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# Dental Hygiene Special Needs Education in New Mexico-A Survey

Juliet Roybal

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*Approved by the Thesis Committee:*

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**DENTAL HYGIENE SPECIAL NEEDS EDUCATION IN NEW  
MEXICO-A SURVEY**

**by**

**JULIET ROYBAL RDH, BS**

**BACHELOR OF SCIENCE IN DENTAL HYGIENE  
THE UNIVERSITY OF NEW MEXICO**

**THESIS**

Submitted in Partial Fulfillment of the  
Requirements for the Degree of

**Master of Science  
Dental Hygiene**

The University of New Mexico  
Albuquerque, New Mexico

**July 2012**

## Dental Hygiene Special Needs Education in New Mexico-A Survey

By

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B.S., Dental Hygiene, University of New Mexico, 2007

M.S., Dental Hygiene, University of New Mexico 2012

### Abstract

The number of institutionalized persons with developmental disabilities has decreased by 75 percent and those living in psychiatric facilities has decreased by 91 percent since deinstitutionalization began in the 1960<sup>s</sup><sup>1-3</sup>. These people have been integrated into community settings only to find out that their community is often unprepared to meet their dental and oral health needs<sup>2,3</sup>. Those with developmental disabilities are experiencing an increase in life expectancy due to advances in medical care<sup>3</sup>. Dental professionals often avoid treating this population in fear of behavioral support techniques that may be unfamiliar to them<sup>15</sup>. Compounding this is the fact that many individuals may experience increased health problems due to unresolved oral health issues<sup>3</sup>. This issue requires a number of solutions of which education of dental providers remains foremost<sup>7, 8, 9, 10, 11, 12</sup>. The Commission on Dental Accreditation (CODA) has responded with a revision of the academic standard regarding special care education<sup>9</sup>. This study surveyed New Mexican dental hygiene students in their final year of study in order to assess the amount of time students received both clinically and didactically in treating persons with developmental disabilities. This was then compared to the students'

confidence level and likelihood to treat persons with developmental disabilities in the future.

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## **Chapter I: Introduction**

The purpose of this study is to investigate dental hygiene students' educational experiences regarding the special needs population. The population with developmental disabilities continues to be one that is underserved<sup>2,3</sup>. A review of the literature suggests shortcomings in special needs education that is taught in dental education<sup>7</sup>. This study will investigate the amount of time dental hygiene students are educated on topics pertaining to persons with developmental disabilities. This study will also investigate students' attitudes and confidence in treating this population.

### **Statement of the Problem**

- How many didactic hours are spent educating dental hygiene students on persons with developmental disabilities?
- How many clinical hours do dental hygiene students spend treating/observing treatment of persons with developmental disabilities?
- How do Associate's and Bachelor's Degree programs differ in special needs education?
- How confident are dental hygiene students in treating this population after graduating dental hygiene school?
- How likely are dental hygiene students to choose to exclusively or primarily treat persons with developmental disabilities?
- Does the amount of time spent learning (both didactically and clinically) have any effect on attitudes towards dental hygiene treatment of people with developmental disabilities or the likelihood to treat persons with developmental disabilities?

- **Significance of the Problem**

Prior to the 1960's the majority of the adult population with developmental disabilities lived in institutionalized settings where they also received medical and dental attention<sup>3</sup>. From the beginning of deinstitutionalization to the late 1990's the number of institutionalized persons with developmental disabilities decreased by 75 percent and those living in psychiatric facilities decreased by 91 percent<sup>3</sup>. This means more disabled individuals now reside in community-oriented group residences and personal family residential settings<sup>3</sup>. These people have been integrated into community settings only to find out that their community is often unprepared to meet their dental and oral health needs<sup>2,3</sup>. This step forward in our system of care for those with developmental disabilities has become a step back for attention to their health needs<sup>2,3</sup>. In most cases, those who lived in institutionalized settings had their dental needs met by staff that were qualified and experienced in treating persons with disabilities. Deinstitutionalization has created a problem with access to care for persons with developmental disabilities because many providers in private dental offices are not prepared nor qualified to treat those individuals with developmental disabilities.

Other factors have also contributed to access to oral health care for this population. Those with developmental disabilities are also experiencing an increase in their life expectancy due to advances in medical care and enjoying longer, healthier lives<sup>3</sup>. Most of these individuals are faced with a variety of medical challenges or compromises<sup>3</sup>. Additionally, the population with developmental disabilities may experience increased health problems due to unresolved oral health issues<sup>2,3</sup>. Periodontal diseases are a risk factor for many systemic diseases such as diabetes and cardiovascular

problems<sup>3</sup>. To compound this situation is that fact that there more people with developmental disabilities are in need of dental treatment in a population which already has problems with access to dental care.

