening to most clinicians to justify some special comment.”

Walker et al., (1990) stated that even for medical doctors, taking the sexual history of a patient is a challenging process and is often omitted unless there are obvious signs and symptoms. The

reasons that are given for not taking it range from: simply forgetting to take the sexual history, too not thinking that it is that relevant or important and not taking it due to lack of training. The dental students were asked if they saw the dentist having a role in taking the sexual history of patients. The responses were received were mixed, with more third year students (who actually lacked the clinical experience) being in favour of it, and the fourth year students (who actually had experience and had dealt with patients for the previous one and a half years) felt that they did not think it was the “domain” of the dentist. One fourth year student said that he did not think his patients would be comfortable if he started asking about their sexual history:

“...Most people come to check their oral health and the last thing they want to do is you getting into private matters because they might feel uncomfortable with that.”

Another fourth year student had similar views:

“At this point, no, I don’t think I would feel comfortable with that and I certainly don’t do that now with any of my patients.”

The third year students however were more open to the possibilities of taking the sexual history from their patients. When a third year student was asked about how she would go about it she responded in the following way:

“Well I think if you just tell them that ‘Now I am going to ask you about your sexual history’ and explain why I am asking it, not just out of nowhere because I don’t know, some people might find it weird for their dentist to be asking them such things because they are supposed to be taking care of your oral health, but if you explain how the body is all connected and how even it could affect your throat and have diseases of the mouth based on your sexual history – I think if you explain to them about it and then ask them

their sexual history, they would feel more open to talking about it rather than bringing it up randomly.”

This statement can be interpreted as being more “idealistic” rather than realistic. The final year students were more realistic as they had had more experience with patients, and were also found to be more hesitant about approaching this topic with their patients. When asked about their training, almost all the students mentioned that they had not received adequate training for taking sexual history:

“Not really for these kinds of situations, I don’t think so [that there is enough training] I absolutely think so [there is a need], because a lot of things can be seen in the mouth like HPV and Herpes.”

This particular fourth year student mentioned HPV herself, and felt that it was a growing problem that they would be seeing in the future. She also felt that as a medical professional it is the job of the dentist as a health care practitioner to be able to ask questions about sexual history and health, as there are many infections that can occur in the body that are sexually transmitted and that have oral manifestations (Bruce & Rogers, 2004). She felt that more than her training, it was her own knowledge that guides her usually in making the decisions and taking the history:

“It is part of the training to ask the patient about oral sex, but I wouldn’t say I feel very well trained as to how or what to talk about when I am with the patients, or what to tell the patient. I just go from what I know already.”

Another student however, felt that the job of the dentist is not to probe too deep into personal lives of their patients. He felt that being a dentist, he does not need to take the sexual history as it does not concern his treatment. He justified himself by saying that even though oral

manifestations do occur of sexually transmitted infections, it is still a condition of the genitalia and he felt bringing it up in the dental chair would not be adequate:

“I think it would be a really tough thing to discuss in the dental chair because, I mean yes, HPV doesn’t only have effects on the oral cavity, but also on the genitals....there is cervical cancer, but it is hard to bring up those things when they are not needed.”

There were mixed responses about whether the dentist needs to ask about a patient’s sexual history. Most of the students agreed that in an ideal world it would be great to be able to do so, but in a more realistic manner they felt that it would be awkward for their patients and they did not feel that they had been adequately trained to do so. One fourth year student however did have training in taking the sexual history of his patient. He mentioned that he had been trained to ask sensitive questions in a simulation center scenario:

“We had the patient describe to us the lesion she had in her mouth, and said that it sounds like these are characteristics of lesions which arise from sexually transmitted diseases, and then sort of asked her permission like ‘Do you mind if we ask you some questions related to your sexual history?’ and that was the point we were supposed to get to in the interview, so she consented. Then I think we basically just talked about the recent partners, changes in partners, whether she had had any conversations with that partner about being tested, whether she had indeed been tested, whether she had seen a doctor about it...”

The simulation centers have actors who interact with students in a certain predetermined manner, and the students are observed by their peers and also faculty members in how they respond to the situation. Although this student had been trained in the simulation center about asking about the

sexual history of the patient he mentioned that he had not even thought about HPV or HPV-OPC until it was mentioned it to him and had never actually asked his patients about their sex lives or taken the sexual history.

“It is part of the training to ask the patient about oral sex, but I wouldn’t say I feel very well trained as to how or what to talk about when I am with the patients, or what to tell the patient. I just go from what I know already.”

5.2.3. Student perceptions about their HPV-OPC knowledge:

Two thirds of the students demonstrated that in their own perceptions, their knowledge about HPV and the conditions associated with it such as cervical cancer and oropharyngeal cancer was not adequate. All of them did not feel that they knew enough to counsel a patient about HPV-OPC. Some of the students did state that they will get a “refresher” about it when it comes closer to their dental board examination time and when they study the curriculum in more detail:

“We have been taught, from what I recall, that it is a less aggressive form um...I honestly forgot I would have to go back to my notes, but I do remember us learning about it...”

