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4. Results

4.1 Introduction
The aim of this chapter is to compare the data collected for statistical significance, to identify any correlations between the variables and possible causation of these relationships. Firstly the response rate and characteristics of the sample with be described, followed by four sections covering education, knowledge, confidence and support of oral health promotion and assessment.

4.2 Response Rate
A total of 148 students, 63.5% of the population, completed and returned the questionnaire, allowing the acceptance of a 95% confidence level. The sample collected was made up of an equal ratio of diploma/degree to Masters of Nursing Science (MNursSci) students, mirroring the ratio of 70:30% respectively within the whole population. This reduces the chances of bias towards one group, suggesting that the opinions found from the questionnaires will correspond to the wider population. Therefore increasing the confidence of the results found. A breakdown of the response rate can be found in appendix four.
4.3 Characteristics of Sample

From the data collected, the majority of the students’ responding were between the ages of 18-24 years (78.4%, n=116) and female (94.6%, n=140) (Appendix 4). Data were collected from all courses and all years to the timetable developed (Appendix 3). For the ease of analysis, the diploma and degree groups were combined, as they experience a similar teaching programme separate to the MNursSci.

90.5% of the students were either very satisfied or satisfied with their nursing training so far, which includes the majority sampled (Appendix 4). Further, within their nursing training, 85.8% (n=128) of the students had completed a child branch placement. It was expected that a certain number of students would not have had a child branch placement at this stage, specifically those in the first year, this was found to be the case for 14.2% (n=20).

61.1% (n=88) of student nurses sampled had an aspiration or plan to develop their career to a particular area of child nursing (Appendix 4). Interestingly the responses included areas such as like health visiting, neonatal nursing and oncology nursing, which would require knowledge of oral health hygiene and development.
4.4 Students’ Educational Experience

The descriptive data identifies that 72.6% (n=106) of students had experienced oral health education so far in their training (Appendix 4). Within lectures the median amount of time experienced was 2.00 (Mean 1.76, Std. Deviation 0.683) corresponding to 1-2 hours, the same as education on placement, median of 2.00 (Mean 1.85, Std Deviation 0.881). Both of these had narrow standard deviations suggesting that the majority of students had a similar experience of oral health education.

When comparing the experiences of MNursSci and diploma/degree students, 40.8% (n=20) of MNursSci students reported receiving no oral health education compared to (n=20) 20.6% of diploma/degree students (Man Whitney U, p=0.010) (Figure 1). It was expect that an amount of students would report no oral health education due to poor recall. The significant difference between the learning experiences of MNursSci and diploma/degree students could be due to the courses receiving oral health education at different points in their course. Oral health education MNursSci appears to be incremental, as it shows a significant positive correlation (Spearman’s rho=0.487, N=46, p<0.01), with the reports of oral health education increasing with the increasing academic years. In comparison, there is no significant correlation as the years increase in the diploma/degree course (Spearman’s rho=-0.066, N=97, p=0.522), suggesting that oral
health education is not incremental and a fixed amount is received near the beginning of the course. Unfortunately a detailed curriculum could not be obtained for either course for comparison.

Figure 1: Percentage variation between courses' experience of oral health education; Survey Question: During your nursing training did you receive any training on oral health?

![Bar Chart]

When looking at the significance between course and reported educational experience in lectures there was found to be a significant difference (Mann-Whitney U, p<0.001), as opposed to educational experience on placement (Mann-Whitney U, p=0.937). The opposite was found between academic years, with a significant difference found in educational experience on placement (Kruskal-Wallis Chi-Square=18.720, df=3, p<0.001) rather than in lectures (Kruskal-Wallis Chi-Square=1.201, df=3, p=0.753). On examination of the correlations between course and academic years in combination was found that MNursSci showed a strongly significant positive correlation.
for both education through lectures (Spearman’s rho=0.418, N=48, p=0.003) and placement (Spearman’s rho=0.408, N=48, p=0.004). Demonstrating that education on the MNursSci course is received incrementally over the course through both lectures and placement. On the other hand, the diploma/degree course demonstrated a significant positive correlation for education through placement (Spearman’s rho=0.227, N=97, p=0.025) but a significant negative correlation for education through lectures (Spearman’s rho=-0.204, N=97, p=0.045). This would support the suggestion that diploma/degree students receive the majority of their oral health education at the beginning of their course, which is then added to through placement experience.

61.5% (n=91) of the students felt that the amount of oral health education they were receiving was inadequate in terms of quantity (Appendix 4). A significant difference was found between the years (Kruskal-Wallis Chi-Square=17.207, df=3, p=0.001) and between the courses (Mann-Whitney U, p=0.028) as to the quantity of their oral health education. A significant relationship was found in the diploma/degree (Spearman’s rho=0.290, N=97, p<0.01) and MNursSci (Spearman’s rho=0.336, N=129, p<0.05) showing that as the courses progress, the students are more likely to report that the amount of oral health education received is inadequate. However students who reported receiving more oral health education tended to
rate the amount of education received as sufficient (Kruskal-Wallis Chi-Squared = 11.277, df = 2, p = 0.004). The significant correlation shown between the years of diploma/degree makes sense because as previously demonstrated, they receive the majority of their oral health education near the beginning of their course. Then as the students approach qualification they may feel concern over their nursing skills and begin to question their educational needs. However MNursSci continue to receive an increasing educational input but show an increasing disapproval of the education they are receiving. However there is evidence that a characteristic of MNursSci students is dissatisfaction with education levels, irrespective of the amount of input in any area of education (Thompson & Hall, 2007). The larger sample from the diploma/degree could have skewed the correlation between oral health education received in lectures and opinion on the appropriateness of this education.