Providing quality treatment to this underserved population, some say, starts with *education* of professionals who can provide services<sup>7</sup>. Haden stated that academic dental institutions are the fundamental underpinning of the nation's oral health<sup>7</sup>. He further stated that educational institutions, dental schools, allied dental education, and advanced dental education programs are the source of a qualified workforce, influencing both the number and type of oral health providers<sup>7</sup>.

Availability of qualified and willing clinicians is dependent upon an education system that prepares dental graduates to willingly and confidently treat persons with developmental disabilities.

### **Operational Definitions**

**Developmental Disability:** Those disabilities that are acquired at birth or sometime during the stages of development which usually means before age 22.

**Periodontal diseases:** Periodontal diseases are a group of diseases that affect the tissues that support and anchor the teeth.

**Bacterial Endocarditis:** An infection of the inner surface of the heart or the heart valves caused by bacteria usually found in the mouth, intestinal tract or urinary tract.

**Behavioral Support:** The effort by families, caregivers, therapists, and also dentists to control disruptive behavior of people with special needs during daily activities or clinical treatment

**Assumptions:**

Assumptions include, but are not limited to:

- The findings of this study are based upon the assumptions that students are honest in their answers.
- The findings of this study are based on the assumption that students are taking the time to realistically answer each and every question.

**Limitations:**

Limitations include, but are not limited to:

- An unrealistic perception by some students who may think they are “confident” or “likely” to treat persons with developmental disabilities. If students who answer “confident” or “likely” on the survey described below (in reference to a possible future of treating persons with developmental disabilities) have not received enough clinical or observation time, their perceptions may be based merely on optimism and not on any experience which leads them to feel that they are “confident” or “likely” to treat.
- This population being surveyed is small and specific to one state. Findings therefore cannot be used to infer to a larger population such as on a national scale. In order to make inferences to dental hygiene students nationwide, a larger study

would have to be conducted in which students from across the nation were surveyed. This study looks specifically at dental hygiene students in New Mexico.

### **Methodology:**

This survey was determined “exempt” in terms of human research and was approved by The University of New Mexico School of Medicine Human Research Protection Office (HRPO 12-123). In order to investigate dental hygiene special needs education, a link to seventeen question survey was sent, via e-mail to dental hygiene students across New Mexico. The Google Documents “forms” tool was utilized in creating a survey that was easily accessible. An e-mail explaining the survey was initially sent to directors of four dental hygiene schools in New Mexico. These four schools include: The University of New Mexico, San Juan Community College, Dona Ana Community College, and Eastern New Mexico University. The survey was then sent, by the directors, for dental hygiene students to respond. The e-mail contained a consent form and a link to the survey. The survey was initially sent to directors on April 4<sup>th</sup>, 2012 and by April 6<sup>th</sup> 2012, all four schools had forwarded the survey to its senior dental hygiene students.

The questions on the survey included fill-in-the-blank questions regarding amount of time spent both clinically and didactically learning to treat persons with developmental disabilities. Amount of time spent with each developmental disability was listed as a separate question for each. The survey concluded with questions regarding confidence in treating persons with developmental disabilities as well as likelihood that the student

would eventually seek/accept a position treating persons with special needs. After two weeks, the link to the survey was no longer available.

Data collected from the survey which included amount of time spent didactically and clinically learning about treating persons with disabilities, confidence in treating persons with disabilities, and the likelihood of treating persons with disabilities were then analyzed using the data analysis program R and Microsoft Excel. Relationships between hours of education and confidence as well as likelihood to treat persons with disabilities were examined. Rates of confidence and likelihood to treat were also compared to the amount of didactic versus clinical training. Also examined were differences in education received for bachelor's degree students versus associate's degree students.

## **Chapter II: Special Needs Education in Dental Hygiene-A Review of the Literature**

### **Introduction**

The population with developmental disabilities remains a dentally underserved population<sup>1</sup>. This population does not receive adequate care and this continues to be a growing national dilemma<sup>1</sup>. Data suggest that one of every two persons with a significant disability cannot access adequate resources to receive necessary dental treatment<sup>1</sup>. Developmental disabilities include those disabilities that are acquired at birth or sometime during the stages of development which usually means before age 22<sup>1</sup>. Developmental disabilities include (but are not limited to): cerebral palsy, Down syndrome, epilepsy, autism spectrum disorder, and intellectual disabilities<sup>1</sup>.

### **Deinstitutionalization**

Prior to the 1960's the majority of the adult population with developmental disabilities lived in institutionalized settings where they received medical and dental attention<sup>2,3,4</sup>. It was not as necessary or crucial for an average dental professional to be skilled in treating those with developmental disabilities because it was highly unlikely that most dental providers would treat individuals with developmental disabilities<sup>3</sup>. Very few dental and medical schools included any extensive didactic or clinical training in the treatment of this population since it was rare that these individuals with developmental disabilities would be treated in private clinical settings<sup>3</sup>. The passage of The Americans with Disabilities Act in 1990 as well as *Olmstead vs. L.C.* in 1999 served as crucial events for the population with developmental disabilities<sup>3</sup>. Both events served as legal mandates that directed the integration of this population into society<sup>3</sup>.