Out of the eighteen students who were interviewed five believed they had adequate knowledge about the conditions associated with the virus including oropharyngeal carcinoma with others simply knew that it was a virus and associated with cervical cancer. Most of the students had heard about the link between HPV-OPC and only two did not know about this important link. Some of the female students had also been vaccinated by Gardasil against HPV related illnesses and were more knowledgeable about the link between cervical cancer and HPV. Overall, even though some of the students did demonstrate some level of knowledge in their own perceptions it was not adequate to counsel their own patients:

“HPV is Human papillomavirus, it is sexually transmitted, quite prevalent and it is good for women to be screened for it with Pap smears regularly, especially after the age of 15 or 16. Apart from that I don’t know what else to say...”

This fourth year student also emphasized that it was good for women to be screened for it. Both males and females can transmit sexually transmitted viral infections to unsuspecting partners through oral sex (Edwards & Carne, 1998). This concept was known by most students and although they did think of HPV-OPC being a condition that affected both the sexes, they still thought of the vaccine to be a female-oriented preventive strategy. One third year student who seemed to be more knowledgeable about the condition mentioned that males should be vaccinated:

“Well there are multiple strains, some strains can lead to cancer and the other strains are not known to lead to cancer, from what I understand, it is a sexually transmitted virus. There is a vaccine, Gardasil for example which takes care of the more common, more dangerous strains of the virus....I know some guys might get the vaccine as well, I don’t know how effective it is in men but usually it is given to people before they become sexually active for the first time but even receiving it after becoming sexually active can offer some protection against the virus.”

Most of her knowledge was in the interviewer’s interpretation correct and adequate but even she was unsure about her statements and mentioned that she would be uncertain if she had to counsel her patients about HPV-OPC. When asked if a patient asked the students about HPV and its prevention the students gave mixed responses. All the students mentioned they were (at that point in time) not ready to be able to counsel their patients about HPV and its prevention. They

mentioned that they would need to refresh their memories and study further, review the literature and their text books.

i) Does the curriculum, in their perception, require more information about HPV?

When the students were asked if they felt that enough had been taught to them about HPV-OPC, all except two of them felt that maybe an individual lecture of two of 2-3 hours dedicated exclusively to the topic and how to approach it with their patients would be useful:

“I feel like right now because of my medical training I know more about cervical cancer than oropharyngeal cancer caused by HPV and that’s a bit weird, you know as a dentist I feel that there could be more...probably in a pathology lecture that they could just say um, I mean it doesn’t have to be an intensely long lecture but more specifically about what population is at risk, how exactly is it transmitted and what are the statistics in the population and how can you talk to your patient about it.”

The other students felt that enough had been taught about HPV and they do not really need additional classes for the topic:

“There was a lecture yea, it was not a big topic of a lecture but it was a sub-aspect of the lecture.....I mean it’s not a very common condition, we were taught about it because it’s there and we need to be aware of it but emphasis was always on the common conditions that we see.”

Human papillomavirus is estimated to be the most common sexually transmitted infection (STI) in the U.S.A (Dunne et al., 2007). Even though this fact exists HPV-OPC is still a relatively less common condition. The student who mentioned this fact was talking about the more frequent pathologies that are seen in the oral cavities. Never-the-less, the significance of being able to

recognise HPV associated oral lesions is very important for dental practitioners. Most of the students did agree that they would benefit from more information about the topic:

“First I think we need to get more information on the subject for sure, more classes on it, I don’t think it should be a huge deal but it should be introduced in a lot of pathology that we are given, it should definitely be talked about more in pathology.”

From the statement made by this fourth year student it seemed as if the students are taught about HPV-OPC but not in too much detail. The students were not very confident about their HPV knowledge. They felt that even though they had some knowledge, they still would need to read more before they could be considered an educator about the topic. When the students were asked if they have enough knowledge about HPV to educate their patients about it, most of them said no. when asked how they would deal with the situation if a patient asked them about the condition they replied:

“I would have to prepare beforehand, or tell them that I am going to read up about the condition for the next time that they [the patient] came in. Either that or I would refer them to a specialist.”

ii) Talking about sexual practises and STI with their patients:

All of the students felt that they would not have a problem talking about the sexual habits of their patients once they established a safe and professional relationship with their patient. Two students however, felt that they really did not think there was a need to. Another way for the students to, in their perception, feel more comfortable in bringing up the topic was if STI was ticked off by the patient on the medical form. This point was emphasized by all the students that once there is a reason for them to discuss sexual health they would not feel hesitant to do so. As

for initiating conversations on their own almost all of the students felt that it would be awkward for them and their own patients to do that. As for the oral manifestations of sexually transmitted infections the students did have knowledge about them and they felt confident that they could discuss the conditions with their patients:

“In the summer, I had a patient that had a few areas that resembled papules, and I think it was herpes that she had. I didn’t know if she was sexually active but I told her that it could happen from oral sex.”