64.9% and 57.2% of students reported not coming across oral health nursing documentation and referral systems respectively whilst on placement (Appendix 4). Nursing students have the unique position of working within a variety of health care settings. The data therefore provides an insight into the current provisions for oral health assessment within hospitals and the community. However the response rates on these questions were poor, with around a quarter
of students not responding, putting the validity of these results into question.

Around a third of students (35.4%, n=52) have heard of the City Smiles community programme, leaving two thirds (64.6%, n=95) unaware of City Smiles’ purpose (Appendix 4). This could be due to some diploma/degree students not being based in Nottingham. A way of establishing whether studying outside of Nottingham city reduces opportunity to learning about City Smiles would be to compare awareness of diploma/degree and MNursSci, as MNursSci students are only based in Nottingham city. On comparing awareness between diploma/degree and MNursSci, the differences are not significant with 63.9% (n=62) of diploma/degree and 66% (n=33) of MNursSci students unaware of City Smiles (Mann-Whitney U, p=0.985). A significant difference was found between the academic years (Kruskal-Wallis Chi-Square=33.776, df=3, p<0.001). Alongside significant positive correlations between City Smiles awareness and diploma/degree years (Spearman’s rho=0.320, N=97, p<0.01) and MNursSci years (Spearman’s rho=0.633, N=47, p<0.001), suggesting that the knowledge of City Smiles was gained over the duration of the course. As a significant positive correlation was found (Spearman’s rho=0.423, N=147, p<0.001) knowledge gain could be attributed to placement experience. In comparison lecture experience showed an insignificant relationship (Spearman’s rho=0.008, N=147,
suggesting that the awareness of City Smiles is not acquired during lectures.

62% (n=98) of students rated their nursing training for oral health promotion as poor/fair (Appendix 4), the mean result being 0.91 (Standard Deviation 0.867) (poor=0, fair=1). In comparison the other nursing activity’s means ranged from 1.58-2.49 (Standard Deviation 0.824-1.162) (good=2, very good=3). This presents a descriptive insight into the variation between oral health promotion education and other nursing activities (Figure 2). No significant difference was found between courses (Mann-Whitney U=1733.0, p=0.164), suggesting that the oral health education they are receiving is consistent albeit at different points in the course. Furthermore no significant difference was found between the years (Kruskal-Wallis Chi-Square=6.212, df=2, p=0.102), suggesting that when the oral health education is received this is not to a satisfactory level. This is supported by significant negative correlations between satisfaction in oral health training and diploma/degree academic years (Spearman’s rho=-0.213, N=96, p=0.038) and appropriateness ratings (Spearman’s rho=-0.401, N=126, p<0.001). Contrary to this relationship MNursSci students showed a significant positive correlation (Spearman’s rho=0.441, N=39, p=0.005), with satisfaction of training increasing with each year. This correlation is contradictory to the previous observation where appropriate ratings
showed an increasing want for more education, This finding also confirms previous research findings that MNursSci students will always request more educational input (Thompson & Hall, 2007).

Figure 2: Percentage of student nurses rating nursing training very good/excellent; Survey Question: How well has your nursing training prepared you for the following activities?

![Bar chart showing percentage of student nurses rating training very good/excellent for different activities.](chart_placeholder)

It was noted that amongst the rated activities the only other training activity scoring similarly low ratings was sexual health promotion (Figure 2). Interestingly oral health promotion and sexual health promotion significantly positively correlates (Spearman’s rho=0.181, N=133, p<0.05). This relationship could demonstrate that students not only have educational struggles with oral health promotion but health promotion in general.

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1 Key to abbreviations: FCC = Family Centred Care, EBP = Evidence-Based Practice, SHP = Sexual Health Promotion, MA = Medication Administration, RM = Research Methods, RA = Respiratory Assessment, CP = Child Protection, OHP = Oral Health Promotion
4.5 Student’s Knowledge

Similar to previous findings amongst paediatricians (Lewis, 2000, Krol, 2004, Caspary et al, 2008), only 1.4% (n=2) of students correctly answered all four knowledge questions from the questionnaire (Appendix 4). The mean overall score was 1.57 (Standard Deviation=1.04), whilst the median was 2 correct answers. Around 50% (n=75-79) of students got questions two and three correct, which asked about when a child’s permanent teeth start to erupt and when a parent should start brushing their child’s teeth. Question one was only answered correct by 38.4% (n=56) of students and question four by only 17.7% (n=26), these asked when an infant’s deciduous teeth start to erupt and up to what age a child should be supervised whilst brushing their teeth. It is not apparent why these noticeable differences have appeared between these questions (Figure 3).