From the beginning of deinstitutionalization to the late 1990's the number of institutionalized persons with developmental disabilities decreased by 75 percent and those living in psychiatric facilities decreased by 91 percent<sup>4,5</sup>. This meant more individuals with disabilities were now residing in community-oriented group residences and personal family residential settings<sup>3</sup>. Many large, state-run facilities have closed due to this movement<sup>3</sup>. This deinstitutionalization of those with developmental disabilities is a major contributing factor to inadequate access to care for the population<sup>2,3,4,5</sup>. Those who lived in institutionalized settings had their dental needs met by staff that were usually qualified and experienced in treating persons with disabilities. These people have been integrated into community settings only to find out that their community is often unprepared to meet their dental and oral health needs. This step forward in our system of care for those with developmental disabilities has become a step back for attention to their health needs<sup>3,5</sup>.

### **Increased Life Expectancies**

Other factors have also contributed to the access to oral health care for this population<sup>3</sup>. In addition to the fact that more people with developmental disabilities live in the communities due to deinstitutionalization, their life expectancies have increased dramatically as well<sup>3</sup>. For example, the life expectancy for an individual with Down syndrome in the 1960s was three or four years of age and is now is fifty five years of age<sup>6</sup>. Many individuals with Down syndrome live into their sixties and seventies<sup>6</sup>. Those with other developmental disabilities are also experiencing an increase in life expectancy due to advances in medical care and are enjoying longer, healthier lives<sup>3</sup>. To compound this situation is that fact that there are more people with developmental disabilities in

need of dental treatment in a population which already has problems with access to dental care.

### **Oral-Systemic Issues**

This population is underserved and they are also at risk for untreated oral diseases<sup>2,3</sup>. The US Surgeon General highlighted this in the oral health report published in 2000. The report indicated that patients with special needs have disproportionate amounts of oral disease and problems with access to oral health care service<sup>2</sup>. Most of these individuals are already in a compromised state when it comes to health<sup>3</sup>. The population with developmental disabilities may experience increased health problems due to unresolved oral health issues<sup>2,3</sup>.

Periodontal diseases are a risk factor for many systemic diseases such as diabetes and cardiovascular problems<sup>3</sup>. Additionally, periodontal diseases are a problem for the general population and even more so for the developmentally disabled population due to difficulties with oral hygiene and side effects from many medications<sup>3</sup>. Many individuals are on anticonvulsants which can cause gingival overgrowth and exacerbate the problem of periodontal diseases<sup>3</sup>. Bacterial endocarditis can pose a threat to this population due to cardiac defects often found in individuals with Down's syndrome<sup>3</sup>. Aspiration pneumonia may also be associated with poor dental health<sup>3</sup>. In fact, Langmore et al. stated that poor oral hygiene can place a person at risk of repeated episodes of pulmonary infection and subsequent chronic lung disease<sup>3</sup>. Many individuals who depend on caregivers for feeding can be at an increased risk for aspiration and the poor oral hygiene can increase the risk of bacteria entering the lungs<sup>3</sup>. Basically, poor

oral hygiene can lead to dental caries and periodontal diseases which can lead to more serious systemic problems and discomfort for persons with developmental disabilities.

### **Responsibility of Dental Education**

The population of those with developmental disabilities is in great need for adequate oral care due to the fact that many are already compromised medically and it is inarguable that they are an underserved population<sup>2, 3</sup>. Education must have a major role in the multidimensional solution to this problem<sup>7, 8, 9, 10, 11, 12</sup>. Haden et.al places the majority of the responsibility for this crisis on dental academic institutions stating the following:

“Academic dental institutions are the fundamental underpinning of the nation’s oral health. As educational institutions, dental schools, allied dental education, and advanced dental education programs are the source of a qualified workforce, influencing both the number and type of oral health providers. As centers of discovery, academic dental institutions ensure that oral health practice evolves through research and the transfer of the latest science. As providers of care, academic dental institutions are a safety net for the underserved, centers of pioneering tertiary care, and contributors to the well-being of their communities through accessible oral health care services. The interlocking missions of education, research, and patient care are the cornerstones of academic dentistry that form the foundation upon which the dental profession rises to provide care to the public.”<sup>7</sup>”