The student mentioned that she felt comfortable talking to her patient about her sexual history and sexual practises including a recent change in partner and more personal questions. She felt that the main barrier in her communication was actually bringing up the topic. This was a feeling that was shared by majority of the students. They felt that they would not hesitate discussing sexual habits and/or practises with their patients but did not feel confident enough to do so without having a reason to. Some of the students also felt that they would feel more comfortable initiating difficult conversations with their patients if they were younger or closer to their own age. They felt that if a patient was much older or of the opposite sex they would feel more hesitant about talking about sexual practises:

“I think that I would be much more comfortable speaking with young patients that are just starting to perhaps, engage in sexual activities. I would probably feel less comfortable talking to my 80 year old patient about his previous sexual history. He would probably think ‘Who is this kid talking to me about my sexual history?’”

5.2.4. Role of the dentist in HPV-OPC prevention:

The rise of HPV-OPC cases requires some sort of preventive actions by all health professionals. Since the dentist is usually the first one to diagnose cases of OPC, by observing pre-cancerous lesions he/she can play an important role in the prevention of this type of cancer. The students were asked if they thought the dentist had a role in the prevention of HPV-OPC. The responses received were mostly positive that yes the dentist should have a role in the prevention of HPV-OPC but almost all of the students had no idea how the dentist can play this role:

“I think it is imperative. I think that there is nobody else in society who is checking someone’s mouth, I think it is a lot easier for somebody to notice something in their body rather than their mouth, there are very few patients who notice that they have something in their mouth.....”

All the students agreed that it was the dentist who deals with all the diseases and pathologies of the mouth but in the prevention of a disease like HPV-OPC, they were not at all sure about how it can be done. When the students were asked if they thought the dentist should have a preventive role and is it acceptable by the public, different replies were given. One third year student was very confident about her reply and she felt that the dentist can really not play a role at all in the prevention of HPV-OPC at all, but she was the only student who felt this way:

“Um....prevention from the dentist? Like, by the dentist? Um...I don’t really know, I mean the only way you can really prevent it, is to get the vaccine and maybe promote safe sexual activity with your [partner], but I am not really sure about the whole thing....”

Almost all of the students except one or two felt that ideally the dentist should have this role, but they did not think the patients would see it as an acceptable practise by the dentist. One student

was in particular very adamant about the role of a dentist in the prevention of HPV-OPC. She was also, in the interpretation of the interviewer, well informed about the conditions associated with HPV. It was also found that those students who had some knowledge about the topic were more enthusiastic about seeing the dentist as having a preventive role:

“Yes the dentist definitely has a role because they are the oral health specialists, they are looking at the patients’ [mouth and] throats and I think [medical] doctors also have a role in making patients aware but I think dentists also definitely have a role.”

While almost all of the students felt that yes the dentist should play a major role in the prevention of HPV-OPC, the reality of the situation was that they did not know how they could do it. When they were asked to think of ways that a dentist could do this or rather, how they themselves could do this in the future as dental practitioners they replied they would probably put informative pamphlets in their clinics in the waiting area. Some students suggested that they could have a whole section dedicated to sexual history in the initial forms that new patients fill. These responses were interpreted as being unsure of themselves as this was a matter that they had not given any thought to at all. One fourth year student actually stated that in the past two years of clinical practise, he had never even once thought about HPV or HNC related to HPV. When HPV is mentioned most of the students and even lay-people find it easy to relate it to cervical cancer, due to the amount of exposure that media has created. Lately more and more cases of HPV-OPC are emerging and the trend of this kind of cancer is increasing (Coughlan & Frick, 2012) therefore the public is also getting aware that there is a health problem that exists that links HNC to HPV. The dentist can play a key role in spreading this awareness and taking steps to ensure that the public is protected by counselling patients and advising vaccination to both young males and females. The interpretation of these reactions and responses was that the students felt

that discussing the topic of prevention of HPV-OPC was inappropriate for a dentist to bring up. One student mentioned this in a clear and concise way:

“I think there is some sort of a division between the doctors and the dentists and the public seems to think that dentists only know their localized area of the body, just the face and not even the neck I think, so the patients think we don’t know much anatomy or anything of that sort.”

She was asked if she felt that it was inappropriate for the dentist to ask about sexual health and while she stated that it was not inappropriate, she felt that the patients may react to it negatively. This was the response that was received from most of the students. Only two students felt that the dentist has no role at all in the prevention of HPV-OPC as it is not their domain at all. They felt that it is more the domain of a medical doctor.

The most ideal way to start with the prevention of any disease or condition is through education. If the curriculum emphasised more that the dentist can ask patients about their sexual history, and can also advocate vaccinations against HPV, the traditional role of the dentist will be able to change from a medical professional only concerned with the mouth. This was stated by a fourth year student who suggested that the only way the public can get more aware is if future dentists start taking active steps in educating the public and earning their trust:

“I think it is really up to us to prove to the public, so I think it is our role really to prove to the public that we do know more than the public thinks of us that we know. And I think those could be the steps, like if you refer to someone, like if you see a lesion and if you suspect, then refer them or even do it [the treatment] yourself then you kind of earn their trust. This way one patient tells the other patient and that is how it slowly spreads.”