Figure 3: Overall knowledge scores achieved by student nurses

- 4 correct: 1.4%
- 3 correct: 19.6%
- 2 correct: 31.1%
- 1 correct: 30.4%
- 0 correct: 17.6%

Percentage of students
For this section parametric tests were initially tried but the sample was not homogenous enough, therefore suitable non-parametric tests have been selected. No significant difference was found when comparing diploma/degree and MNursSci (Mann-Whitney U, p=0.0336) or when comparing academic years (Kruskal-Wallis Chi-Square=4.522, p=0.210). This can be seen on Figure 4, which shows very little difference between the two groups.

Figure 4: Comparison of overall scores achieved by courses

The diploma/degree group contained the only students to answer all four questions correctly, this could be attributed to previous experiences, as a student wrote on their questionnaire that their knowledge came from having children themselves, rather than their nursing training. Nevertheless the differences are minimal. This finding was corroborated by insignificant correlations between
dиплом/годы обучения (Спирмана’s rho=0.104, N=97, p=0.309) и 
MNursSci годы (Спирмана’s rho=0.146, N=48, p=0.323).

Незначимая корреляция также была найдена между общим баллом и 
education in lectures (Спирмана’s rho=0.031, N=148, 
p=0.707), но значимая положительная корреляция была найдена между 
общим баллом и образованием на практике (Спирмана’s 
rho=0.167, N=148, p<0.05). Это различие между курсом и 
placement experience could suggest that this form of knowledge is 
mainly acquired on placement; however a significant positive 
correlation would also be expected between overall score and 
diploma/degree years or MNursSci years. Conversely small sample 
size could mean that a significant correlation was not identified, 
rather than the absence of one.

4.6 Confidence in Oral Health Promotion and Assessment
The descriptive data identifies that a range of 29.7%-80.4% of 
students rate their ability to perform oral health promotion or 
assessment activities as poor or fair (Appendix 4). The means ranges 
between 1.23-1.97 (Standard Deviation 0.495-0.791) (0=poor, 
1=fair, 2=good) giving an insight into the variation of responses 
found in the data (Appendix 4). At a glance, students tend to rate 
activities which involve assessing the child lower on the ability scale 
in comparison to purely teaching activities. This could be due to poor 
confidence in their ability to assess a child’s needs or due to
perceptions that health assessment is not within the nursing remit; particularly as some of the activities are traditionally associated with dental practitioners and hygienists.

A significant difference between courses was found in teaching brushing technique (Mann-Whitney U, \( p=0.043 \)), assessing plaque (Mann-Whiney U, \( p=0.031 \)) and trauma (Mann-Whitney U, \( p=0.004 \)) and appropriate referrals (Mann-Whiney U, \( p=0.037 \)) (Appendix 4). This is likely to be due to small sample size not showing up statistical significant in other activities rather than something specific to these activities, as a numerical difference can be noted between the groups, demonstrated in Figure 5. This difference could be due to the differing lengths of the courses. Confidence may not be fully developed in the MNurSci until the fourth year, as opposed to the diploma/degree course where it is developed by the third year, maybe even earlier. Furthermore the MNursSci year groups are only small, so the data collected from the three previous years may over power the statistical significance of the fourth year’s confidence. Counter to this, no statistical differences or correlations were found between the years (Appendix 4) or between the MNursSci years (Appendix 4), except for teaching the importance of diet on oral health (Spearnman’s rho=0.326, \( p=0.025 \)). Again this could indicate that a large sample size is required to demonstrate a significant difference amongst the remaining activities. However these differences in rating ability
between the courses could show a varying learning style or culture between diploma/degree and MNursSci students. Diploma/Degree also lacked statistical correlation between the years (Appendix 4), excepted when teaching parents about the importance of weaning children off bottles (Spearman’s rho=0.294, p=0.007). For both diploma/degree and MNursSci, this relationship could be due to small sample size or perhaps this trend suggests that educational experience could be linked to confidence ratings. The lack of improvement in confidence in some activities over the academic years could show that the education they are receiving is not providing the same statistical gain in confidence as other activities.

**Figure 5: Percentage of student nurses who rated their ability to perform oral health promotion activities as poor or fair**

![Graph showing percentage of student nurses who rated their ability to perform oral health promotion activities as poor or fair](image-url)
A significant positive correlation was found between oral health lecture experiences and the ability ratings of assessing gum disease (Spearman’s rho=0.182, p=0.027) and assessing plaque in children (Spearman’s rho=0.184, p=0.025). Suggesting that increased education does increase confidence, especially in areas which require a greater knowledge in biological processes, like the process of dental decay. However the correlations are only weak and therefore may not be clinically significant. Within teaching activities like weaning children off the bottle, a significant positive correlation was found between experiences of oral health education on placement (Spearman’s rho=0.268, p=0.001). This difference suggests that those who receive oral health education on placement will have a greater confidence in their own abilities. Furthermore a significant correlation was found between total placement experiences and teaching weaning (Spearman’s rho=0.277, p=0.001) and teaching about diet (Spearman’s rho=0.211, p=0.012), linking increasing placement experience with increasing confidence in nursing ability. This further adds to the likelihood that small sample size has affected the statistical significance of the year results. If the rating ability increases with placement experience, then it would be expected for ability ratings to increase with academic years.
4.7 Support of Nurse Led Oral Health Promotion and Assessment