## The Commission on Dental Accreditation's Reform

While the crisis of treatment of the developmentally disabled requires more than a simple solution, few would argue that it begins with the education of dental professionals, including dental hygienists<sup>13</sup>. The Commission on Dental Accreditation (CODA) has responded to this oral health disparity by adjusting their standards for special needs education for oral health care professionals<sup>13</sup>. On July 30<sup>th</sup>, 2004 CODA adopted new standards for dental and dental hygiene education programs with hopes of better preparing dental and dental hygiene students to treat people with developmental disabilities and those with other special needs<sup>13</sup>. CODA wanted to ensure that graduates would receive enough clinical and didactic training in treating patients with special needs. The specific standard states: “*Graduates must be competent in assessing the treatment needs of patients with special needs.*”<sup>9</sup> Under this specific “competency” in the CODA document, the “Intent” is stated as follows:

*“An appropriate patient pool should be available to provide a wide scope of patient experiences that include patients whose medical, physical, psychological, or social situations may make it necessary to modify procedures in order to provide dental hygiene treatment for that individual. Student experiences should be evaluated for competency and monitored to ensure equal opportunities for each enrolled student. Clinical instruction and experiences with special needs patients should include instruction in proper communication techniques and assessing the treatment needs compatible with patients.”*<sup>9</sup>

This reform of CODA's section on special needs was a result of advocacy by Special Olympics and a number of organizations including the American Academy of Developmental Medicine and Dentistry, the American Dental Education Association, the Academy of Dentistry for Persons with Disabilities and the Special Care Dentistry Association<sup>10</sup>. These organizations, as a whole, believed that CODA needed to revise the standards in order to ensure that dental graduates were truly prepared in every way to treat this population<sup>10</sup>.

The lack of preparation for dental and dental hygiene students to treat people with developmental disabilities was highlighted at the Surgeon General's Conference on Health Disparities and Mental Retardation in 2001<sup>10</sup>. A recent study had reported that 50 percent of dental students had reported no clinical training in this area and 75 percent had reported little to no preparation in providing care for these patients<sup>10</sup>. In response to this, CODA formed a committee focused solely on revising the standards and did so, finally, in 2006<sup>10</sup>.

### **Related Research Studies**

A few years have passed since the revision of CODA's standards on special needs education. While changes, of course, will not be expected to happen immediately, evaluation should occur to see whether any changes have been made. A more recent study was conducted by Dehaitem et al. to evaluate how students are now being taught, after the revision to CODA's standards<sup>13</sup>. This study was distributed to program directors specifically to evaluate dental hygiene programs at 240 junior colleges, four-year universities, dental schools, and technical schools in the United States.

The survey asked questions regarding the amount of classroom time covering issues dealing with persons with developmental disabilities, as well as clinical experience in this area<sup>13</sup>. The survey also inquired as to which specific disabilities were covered and to what extent<sup>13</sup>. Other factors assessed included who was responsible for the instruction and what type of formal education they possessed. The survey reported a forty nine percent response rate and the researchers took into consideration that those answering were the directors themselves and they were answering based on their own perception of their own program<sup>13</sup>. The survey covered the following inquiries:

- “Who instructs the students?”
- “Which specific aspects of clinical interactions with patients with special needs are addressed in the curriculum?”
- “How is the material taught (such as in classroom settings, clinics, or community-based external rotations and in lectures or case presentations)?”
- “When is this material introduced and discussed with the students?”
- “How are educational outcomes/competencies assessed? and
- Which resources are used when teaching about this topic?”<sup>13</sup>

Over eighty percent of the respondents reported that their students have didactic teaching covering the following: addictions (87.3 percent), Down syndrome (86.3 percent), cerebral palsy (84.3 percent), developmental delays (80.4 percent), and Alzheimer’s disease (85.3 percent)<sup>13</sup>. Seventy percent of programs reported to covering Autism and ADHD in the classroom<sup>13</sup>. The findings revealed that while nearly all US dental hygiene programs have some form of didactic special needs education (all of which vary in type and amount), less than fifty percent of these programs require their students to experience any type of *clinical* education with persons with disabilities<sup>13</sup>.

Directors were also asked to rate the priority for this type of education in their program with fifty four percent reporting it as very high priority, thirty six reporting it as high priority and a eight percent reporting it as average priority<sup>13</sup>. Directors were also asked post graduation, whether or not they felt their students were competent and ready to deal with this population<sup>13</sup>. Twenty two percent of respondents felt their students were highly competent, forty five percent said their students were “fairly competent” and thirty percent said their students were “somewhat competent” at graduation<sup>13</sup>. The majority of U.S. dental hygiene school directors feel that their special needs education is adequate<sup>13</sup>.