When asked if she felt that there was a difference in the way the public sees the dentist from a medical doctor, she felt that this is the case. Another student also emphasized that whenever he took the medical history of his patients, they would give him the “bare minimum” response:

“I think that’s a kind of separation between dentists and doctors which has been created in the culture. Dentists are more like technicians just because they are working in the mouth whereas doctors are doctors, and doctors need to know everything, every little detail. But dentists are just drilling and filling your teeth, that’s simple stuff, so they don’t need to know, all the medications, all of the allergies, all of that.”

i) Perceptions of the students about this role:

The second part of the main research question was to explore the perceptions of the dental students about their own future role in the prevention of HPV-OPC, when they graduate and start practising as dental practitioners. Do they feel that they can have a role in its prevention in the future? To fully understand the perceptions of the students they were asked to think about their own future practises. In order to have a role in the prevention of HPV-OPC, they would probably have to take the sexual history of their patients more often than not and also advocate the HPV vaccine. Some students like the third year student mentioned above felt very strongly about the topic, and felt she did not see herself doing that in the future:

“I don’t think I would. I wouldn’t just tell people ‘Hey! HPV – it has oral effects and you should think about maybe getting the vaccine’ I wouldn’t do that.”

Her strong reaction was not the only one that was received. A couple of final year students also felt that they really could not see themselves talking openly about HPV with their patients. One

student mentioned that she felt it was a very sensitive subject, as HPV can be transmitted by oral sex:

“...and where should you draw the line from what you really need to know to getting a bit too much into details like you don’t want to put your patients into a position where they are uncomfortable...”

Some students however were, in the interviewer’s interpretation, well informed about HPV and its link to OPC but when they were asked about having a role in the prevention of HPV-OPC, they were not sure how they would go about the process. A third year student was confused and did not really understand what kind of a role she could play, even though she really did want to play a role:

“Um, I don’t know you could ask the questions or maybe do a swab; I don’t know exactly where you get it...”

She was informed that in order to have a preventive role she would need to have something in her routine practise. She was asked if she would be comfortable taking the sexual history and asking sensitive lifestyle questions from her patients on a routine basis. To this she replied:

“Even though I feel like I might be comfortable, I don’t think they [the patients] would be comfortable in answering properly.... I don’t know like, [the patients would say] you’re my dentist; it’s none of your business.”

This was the sentiment shared by majority of the students. They felt that the dentist has historically not had a role in this context, and is not seen as a person who asks such questions.

One of the students who, in the interviewer's interpretation, did have adequate knowledge about the condition did feel that she should have a role in counselling her patients about the condition:

"I think it is my role to make patients aware that it not only occurs through genital contact but through oral sex as well because there are a lot of people who aren't in dentistry or aren't in a scientific field and they aren't aware of that."

Most of the students felt that they lacked training in having sensitive conversations and if placed in this situation, they simply did not feel trained enough:

"Well with the current training I am not 100% comfortable, it is a topic that I am not uncomfortable talking about but I think that in terms of developing a routine when you are screening patients, I think for that we should be trained."

Once again the emphasis came back to the training that the students had. They felt that once they graduate they should be armed with enough knowledge about the condition that they would be able to answer any questions that were asked by patients, instead of having to refer to the literature. One student answered that the dentist should be able to detect any cancer of the oral cavity, and not just HPV-OPC:

"I think in any type of cancer there's a role, whether it's HPV or not. Like we should be able to recognize the signs, we are trained to do that and if we miss something that's in front of us, that's really not good."

This thought was shared by all of the students. Another student mentioned that she felt that cervical cancer and HPV were given a lot of attention by health care providers and the media alike, and she felt that it should also be given to HPV-OPC:

“I think there is a lot of education is to be made because there is a really, really big emphasis on HPV right now but it’s only like the genital part of it that’s very emphasized and most of the population, like normal people don’t know the fact that you can actually have it in your mouth, right? So in all this publicity they are making towards HPV, there should be also kind of screening and educating towards this part....I mean if that can be transmitted to your pharynx then young people should also know.”

She felt that educating the public and creating awareness programs would help in preventing the spread of HPV-OPC. Another student highlighted the need for having more emphasis on it in their curriculum:

“I think that there are a lot of oral cancers right now and it is a very big risk for a lot of people...no one really checks in the mouth or notices that there is something going on so if we learn in our curriculum from the beginning of our training how to talk about it and at what point during your exam do you check for that or screen for it, then we will be that much better prepared at preventing things like oral cancer.”

Dental students are trained to screen for all sorts of pathologies that affect the oral cavity and pharynx. They are trained to conduct a thorough examination of every patient; however they are not necessarily trained in checking for HPV-OPC to the extent that would make them confident to screen patients.

ii) Student perceptions about methods for the prevention against HPV:

The HPV vaccine has been known to be an effective method of preventing cervical cancers associated with HPV (Lynch, 2009). The effectiveness of the vaccine in preventing oral cancer still remains to be seen (Rautava & Syrjanen, 2011) but theoretically, the vaccine should be

effective in preventing HPV-associated oral cancers as well. Vaccination has been considered to be the most effective preventive measure for HPV and the vaccine is recommended for children over the age of nine, for both males and females. In this study, some of the female students had been vaccinated and these were the ones who were, in the interviewer's interpretation, more informed about the vaccine, however none of the male students had been vaccinated. The HPV vaccine is usually recommended by physicians to their patients. The students were asked what they felt about the dentist having a role in the recommendation of the HPV vaccine. Most of the students thought that it is a very important vaccine for girls; they seemed to be unaware or did not think it was relevant or equally effective for boys. They were also aware of the fact that it is most effective when given to a child before he or she is sexually active:

"I think it is recommended for girls under the age of 25 or 26, from what I have read I think over that age its shown to be maybe not as necessary or not as preventative because by that [time] most women have already been in contact with HPV."