To allow comparison the scores for nurse led interventions (Appendix 4) were added up to create an overall support score, which significantly correlated with the individual support ratings (Spearman’s rho=0.235-0.911, p<0.01). From this score it can be seen that 60.9% (n=78) of students showed support for all nurse led interventions. A significant difference was found between diploma/degree and MNursSci courses (Mann-Whitney U=1563.5, p=0.038), the relationship of which was a significant positive correlation (Spearman’s rho=0.184, p=0.037) (Figure 6). This difference could be due to the MNursSci student’s differing perceptions of the nurse’s role compared to diploma/degree students. In regards to lecture and placement experience and total knowledge score no significant correlation was found, which is interesting as the assumption would be that as education and knowledge increases support would increase too.
Looking at the percentages of students supporting individual nurse led activities it can clearly be seen that they can be divided into two groups. These groups could be described as traditional dental practitioner roles verses what could be viewed as more nursing roles. The comparison of the overall scores can be seen in Figure 7. When dental roles were compared against nursing roles a significant difference was found alongside a significant positive correlation (Spearman’s rho=0.581, p<0.001), showing that although nursing roles were more support by students, a greater support of nursing roles was linked to a greater support of dental roles. This could be due to different views of the nurse’s remit and how this should
develop. However when compare to years and courses no significant differences or correlations were found.

**Figure 7: Percentage comparison of total support scores in dental role verses nursing role**

In comparison when the results were split into teaching activities verses assessing activities (excluding referrals) significant differences and comparisons were found. Support of assessment tasks and teaching tasks were found to significantly positively correlate (Spearman’s rho=0.581, p<0.001). A significant differences was found between the years and teaching tasks (Kruskal-Wallis Chi-Square=12.167 p=0.005). This difference suggests that as students go through their training they develop their perception of nursing and are possibly more open to the development of future nursing roles.
No significant correlation was found between the MNursSci years but interestingly there was a significant positive correlation between diploma/degree years and supporting teaching (Spearman’s rho=0.300, p=0.006). This suggests that the diploma/degree students’ perception of the nurse’s role does develop over time, whilst the MNursSci does not. However the more likely explanation is that the sample size for the MNursSci was too small to demonstrate a statistical significance.

In regards to the correlations between confidence and support, significant positive correlations were found between rated ability of dental decay (Overall support = Spearman’s rho=0.204, p=0.022, assessment tasks = Spearman’s rho=0.195, p=0.028), plaque (Overall support = Spearman’s rho=0.206, p=0.020, assessment tasks = Spearman’s rho=0.210, p=0.017) and gum disease (Assessment tasks = Spearman’s rho=0.175, p=0.048) to overall support and support of assessment tasks. These correlations suggest that the students with better confidence in performing assessment tasks are more likely to support their integration into the nursing role. This could be due to a better understanding of why they would be needed or how they could be used. An insignificant correlation was found between confidence ratings and teaching support, suggesting that tasks are seen as essential nursing roles regardless of students’ confidence.
These differences could demonstrate some key issues. Such as student nurses appear to feel more comfortable performing what could be viewed as traditional nursing roles such as teaching and providing information rather than assessing. This uncertainty around assessing health issues is contradictory to the support shown by the students towards nurse referrals. As for a person to make an appropriate referral there is a need to first assess the child to establish the child’s and the family’s needs, especially to conform with policy’s aim for individualised care and health promotion (DH, 2004, DH 2005, DH, 2007)
Discussion

The aim of this dissertation was to investigate student paediatric nurses’ perceptions of their oral health education and their attitudes towards oral health promotion and assessment by nurses. This was to be achieved through three key research objectives.

1. To identify the experiences student nurses have of oral health education, promotion and assessment.
2. To investigate whether student nurses feel they have the ability to perform oral health promotion and assessment.
3. To examine whether student nurses feel it is part of a nurse’s role to perform oral health promotion and assessment.

The analysis of the results provided a broad insight into the current experiences of student nurses and their opinions of oral health education, promotion and assessment. Specific relationships and interactions were revealed between education, knowledge, confidence and support. These variables will now be discussed against the policies and research highlighted in the literature review.
Caspary et al (2008) provided the initial link between quantity of education received and confidence in performing oral health promotion (OHP), with paediatricians who received oral health education (OHE) reporting higher confidence in OHP activities than those who reported receiving no OHE. However Caspary et al (2008) did not differentiate between lectures and placement experience or time under three hours. By differentiating between OHE under three hours and comparing the amount of education received in lectures and placement, this study improved on Caspary et al (2008) in order to establish whether one form of education is more effective than the other in improving confidence, knowledge and support.

Similar to the OHE experiences of paediatricians and adult nurses (Lewis, 2000, Fitzpatrick, 2000, Caspary et al, 2008, Costello & Coyne, 2008) 72.6% of student nurses surveyed had experience OHE. Analysis of the courses suggested that MNursSci students received OHE incrementally, split between lectures and placement whilst diploma/degree students received the majority of their OHE towards the beginning of their course in lectures.