There is an existing need for qualified clinicians able to provide necessary oral health treatment to this population<sup>7-12</sup>. If the solution starts with education, US dental hygiene schools must improve their special care education in order for the community with developmental disabilities to no longer be a population that is underserved<sup>13</sup>. The researchers who conducted the most recent survey of US dental hygiene schools indicated that while *attitudes* towards the treatment of persons with developmental disabilities have been addressed, more research can focus on the students’ educational experiences in an effort to improve training in this area<sup>13</sup>. They also suggested that faculty could be surveyed to indicate how confident they are in preparing students, possibly leading to more resources, education, and preparation for themselves<sup>13</sup>.

Another recent study by Krause et al. surveyed dental school faculty in charge of special needs education<sup>14</sup>. A survey was forwarded by directors to whoever taught or oversaw special needs education<sup>14</sup>. The survey found that the more than one half of schools (64 percent) who responded did not have a special course for special needs education but that this education was incorporated into general clinical education<sup>14</sup>. Most

outcomes assessments were done simply using written exams (86 percent)<sup>14</sup>. The study concluded with a suggestion to investigate and develop the most beneficial educational practices when treating this population<sup>14</sup>. Both previously mentioned studies can be compared to a study done by Wolf et al. to investigate dental students' clinical and didactic time spent learning about/treating persons with intellectual disabilities<sup>11</sup>. These facts were then correlated with attitudes towards treatment of the population including "confidence" and "willingness to treat"<sup>11</sup>. Specifically, the study focused on dental students and the treatment of persons with intellectual disabilities<sup>11</sup>. The study made correlations between small amounts of classroom and clinical time with decreased willingness to treat as well as confidence in treating this population<sup>11</sup>.

### **Communication and Behavioral Support: Obstacles to Care**

A 1990 study done by Bickley revealed that many dental hygienists were not merely concerned with any disability that a patient might have but any obstacles or barriers that would prevent them from treating the patient the way they normally would<sup>15</sup>. The study suggested that dental hygienists' concerns about the treatment of patients with special needs were related to the type or manifestation of a patient's disability<sup>15</sup>. Dental hygienists were not so much concerned about actually carrying out the treatment, but more with the perceived uncertainty of behavioral and communication difficulties while treating these patients<sup>15</sup>. This finding indicated that dental hygienists' concerns might be largely related to a lack of understanding how certain disabilities might affect their interactions with the patients.<sup>15</sup>

Treating persons with developmental disabilities may pose more of a challenge than treating the general population<sup>16</sup>. Success in treating persons with disabilities should

require additional time and training<sup>16</sup>. Dental hygienists and dental professionals often avoid treating this population in fear of behavioral support techniques that may be unfamiliar to them<sup>15</sup>. Behavioral support can be defined as the effort by families, caregivers, therapists, and dentists to control disruptive behavior of people with special needs during daily activities or clinical treatment<sup>16</sup>. If dental professionals are not familiar with basic behavioral support, the tendency is to refuse to treat the person and refer him or her somewhere else<sup>16</sup>. Unfortunately this “somewhere else” may not even exist, be hundreds of miles away, or be overwhelmed with an already existing patient base<sup>16</sup>. Evidence exists that suggests that dental education lacks scope and breadth in the concepts of behavioral support<sup>16</sup>. This lack of education on such a vital part of treating persons with disabilities is said to possibly be the biggest barrier to access to oral health care for people with special needs<sup>16</sup>.

### **Chapter III: Methods and Materials**

#### **Sample Defined:**

The sample includes all dental hygiene students, in their final year of studies at the following dental hygiene schools: The University of New Mexico, San Juan Community College, Dona Ana Community College, and Eastern New Mexico University. This includes approximately 60 dental hygiene students.

#### **Research Design**

A simple survey was created, using Google Documents, which asked questions pertaining to amount of time spent didactically as well as clinically with persons with developmental disabilities. The survey asked about clinical and didactic time spent on six developmental disabilities: Intellectual disabilities, Down syndrome, Cerebral Palsy, autism spectrum disorders, ADHD, and traumatic brain injury. Questions concerning the amount of time spent with each disability were in short answer form. The students were able to type in the approximate amount of time spent in increments of .5 of an hour. The remaining questions (demographics as well as attitudes) were in multiple choice form. The students were simply e-mailed the link to the survey by their director and following a short consent to anonymous survey, were told to click on the link to participate in the survey. The link to the survey was e-mailed to the directors on April 4<sup>th</sup> 2012 and was available for students to take for three weeks. The survey was no longer available on April 27<sup>th</sup>, 2012. This survey/research was determined “exempt” and was approved by The University of New Mexico School of Medicine’s Human Research Protection Office (HRPO #12-123). Google Documents survey tool collects online survey data in the form

of a spreadsheet which was then imported into a statistical analysis program R as well as Microsoft Excel. Descriptive statistics were used to present an overview of the data and inferential statistics showed whether any relationships existed between variables.