When the students were asked how they would go about preventing such a condition, they gave responses that were spur-of-the moment. None of the students had ever thought about HPV-OPC before apart from what they had studied during their class and for examinations. All of the students did feel that prevention of the condition is possible and the dentist can actually successfully have a role in this context:

"Well I think the prevention should happen in all different patients of all different ages for example when you have young patients coming into your office with their parents, maybe you should have posters on the walls, or something that says get a vaccine because it's important..."

CHAPTER V: RESULTS

6. DISCUSSION:

6.1. Summary of the results:

The purpose of the research project was to explore the perceptions of dental students about the prevention of HPV-OPC, and to also explore if they feel that the dentist has a role in this context. Before focus can be given to the main research question in the study, it is important to understand the professional identity and perceptions of the students about their profession. What is their world like? And what do they make of their own lived experiences? What perceptions do they have of their own profession and what do they feel that the public perceives of them? How much training have they received in counselling patients? And finally in their perceptions, is their knowledge about HPV-OPC and the HPV vaccines sufficient? Without adequate knowledge and training the students cannot be effective counselors in the prevention of this condition in the future. While investigating the research questions and objectives, the interviewer was able to discover other findings that were also significant to help understand the perspectives of the students. The main purpose of phenomenological research is to explore the perceptions of individuals through their own unique experiences, as they have lived through them. The main philosophical foundations of phenomenology are used as an approach to gain insight and understanding of the individual experiences of an event (Waskler, 2001). In this way we are allowed a glimpse into their life and their perceptions make the research questions clearer and help inform the topic with the help of phenomenological analysis (Waksler, 2001). The following main findings were discovered:

- The identity of the students.

- Their perceptions about dentists.
- Their perceptions about their non-clinical training.
- Their perceptions about their HPV-OPC knowledge, and
- Their perceptions about the role of the dentist in the prevention of HPV-OPC.

The following sections discuss these findings in detail:

6.2. Identity:

The overall experiences of the dental students during dental school play a key role in their transformation from dental students, to actual dental practitioners. The identity of a person becomes encultured as a professional during these crucial years. Most of the students came to dental school expecting a very narrow and focused field, and realised that dentistry as a profession is much more than they had originally thought. Their experiences helped them expand their thinking, and also gain knowledge and awareness that made them feel appreciative of their overall decision to join dental school. It was found that the final year students felt more in the “role” of a dentist than the third year students, who still felt that they need more clinical experience. Some of the final year students had also started applying for jobs/residencies and had either successfully acquired a position, or were awaiting the results. This demonstrated that the final year students were more in control of their careers, than the third year students who still required a significant amount of schooling to go through. According to Chambers, dentists seem to have more job satisfaction as they tend to have a certain amount of control over their profession (Chambers, 2001). The findings of the study demonstrated that the students felt satisfied with their career choice, and were finally settling in the “role” of the dentist by the fourth year of dental school.

6.3. Perceptions about the dentist and dentistry:

The perceptions of the dental students about dentistry were different when they joined dental school. Most of the students felt that dentistry was a focused health profession, and were surprised to find out that they have to study medicine in detail. This made them feel more like medical doctors, in the first two years of their training, and their curriculum became more focused on the dental sciences in the last two years of their training. Their perceptions about public health and the role of a dentist in public health also revealed that they answered the questions with what they thought the dentist should do, as compared to what a public health dentist actually does. Their perceptions about how the public views the dentist were interpreted by the interviewer as defensive. They felt that the public, especially in a country like Canada where basic health care is free and dental care is not free, the dentists are seen as “business-men and women”. These responses were interpreted as defensive replies, and it was also found the students felt like their knowledge and training is not entirely understood by the public. These students offered suggestions on how this can be improved, in the form of education and awareness programs about oral health care.