As the NMC (2004) provides broad learning outcomes for nursing education, which are then tailored to the university’s curriculums, differences in educational experience would be expected in student
nurses qualifying from different universities. As discussed in the Literature Review this is changing with the introduction of Essential Skills Clusters (ESC) (NMC, 2007). As such students on this programme will have specified outcomes for oral health; therefore further research will be required to determine whether these are effective in improving OHE. Therefore the difference in educational experiences is less of concern; instead the overall knowledge scores, confidence rating and support for OHP should be the focal point.

A positive correlation between confidence in teaching activities and education on placement was found, in conjunction with a correlation between confidence in assessment activities and education from lectures. This relationship provides an insight into where confidence in health promotion activities is gained during training and could be used to inform educational practices in nursing training. However the discrepancy between confidence in teaching and assessment activities could show that students are not being given the opportunity to practice assessment of children’s oral health whilst on placement, therefore preventing confidence development.

This discrepancy in OHE between MNursSci and diploma/degree has not been noted in previous research, as the MNursSci course is unique to the University of Nottingham. There is also a lack in
research looking at the educational differences between diploma and degree courses; therefore it is difficult to determine the significance of these results.

Comparable with Lewis (2000), similar conclusions were found in nursing knowledge; with only 1.4% of students answering all four questions correctly. Interestingly no significant difference was shown in knowledge scores between the courses. A difference could have been expected as the MNursSci course received their training incrementally, having their knowledge added to each academic year. However no statistical difference was noted, suggesting that the education received on both courses was to a similar standard. Looking at educational experiences in conjunction with knowledge scores, although three quarters of students received OHE, low knowledge scores suggests that the education was inadequate.

A critique of this surmise is whether the knowledge questions were a true indicator of knowledge level. It is recognized that although the questions on knowledge were not designed to test a student’s knowledge of oral health promotion (OHP); the results can provide an insight into their basic knowledge of children’s oral health. The questions were developed from Delivering Oral Health (DH, 2007b) and City Smiles (Appendix 2), and are basic oral health promotion
messages key to good oral health. Therefore the student nurses would have been likely to come across the information in their training. Similar observations in regards to OHE and knowledge could be made to other research studies, where reported education was high but knowledge levels low, suggesting this could be a problem across nursing and paediatrician training (Lewis, 2000, Caspary et al, 2008, Costello & Coyne, 2008).

Knowledge levels were shown to significantly increase through placement experience, supporting the concept that placement experience is essential to a student nurse’s education and development. However the quality of the OHE being received cannot be guaranteed. Dickinson et al (2009) demonstrated knowledge levels in paediatric nurses tended to be low. Even when this level was improved, this did not significant improve oral health care in practice, which could mean knowledge and experience is not passed on to students. Moreover research into adult nursing has shown that educational up-dates to oral health post-registration are not common practice, suggesting alongside Dickinson et al (2009) that paediatric nurses’ knowledge base may not be up-to-date. McAuliffe (2007) found that placement practices and mentor support heavily influences a student’s own practice, even if the placement teaching is contradictory to evidence-based practice. Therefore not only can the
quality of knowledge and experience gained on placement not be guaranteed, but any lecture-based teaching to rectify it is unlikely to succeed due to the influence of placements over student nursing practices. As such any attempt to increase knowledge and confidence will have to consider how placement learning can be used in conjunction with lecture-based learning.

Further research would be required to show exactly which placement environments helped develop the knowledge and confidence levels, but it is likely that the responses would include special care areas like oncology and intensive care, alongside community care in high-risk areas like health visitors involved in the City Smiles campaign. These are the areas which have been highlighted through policy like Valuing People’s Oral Health (DH, 2007a) and Essential Skills Clusters (NMC, 2007) and have received some attention through research, therefore providing the support required to initiate changes to practice. In which case, these placement areas can provide students with an invaluable experience in oral health promotion and assessment. However not all students will experience placements in each of these areas, highlighting the likelihood that not all student nurses are receiving the same OHE.
An element of this study focused on City Smiles, a Nottingham based OHP programme. Whilst most students were not aware of City Smiles, this was an expected result as knowledge of the programme is mainly gained through placement experience, which would require the student to have experienced a community placement within a deprived area in Nottingham City. Student nurses experience community placements throughout Nottingham and areas of the East Midlands, meaning that some students will not come into contact with City Smiles before they graduate. Even so, student nurses studying at the University of Nottingham are trained for practice in Nottingham and the East Midlands; therefore knowledge of the local demographics, health needs, and local health promotion strategies is essential. Anecdotal evidence from City Smiles, that their health visitors and school nurses required more education than expected, is supported by the findings in this study that students requested more OHE.

Current student nurses are unlikely to be prepared to provide City Smiles’ OHP programme. Although more detail is required into exactly how much they do know and whether this is an acceptable level, the broad overview suggests that students receive a level of OHE which leaves them feeling unsure about their ability to provide OHP. The term promotion is key here, as mouth care is a separate skill which is
a part of OHP. The aim should be to work together towards the WHO (2003b) 2020 goals which have previously been left out of government guidance. Using these, oral health should be integrated into general health.