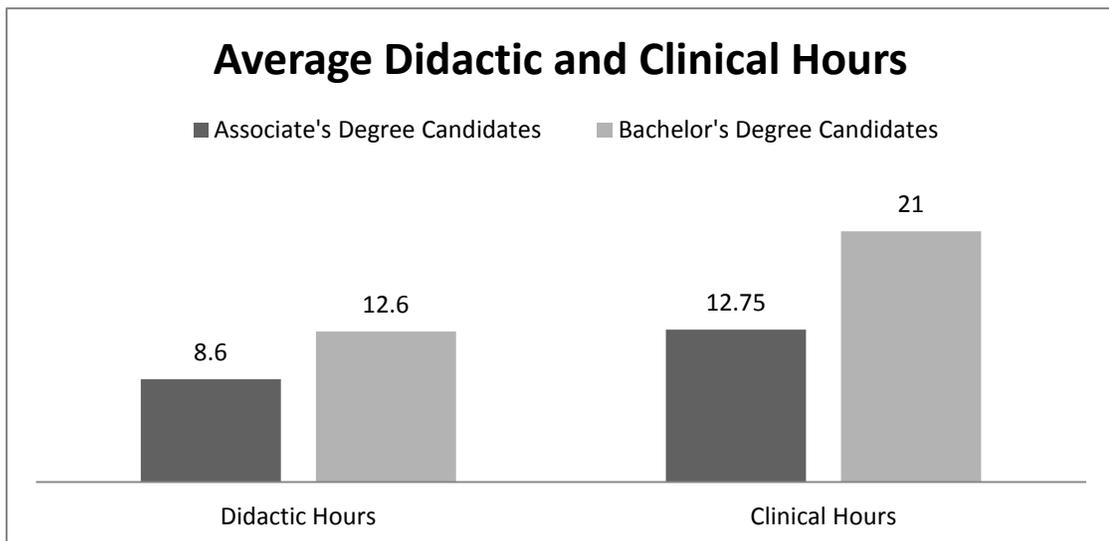
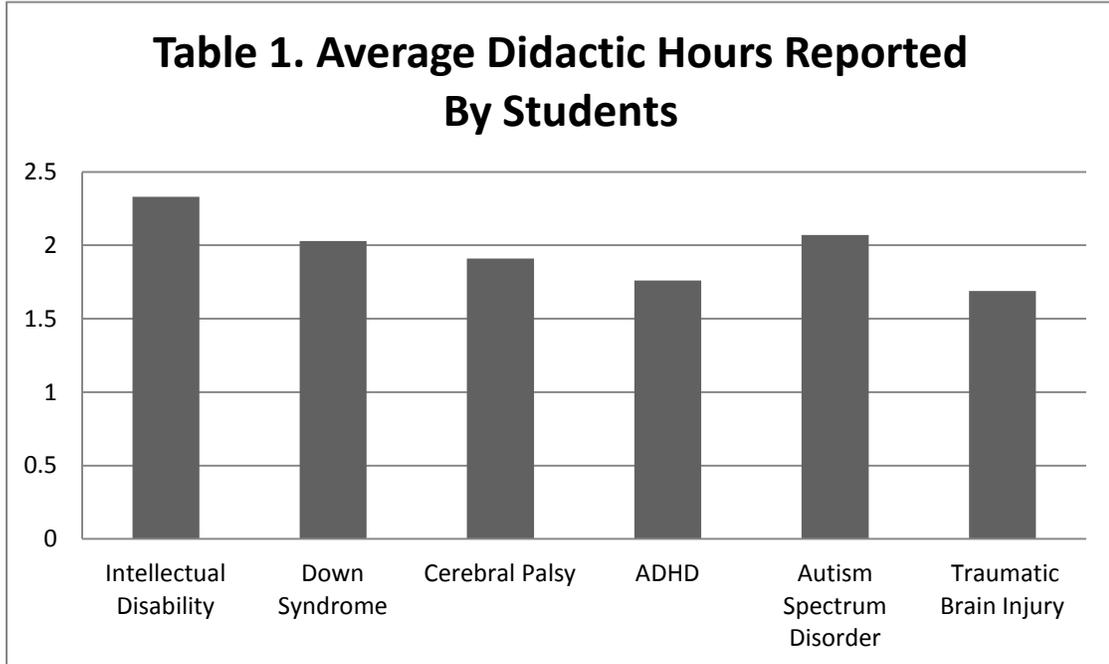
Descriptive data collected included average didactic and clinical learning, how confident students felt (near the time of graduation) treating individuals with developmental disabilities, how confident students felt using behavioral support techniques, and the likelihood they would accept or pursue a position involving the treatment of persons with developmental disabilities. Variables compared were amount of classroom time and/or didactic time for students in Associate's degree programs and students in Bachelor's degree programs. Whether or not a relationship existed among students reporting more clinical time and attitudes of confidence and likelihood to treat were also examined.