6.4. Perceptions about their training:

The students undergo clinical training and are taught dental procedures during the course of their program. One of the aims of this project was to explore their perceptions about non-clinical training, and try to understand what kind of training the students have in dealing with patients in a psychological context. It was found although some students felt the simulation clinics they have at McGill University are excellent, they still lacked the training that it required in dealing with patients who may be emotionally distraught or suffering from depression. Majority of the students also said they would be comfortable in counselling a patient who suffers from a

Sexually Transmitted Infection; but they would find it difficult to take the sexual history of their patient. Most final year students felt it was unnecessary, and not their domain to investigate the sexual history of their patients, while the third year students, who had little real life experience in dealing with patients were more open to the idea of taking sexual history. This shows that during the transition from third year to final year, when the students have enough hands-on experience, they understand the reality of treating patients is actually different from the some-what idealistic perceptions the third year students have. It was found that the fourth year students were also less open to the concept of a dentist taking the sexual history of the patients, although the dentist can actually discover many oral manifestations of sexually transmitted infections (Bruce & Rogers, 2004). At times the dentist can be the first medical professional to discover oral manifestations of HIV, and the role of the dentist in this context is very important. According to Glick et al., the examinations of the oral cavity are extremely essential in recognizing the early signs of disease progression and also in a more complete and comprehensive evaluation of patients who may be infected with HIV (Glick et al., 1994). This is true for other sexually transmitted infections as well such as HPV, Herpes and others. The students generally felt the dentist is sometimes seen more often by the patients than medical doctors especially in major Canadian cities, where waiting times to get a family doctor is very long. They felt the lab coat or scrubs that they wear shows them to be in a position of authority and patients tend to confide in them about their own personal problems such as a loss of a loved one, or the diagnosis of a debilitating disease. In the researcher's interpretation, the students felt they had received no formal training in how to deal with such situations and mostly used their own judgement to guide them in how to interact with such patients. Training sessions can help the students learn how to interact with depressed or distraught patients, and could be very helpful for them. Sensitive lifestyle questions such as

sexual history taking and talking about sexually transmitted infections also needs to be emphasized and the students need to be trained in taking sexual history from their patients.

6.5. Student perceptions of their HPV-OPC Knowledge:

The knowledge of the students about HPV and the oral cancers related to the virus, in their perceptions, was not as adequate as it should be. The third year and fourth year students did not seem to have differences in their knowledge, with some third year students being better informed and some fourth year students being better informed, in the interviewers interpretation. Most of the students mentioned that while they did study about the virus and conditions associated with it and were given lectures about the topic, they do not necessarily recall everything when they were asked about HPV and OPC. They mentioned that during exam time or a time closer to the national boards they might be better informed. The overall interpretation about the perceptions of the students about their own knowledge about HPV and HPV related OPC, is far less than it should be. The literature suggests that HPV-OPC is showing an increasing trend (Mehanna et al., 2013; Howard & Chung, 2012), and if this trend continues the dentist may be seeing far more cases of HPV-OPC than they currently are. This necessitates well-informed dentists and dental schools can help by adding more classes about HPV related illnesses, especially HPV-OPC. The student perceptions about having more classes were also different. While majority of the students felt they would definitely benefit from more classes and more emphasis should be given to the topic, there were two students who mentioned that they did not feel there was an actual need for more classes as the amount of information they were given was enough. The same students also mentioned they did not feel that the dentist has a role in the prevention of HPV-OPC. The dentist, however in their perception should be able to diagnose such a condition. From this investigation it was clear that the students actually do need more emphasis given to the topic and

additional classes or lectures would be beneficial to them and most of the students agreed with this as well.

6.6. Role of the dentist in the prevention of HPV-OPC:

Oral health is also a determinant of systemic health, quality of life and economic productivity (Hollister & Weintraub, 1993). Oral health and quality of life are also correlated, with oral health playing a major role in a person's quality of life (Sheiham, 2005). Current sexual practices that are un-traditional expose patients to a variety of illnesses, and inadequate protection during sexual activities such as oral sex is also a major cause of the spread of STI to the oral cavity (Edwards & Carne, 1998). Oral sex is also being practised more frequently by both, homosexual and heterosexual couples as it is considered a safer alternative than penetrative sex and the necessary precautions are not always taken (Mastrolorenzo et al., 2012). The interviews with the eighteen undergraduate students revealed that many social and societal factors decide for them, if they can have a role in the prevention of HPV-OPC. These factors influence to what degree dentists can ask personal or sensitive questions with their patients:

6.6.1. The traditional role of the dentist:

In order for the dentist to play a key role in the prevention of HPV-OPC, he or she will have to have more conversations with their patients about sexual practises and safe sex. This role is a non-traditional one for dentists and currently may not seem acceptable to the public. This was the biggest concern that was raised by the students in this study. While most students felt they could talk about sexual practises, they felt they would make their patients uncomfortable. Some students mentioned that it would be a difficult topic to discuss with their patients and they did

not think it was appropriate unless a norm is established in which the dentist can be seen in an acceptable light if he or she may speak about such sensitive topics.

6.6.2. Initiating conversations about sensitive topics:

The students mentioned that provided they had enough knowledge, they would be comfortable talking about HPV-OPC with their patients but do not know how to start such conversations.

This necessitates a need for additional training. With the help of simulation clinics the students can be trained in how to be able to have sensitive conversations with their patients. The students also need to be trained in how to address the needs of patients who may be emotionally distraught.

6.6.3. Limited HPV-OPC knowledge:

While the students felt that they could successfully counsel the patients, they would not know what to advise them without consulting their books and the literature. They demonstrated that they had confidence in their own ability to counsel patients, but only if they had enough knowledge about HPV and OPC. This also shows that the current knowledge about HPV and especially about HPV-OPC, in their own perceptions, is limited in the students. The literature suggests that a gap exists in knowledge and practise about HNC among dentists and physicians (Applebaum et al., 2009) and the dentists' knowledge about HPV-OPC is currently under investigated. The dental curriculum needs to give more emphasis to HNC and also to HPV-OPC in order to train future dentists who are able to detect these and related conditions in their patients.