Similar to Caspary et al (2008), the research found that teaching activities reported higher confidence ratings than activities involving assessment of the child’s health status. Further comparisons were found between the courses with diploma/degree students reporting higher confidence levels than MNursSci. However these findings do not necessarily mean that a student’s confidence level corresponds to their ability to perform said action. Although knowledge levels were found to correlate with confidence levels, previous research has shown that qualified nurses often do not act upon oral health issues even when their knowledge levels have been improved (Dickinson, et al, 2009), possibly because they are unsure of their role in OHP.

Similar to other research findings (Lewis, 2000, Costello & Coyne), 2008, the majority of student nurses reported seeing no formal documentation or referral procedure used on placement. This is contrary to policy which calls for appropriate care planning, communication between services and individualised holistic care (DH, 2004a, DH, 2004b, DH, 2005a, DH 2007a). However without any
evidence-based assessment tools, or guidance for the introduction of referral procedures, this lack of implementation into practice is hardly surprising. As such, the integration of oral health to general health has not be encouraged and as a result nurses and other health care professionals are likely to feel de-skilled therefore less confident in their abilities to implement policy.

Similar to Caspary et al (2008) paediatricians’ support of oral health promotion, this study found that student nurses supported oral health teaching activities more than oral health assessing activities. This may be due to the student nurses not perceiving it as a nursing role, similar to findings found by Dickinson et al (2009). The key to tackling this lack of support to certain activities is first to establish where perceptions of nursing roles are developed. Research has shown influencing factors to be nursing training through lectures and placement, peer support, management and senior nurse support and societal views of nurses (McAuliffe, 2007, Dickinson, 2009). Perception learnt through nursing training is likely to come through course culture and expectations of nursing rather than knowledge and education, as no relationship was demonstrated between these factors and support within the research findings. However a positive correlation between confidence to specific activities and support of nurse-led oral health promotion demonstrates the need for
encouragement and support during training to develop a progressive view of nursing.

The support of nurse-led activities has been shown to develop over time in diploma/degree courses, in comparison to MNursSci which showed a stronger, more stable support over the academic years. This could due to different course culture and student characteristics, resulting in different aims and expectations from course and subsequent nursing career. However further research into the differences between diploma/degree and MNursSci students and courses would need to be conducted.

Some of these conclusions are based on the premise that City Smiles is successful, but previous research into oral health promotion programmes has often been inconclusive. This could be the same for City Smiles, even if it is successful as a pilot project it may not be implemented, especially if it is not cost-effective. However that does not mean that oral health promotion should not be integrated into nursing training. Although there is evidence to justify improving education, it is difficult to establish how this should be achieved. As there is little research and policy clarification to not only the nurses role in oral health promotion but also what knowledge base is required. Although nursing has been identified as a key health
professional in health promotion (DH, 2004b), it is important not to
over develop their role and impinge on other health professionals’
remits.

Education of staff has been identified as the responsibility of PCTs,
but students are not included in this (DH, 2007a). As oral health
knowledge is essential there should be more policy guidance to
encourage its implementation into university courses. This lack of
unity between oral health and general health suggests that the WHO
2020 goals are currently not being met. In this country improvements
to oral health are compounded by the fact that the WHO (DH, 2003b)
2020 goals were not included in the NSF (DH, 2004a), Choosing
Better Oral Health (DH, 2005a) and Valuing Peoples Oral Health (DH,
2007a), three main documents which developed the national action
plan for oral health services. The WHO called for the integration of
oral health into general health by targeting social responsibility,
empowerment and accessibility to care. Instead the UK’s focus was
put on reducing dmft, which focuses on physical health instead of
empowering people to control their own health.

Students are not seeing oral health promotion as an element of their
nursing role, partly due to their learning experiences and learning
culture. Students can be taught the importance of oral health and its
application to nursing care, however if this is not nurtured, supported and encouraged by universities and practice then a change in attitude, beliefs and practice is unlikely to happen (McAuliffe, 2007, Dickinson, 2009). However for education and practice to change there needs to be support from government and NMC, alongside future research into oral health promotion and the needs of nurses.

There is need for the proper evaluation of oral health promotion services to identify progress, strengths, weaknesses, opportunities and threats to the services. This evaluation could add to the evidence based practice of oral health promotion. This is also a requirement of the WHO 2020 goals (WHO, 2003b). The evidence for this from this study suggest that the integration of oral health and general health is not happening within Nottingham, which is a requirement of the WHO (2003b), NSF (DH, 2004q) and Choosing Better Oral Health (DH, 2005a). Instead separate services are being established to meet the needs of the local population. This is required, but it will not contribute to solving the separation of oral health from general health and in the long run is unlikely to be as cost effective or as sustainable as combining the services together.

The perception that oral health is not within the nursing remit has been attributed to the student nurses’ view of the nursing role. This is where clarification of the nurse’s role within health promotion is
required. If individualised oral health promotion and care planning is to be implemented, in line with government policy, then the ability to assess a child’s oral health status will be required.