## **Chapter IV: Results and Discussion**

### **Results**

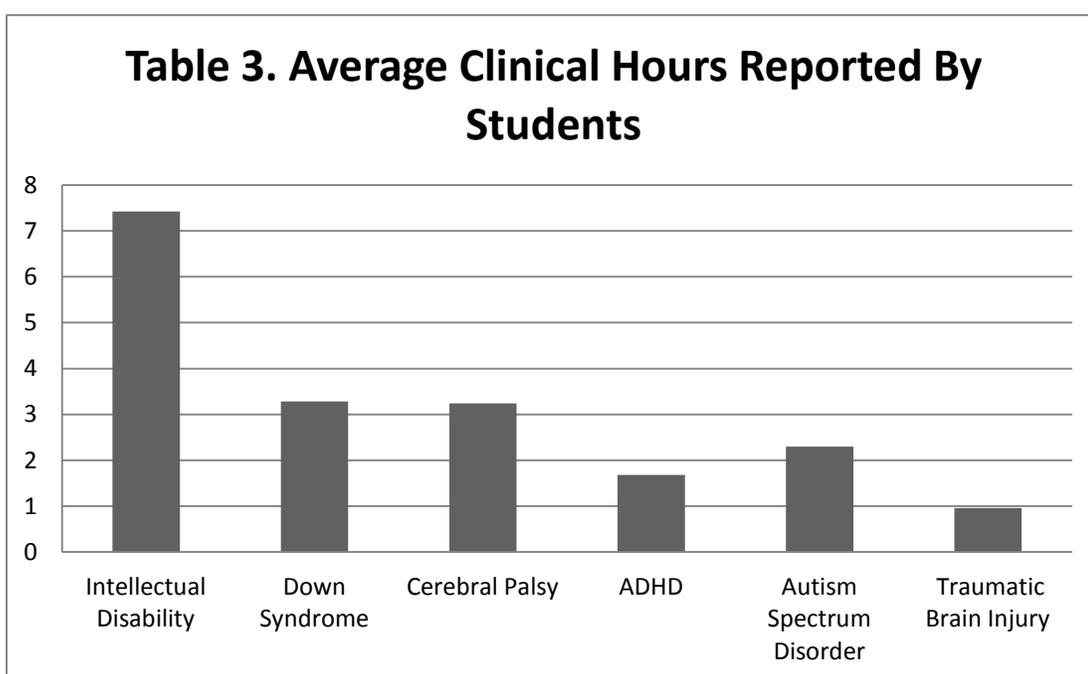
Of the potential sixty NM dental hygiene students to respond to the survey, 25 students (forty two percent) responded by completing the online survey. Twenty percent (seven students) of NM Associate program's final year students completed the survey while seventy five percent (18 students) of NM Bachelor's degree candidates completed the survey. The first objective was to determine how many didactic or classroom hours students felt they received in regards to each developmental disability. As a whole (both Associate and Bachelor programs) students reported having (on average) the following amount of didactic hours for each developmental disability: Intellectual disabilities (2.33 hours), Down syndrome (2.03 hours), cerebral palsy (1.91 hours), ADHD (1.76 hours), Autism Spectrum Disorder (2.07 hours), and Traumatic Brain Injury (1.69 hours). Associate degree program students reported an average of 8.6 total hours of didactic special needs (developmental disabilities) education. Bachelor degree program students reported an average of 12.75 total hours of didactic special needs (developmental

disabilities) education (Table 2).



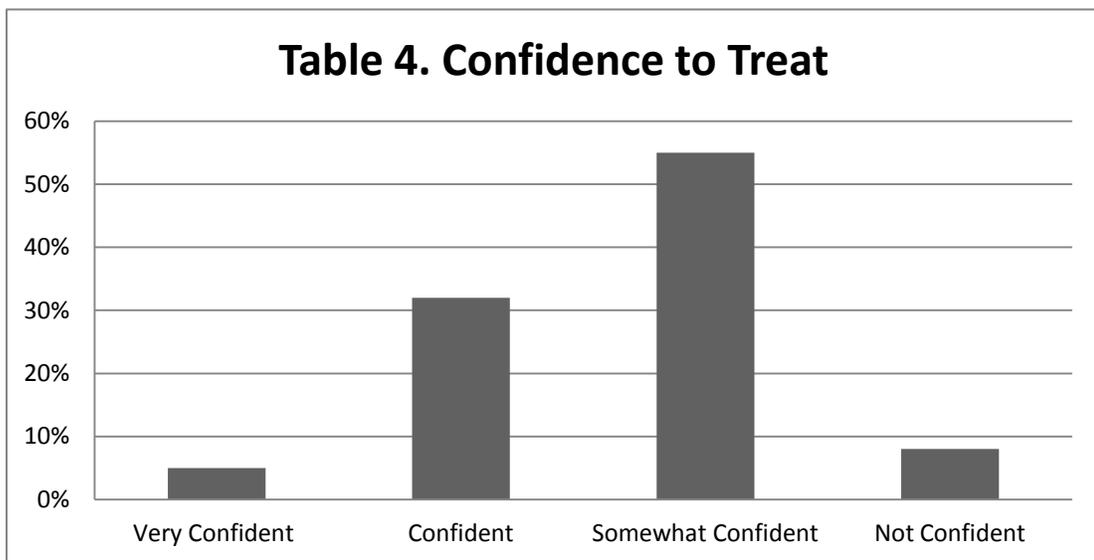
In addition to didactic hours, students were asked how many hours they received observing or treating patients with developmental disabilities in a clinical setting (Table 2). As a whole (both Associate and Bachelor programs) students reported having the following amount of clinical hours for each developmental disability: Intellectual