7. RECOMMENDATIONS:

This study has demonstrated that there is a need for the dental students to get additional training about HPV and its link to OPC. They also need training in how to counsel patients about sensitive lifestyle issues such as safe sex, and also in how to take the sexual history of their patients. The students also need to be trained in how to treat patients who come to them who are emotionally distraught, who may require a little more empathy and compassion than dental treatment alone and may simply need a “listening ear”. This study revealed that there might be a knowledge gap in the students about HPV and also about HPV-OPC. The curriculum may need to put more emphasis on these conditions as the dentist can play a key role in the diagnosis and prevention of these conditions.

7.1. The role of dental schools:

Dental schools are the place where future dental practitioners receive their training. These findings have demonstrated that the students are most open to learning from the first year of dental school and by final year their identity becomes almost complete, and they enter a phase of their lives where they are almost ready to be called dentists. Therefore it is necessary to change the perceptions of the students from the first year of dental school. In order to make them more open about taking the sexual history of their patients and talking about sensitive topics, they need to also be taught it is acceptable for the dentist to play a role in this context. As they are future dental practitioners, emphasis should be given to them that they can play a key role in educating the public about HPV-OPC and recommend vaccination. The curriculum may also need to

include additional classes about HPV and HPV-OPC, to train dental students not only how to detect pre-cancerous lesions in the oral cavity but also how to identify high risk patients.

7.1.1. Simulation clinics:

The simulation clinics in dental schools can create “scenarios” where a dentist may be faced by a patient or the parent of a younger patient with questions about HPV and also HPV-OPC. These simulation clinics would be an ideal place for first year dental students to gain valuable experience about such a situation. In a direct Knowledge Transfer plan the results of this study and similar studies can inform writers of the simulation clinic scenarios of ideas they can use to create a simulation clinic that may be useful in educating the students about HPV-OPC and the kind of questions that they can possibly face by their patients in the future. If the students feel that there is a lack of knowledge they would be more prepared to educate themselves about the topic as well as receiving an extra class or session on HPV and HPV associated cancers such as HPV-OPC. This would in effect reinforce the importance of the topic in the minds of the students.

7.2. HPV Vaccination recommendation by dentists:

The HPV vaccine has proven to be highly effective in preventing cervical cancer in young women (Lynch, 2009). Although studies do not yet demonstrate the effectiveness of this vaccine in the prevention of HPV-OPC (Rautava & Syrjanen, 2011), it is effective against those strains of HPV that cause both, cervical and oropharyngeal cancers. HPV vaccination can also be recommended by dentists especially to children over the age of 9 and young adults, as most young children see their dentists at least once a year. The literature suggests that studies that have been conducted to research the age-specific prevalence rates of HPV in a large cross section

of adolescents and children show that HPV infection can be gradually acquired in childhood (Smith et al., 2007). This implicates a need for HPV vaccination before puberty, for the vaccine to be most effective.

7.3. The role of the media:

The media has historically played a crucial role in spreading awareness of many health hazards and medical conditions (Flora et al., 1989). The media has made awareness campaigns to educate the public about the hazards of smoking, the importance of physical activity in order to prevent CVS (Cardio Vascular System) diseases, and more recently about HPV vaccination and cervical cancer. While more recently, the media has been educating the public about HPV-OPC, it needs to continue campaigns and medical and dental health professionals need to partner with the media to produce awareness campaigns that may help reduce the burden of HPV related oral diseases.

7.4. Lectures in high schools and CEGEPs:

High schools and CEGEPs (Collège d'enseignement général et professionnel) in Quebec and elsewhere can have small informative sessions about the importance of vaccination against HPV not only for females, but also the males due to the link of HPV with OPC. This would also be part of a direct Knowledge Transfer plan, for targeting adolescents who are either already sexually active, or almost sexually active. The most ideal time for vaccinating against HPV is before a person has become sexually active however, teenagers and young adults can also gain direct benefit of HPV vaccination (Bosch, 2011). By educating high school and CEGEP adolescents about the importance of safe sexual practises and using condoms or barriers methods for both oral sex and also penetrative intercourse many types of STI's can be prevented, however their effectiveness against HPV prevention is still debated (Holmes, Levine & Weaver, 2004).

Never-the-less, educating young adolescents about un-safe sex, and frequently changing sexual partners is of utmost importance in order to devise a long-term preventive strategy. Educational measures such as health promotion educational interventions, in the past have demonstrated the willingness of young adults to practise safer sex. In a high school or CEGEP environment, seeing an OHP (Oral Health Provider) recommend HPV vaccination may also demonstrate to the younger students that the OHP can also play a role in the prevention of HPV related illnesses, and thus play a part in changing the encultured and traditional role of such professionals.