The perception of teaching activities being better supported than assessment activities could be linked into the psychology of the doctor-nurse game (Stein, 1967, Svensson, 1996)). This group of theories looks at how the relationship between doctors and nurses has developed the professions in certain ways. Originally it was theorised that this relationship was based on a patriarchal relationship with the nurse subservient to the doctor, acting the mother role and carrying out all instructions unquestioningly (Stein, 1967). Over the years these theories have been adjusted and developed to today’s model of negotiated order (Svensson, 1996). In which a careful balance is kept between nurses asserting their abilities as professionals and working together as a team to provide the best care for the patient, whilst still being mindful of the doctor’s remit and authority (Svensson, 1996). This could be affecting the students’ perceptions, with them viewing assessing activities as encroaching on another health professional’s remit, in this case the dentist, who could be viewed as a higher authority. This would also explain the high levels of support for nurse-led referrals as they would be relaying the patient’s needs. As such any development of
nursing into oral health is likely to require broad scale perspective changes throughout the profession and perhaps even how society views nursing.

An unexpected observation was the significant positive correlation between the ratings of oral health promotion training and sexual health promotion training. This could suggest that difficulties with oral health promotion could be linked to issues with health promotion by nurses as a whole. This is an element of this study that would require further research as policy identifies nurses as key to health promotion, the proactive health care approach of the NHS. This could be an element of practice which nurses in practice and education are still adjusting too. This role is likely to be expanded and developed on in the next year, with the impending publication of the Prime Minister’s Commission report looking into the future of nursing and midwifery. Furthermore with a general election planned for this year, the RCN are campaigning for protected Continuing Professional Development (CPD) time. This could be essential to not only improving oral health promotion but health promotion as a whole, allowing nurses the time and opportunity to develop their knowledge and practice in the direction of preventative health care.
Also with oral health promotion, the ethics surrounding the use of population and/or high-risk approaches provides a good example of the ethical debates surrounding health promotion which nursing students should be made aware of. Providing nursing students with an understanding of how health promotion works, its short term and long term effects and the ethical debates surrounding it is comparable to providing student nurses with knowledge of drug pharmokinetetics, their side effects and the ethics surrounding their use. Nurses have the responsibility of knowing all about the intervention or service they are providing to ensure that it is in the best interest of the child and their family.

Training nurses to assess oral health and provide oral health promotion or referral will be part of the provision of a universal service taking into account individual need. This may reduce the need for more drastic approaches of population/public health through water fluoridation therefore reducing the intrusion on individuals’ liberties whilst targeting high-risk populations. Also the use of nurses to carry out basic oral assessment and health promotion could help societal change by increasing the association between oral and general health. Oral health should be incorporated into other health campaigns like change for life, and smoking cessation to save bombarding people with separate campaigns.
Conclusion

This dissertation project has provided a good initial insight into the perceptions and opinions of paediatric student nurses towards oral health education, promotion and assessment. From this recommendations can be made towards the improvement of services, nursing practice and nursing education from a strategic, operational/resource and individual level. The need for further research can be considered, alongside this studies limitations and implications for nursing education and practice and for children and families.

From a strategic level, there is an urgent need for a full review of progress being made to oral health and oral health services at a national level. It has been 5 years since Choosing Better Oral Health (DH, 2005a) has been published and 10 years since the WHO’s (2003b) 2020 goals were set. This review should use the WHO’s 2020 goals as a base for its assessment of progress, as previously these have been left out of government policy. The inclusion of the 2020 goals, would provide clear and measurable aims nationally and locally, allowing the comparison of improvement nationally but also allowing local health authorities to target improvements to the local population’s needs. The NMC should release guidance to support and
advise universities and practices to the role nurses should play within health promotion, and as an element of this oral health promotion. This should provide such institutions with a clear evidence base for nurse led health promotion and provide advice for education and CPD. However for either of these policy developments to occur there would need to be an increased awareness of the importance of oral health. As currently the perception maybe that there is guidance already available and a general service review was carried out last year. However as discussed in the literature review, the review of oral health promotion was broad in detail and out-dated. This lack of interest in oral health may signal the end of political interest in this topic, especially as any further reviews or guidance would require time and resources at a time of cuts in spending.

To assist with education and CPD, a national resource should be considered which would allow any health care professional to access information on health promotion, including oral health promotion. This resource would allow health care professionals to develop their practice and manage their CPD, as well as contributing towards preventative health care. Currently there are online libraries and databases available but these are often complex to use and require a certain level of prior knowledge to search and access the information required. Although costly to set up, a national resource would provide
health care professionals with easy to access information and help PCTs reach the requirement of providing all health and social care staff with oral health training (DH, 2007a). However it should not be used as the only route of training by PCTs who would need to assess the specific requirements of their services and train the staff accordingly.