8. CONCLUSION:

There is a need for the dental students to be trained about not only how to take sexual history of their patients but in also how to interact with emotional, depressed or distraught patients. The current increasing trend in HPV-OPC is showing that health professionals need to play more interactive roles to slowdown and ultimately try to decrease this increasing trend.

The study revealed that the identity of the students is shaped during the last two crucial years of dental school, and it is their lived experiences during these years that dictate the person they will become as practising dentists in the future. The perceptions of the students about dentists were very varied but most of them did feel that the profession is rewarding, worth the hard work and energy that they put in to get into it and also has a major role in taking care of the health of their patients. The interpretation of the students' responses about the perceptions of the public about dentists was that they felt that dentists are misunderstood by the medical / dental lay-person, and are treated differently from a medical doctor while having significant medical knowledge that they share with medical doctors. Finally, when it came to appraise the research question each

student's response was very informative as they found the question caused them to reflect about the HPV-OPC relation, and think deeply about the preventive role that a dentist can play, and if they could also play this role in the future. While majority of them felt that they would like to play a preventive role for the condition, most of them were at a loss about how this could happen. This can only be rectified with further education and training, not only about HPV-OPC but also about how to talk to patients about sensitive life-style questions and counselling patients. The concept of taking the sexual history should also be instilled in the students from the first year of dental school, so that by the time they reach clinical years they are comfortable with the idea of a dentist taking sexual history themselves and thus removing the inappropriate element from it. The media and dental schools can play crucial roles in helping future dentists become ready in this context. Simulation clinic scenarios in dental schools for first and second year students can help them gain training in possible situations where actors who are depicting patients may inquire or pretend to actually suffer from HPV related oral conditions. Lectures by oral health providers such as dental hygienists and dentists in high schools and CEGEP's can also help raise awareness about HPV-OPC and what measures can be taken to prevent this condition, such as safe sex and vaccination. Further research is required, especially into the public, if they feel that the dentist can have sensitive conversations with them, and to understand their perceptions and reactions if a change is to be made in the future to the traditional role of a dentist.

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APPNDICES:

Appendix I: Interview Guide for Semi-structured interview

Knowledge and Perceptions about HPV-OPC:

1. Can you please tell me what you know about HPV?
2. What diseases do you think HPV is linked with?
3. What do you think about HPV?
4. How do you feel HPV is transmitted?
5. How does HPV affect everyday life?
6. What do you know about HPV-OPC?
7. Do you think HPV-OPC can be prevented?

Personal Identity and Role of dentists in HPV-OPC prevention:

8. How do you see yourself as a dentist in the future?
9. What in your opinion is the role of the dentist as a health care professional?
10. What about their role in HPV-OPC prevention?
11. How comfortable are you talking about sexual practises with your future patients?
12. How ready are you to counsel your patients about safe sexual practises?

Appendix II: Consent form

Project title: The perceptions of dental students about the prevention of HPV-OPC

Principle Investigators:

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- **Purpose of the Study:**

To explore the perceptions of dental students, about what they think is their role is in the prevention of HPV-OPC. (Human papilloma virus related oropharyngeal cancer).

- **Description/participation:**

Your participation in this study will be through a semi structured interview for a period of 30-60 minutes. This interview will be recorded for further analysis. Your name and affiliation will not be disclosed to anyone other than the interviewer. It is understood that your participation in this study is entirely voluntary. You may choose not to participate or withdraw at any given point before, during or after the interview. You are free to not answer specific questions during the interview, or to ask that any part of the interview not to be recorded.

- **Potential Risks and Benefits:**

There are no anticipated risks associated with your participation in this study. The only cost to you will be the time needed for your collaboration. There will be no financial compensation for your participation in this study.

- **Confidentiality:**

Any personal information obtained during this enquiry will be kept strictly confidential. In order to protect your identity, your name will be removed from the written transcripts. Only the researchers will have access to any identifiable data. This data will be stored in the researchers' personal password protected computers and/or desktop computers at McGill University. Moreover, although the results of the study may be published and presented at research meetings and conferences (including direct quotes) participants' direct identity and/or identifying information will not be revealed in scientific publication, presentation, or report.

- **Voluntary Participation and / or Withdrawal:**

Your participation in this study is completely voluntary. You may refuse to participate or may discontinue your participation at any time without explanation, and without penalty or loss of benefits to which you are otherwise entitled. The interview will be digitally audio-recorded with your permission. This recording will be destroyed once it is transcribed. If you decide not to participate, or if you discontinue your participation, you will suffer no prejudice. In the case of withdrawal, information collected to this point will be used to preserve the integrity and quality of the project.

- **Questions and Contact Information:**

This research has been reviewed and approved by the McGill University Institutional Review Board. If you have any questions about your rights as a research participant, please contact Ilde Lepore, Senior ethics Administrator of the Institutional Review Board at 514-398-8302.

If you have a question about the research itself you can contact the following:

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By signing this consent form, I:

- ☐ Do not give up my legal rights,

- ☐ Acknowledge that the study has been explained to me and my questions have been answered to my satisfaction, and
- ☐ Agree to participate in this study.

Signature of Participant

McGill Id Number

/____/____/

day/month/year