The above recommendations may seem unnecessary or extreme but they are essential if the recommendations at an organisational/resource level are going to be successful. Locally oral health promotion should be better integrated into nursing education and practice. This should be implemented in part by City Smiles, providing lectures and placement days to student nurses. These placement days could be with City Smiles themselves or with the community dentist teams, providing the student nurses an insight into the importance and influence of oral health on a child’s wellbeing. In practice, City Smiles should provide training events and information to clinical areas, encouraging nursing staff to consider oral health status during the assessment of a child. This expansion of City Smiles’ role will require extra funding and resources but it could contribute to the societal change required to integrate oral health to general health. For the training to implement into practice will require support and encouragement from senior staff and management,
otherwise there is a risk that increased educational input will not affect practice, as seen in New Zealand (Dickinson et al, 2009). Cost-effective recommendations are also possible, through simply increasing oral health considerations during nursing training, for example care planning. For those students who request extra educational input, the development of oral health Reusable Learning Objects (RLOs) would provide the perfect base to encourage and develop oral health skills alongside individual learning skills in preparation for CPD. In practice the integration of oral health could be achieved by adding a section specifically for oral health in admission paperwork, and encouraging its importance in care planning. Most importantly oral health should be included in all child protection training, due to its links to child abuse and neglect (Kellogg, 2005). All these smaller recommendations would still take time and effort to implement but could start the progress of change whilst policy, guidance and research were developed.

All of these recommendations have the same aim, to influence individual nurses and nursing students to incorporate oral health assessment and promotion into their practice. These proposals not only require the students and staff to question practice and attitudes towards oral health and health promotion, but also support nursing as an evolving profession and contribute to its development. The
universities and practice environments play a key role in this by supporting them as adult learners, and should provide them with the time and resources to develop their practice independently as well as together. However it is also important to acknowledge that unless student paediatric nurses and qualified paediatric nurses perceive oral health as an element of their role, it is unlikely they will incorporate their knowledge into practice. Therefore alongside increased support and encouragement there is a need for greater research into oral health promotion and nurses.

There are several areas in need of research which have been identified within this study. Firstly good quality randomised controlled trials would help to provide the evidence base required for the development of oral health promotion programmes. These should be longitudinal, as oral health is not static, and therefore should aim to see how the intervention affects the child over their life-time, into adulthood. The role of the nurse within oral health promotion needs to be clarified through studies investigating into the effectiveness of nurse led health promotion programmes. Evidence based assessment tools for oral health should be developed to allow nursing staff to effectively and safely assess a child’s oral health status. Alongside this educational programmes for nurses and student nurses should be developed and validated to ensure the education they receive is
suitable. Lastly further research is required into nurses’ perception and attitudes towards oral health promotion and general health promotion. As the results from this should help to tailor educational programmes and identify need.

It is acknowledged that within any research process, limitations can be found. This study used a cross-sectional quantitative, descriptive approach which allowed it to achieve its aim of describing a current situation at one period in time. However this does not detail how the opinions of the students developed over time nor can it provide detailed analysis of attitudes and opinions. Therefore further research is required to allow such analysis to take place.

The sample used within this study was only small and comprised of students from one university, making it difficult to generalise the results to other nursing students. Furthermore the MNursSci course is unique to the University of Nottingham and therefore will have a different culture and educational experience to other nursing students. However the population used to sample from was only small and the data collected was found to be representative to this university. It is advised though that further research is required to allow generalisation to other nursing student bodies.
The method of data collection also has its limitations when considering the effect of the students conferring answers on the data produced. This limitation links into social desirability bias where the student confer to assure the correct answers are given to the researcher (Parahoo, 2006). This is a definite risk as the students are peers to the researcher and therefore may sympathise with the project being undertaken. Both of these limitations could decrease the reliability and validity of the results (Parahoo, 2006). An expected limitation was incomplete questionnaires, which was partly due to the first year students not experiencing placements. However the significance of the results was not affected as much as expected. If this project was to be repeated again, students would be asked to complete the questionnaires individually and the questionnaire would be altered to suit the needs of students with no placement experience.

This study has highlighted areas for improvement within education. The implications of this may be difficult to achieve immediately due to resource and time constraints and lack of evidence base to work from. However the inclusion of oral health and health promotion may improve student satisfaction as whole. The changes will hopefully produce students better prepared for practice and with the enthusiasm to influence the nursing role and practice. It has been
clear that the lack of inclusion of oral health was not purposeful and it has to be appreciated how challenging course design can be, especially for nurses where so much is expected within a short space of time. As a result compromises have to be made.

Similar to education, changes to practice may be difficult to initiate but are desperately required. The main implications for practice are the need for support, openness and encouragement for the development of nursing and evidence based practice. There is a definite need to increase confidence in nursing staff to be independent in ability to assess need and provide health promotion to children and families. The research process has demonstrated how changing practice is a complex process, requiring support and input from all levels, strategic, operational/resource and individual. As such the research has taught the author the importance of taking responsibility for their practice and being passionate for the improvement of services and the integration of evidence based practice. However it has also demonstrated the need for compromise when prioritising care needs, for example in a hospital the acute care needs will come first, and the important element now is to remember the child and family’s long term needs and goals once the acute phase has past.
For children and families this study could help provide a better service, by providing comprehensive, holistic care. This is especially important for social deprived families who are often poor at accessing multiple services. Perhaps most importantly, the inclusion of oral health into child protection training could mean vulnerable children are identified, who may before have been missed. By raising the profile of oral health this could lead to increased research and political interest, helping to develop better care and services for children and families and contributing to social change. All of which contributes towards the WHO’s oral health 2020 goals.