disabilities (7.42 hours), Down syndrome (3.28) hours, cerebral palsy (3.24 hours), ADHD (1.68 hours), Autism Spectrum Disorder (2.3 hours), and Traumatic Brain Injury (.96 hours). On average, Associate degree candidates reported having 12.6 hours of clinical experience while Bachelor degree candidates reported having 21 hours of clinical experience (Table 2). A disproportionate amount of Associates degree candidates to Bachelor's degree candidates participated in the survey, thus making it difficult to make any concrete comparisons between the two groups.



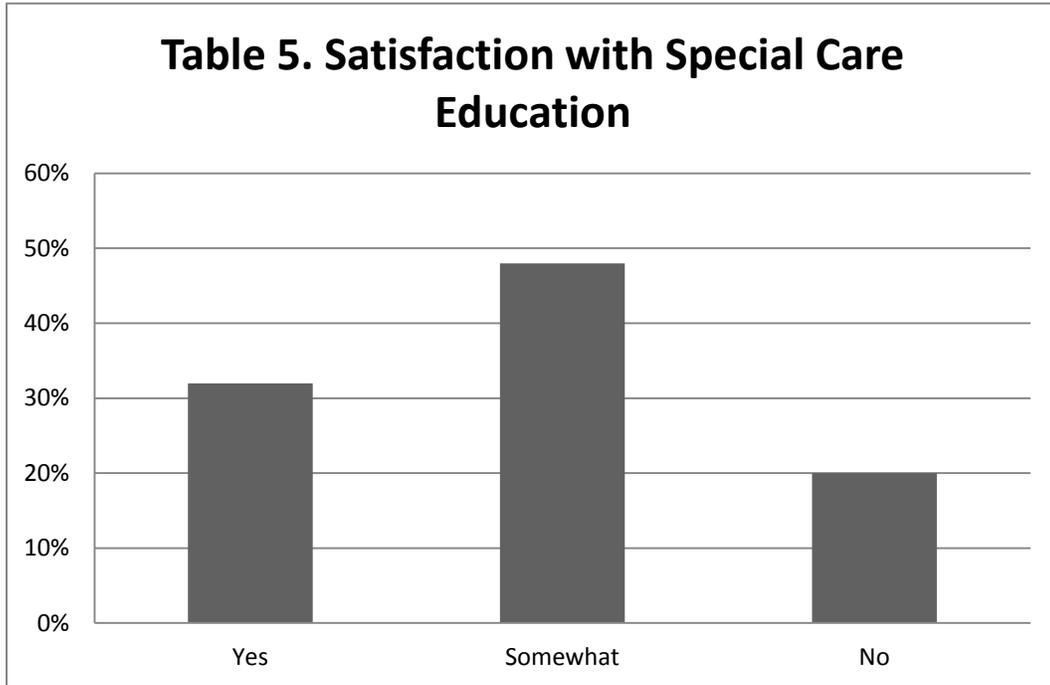
After collecting descriptive data concerning amount of classroom time and clinical experience, additional descriptive data were assessed concerning dental hygiene students' attitudes towards treating people with developmental disabilities. Students were asked how confident they felt treating people with special needs, whether or not they felt they received adequate special care education, as well as the likelihood they would treat people with developmental disabilities in the future. Fifty five percent of the

students surveyed indicated that they were “Somewhat confident” to treat people with developmental disabilities. Thirty two percent indicated that they were “Confident,” eight percent indicated that were “Not Confident,” and five percent indicated that they were “Very Confident (Table 4).” A similar pattern was seen when the students were asked to rate their confidence in the use of behavioral support techniques. Forty four percent of students considered themselves “Somewhat Confident” in the usage of behavioral support techniques. Thirty two percent said they were “Confident,” twenty percent considered themselves as being “Not Confident,” and four percent considered themselves “Very Confident (Table 6).”

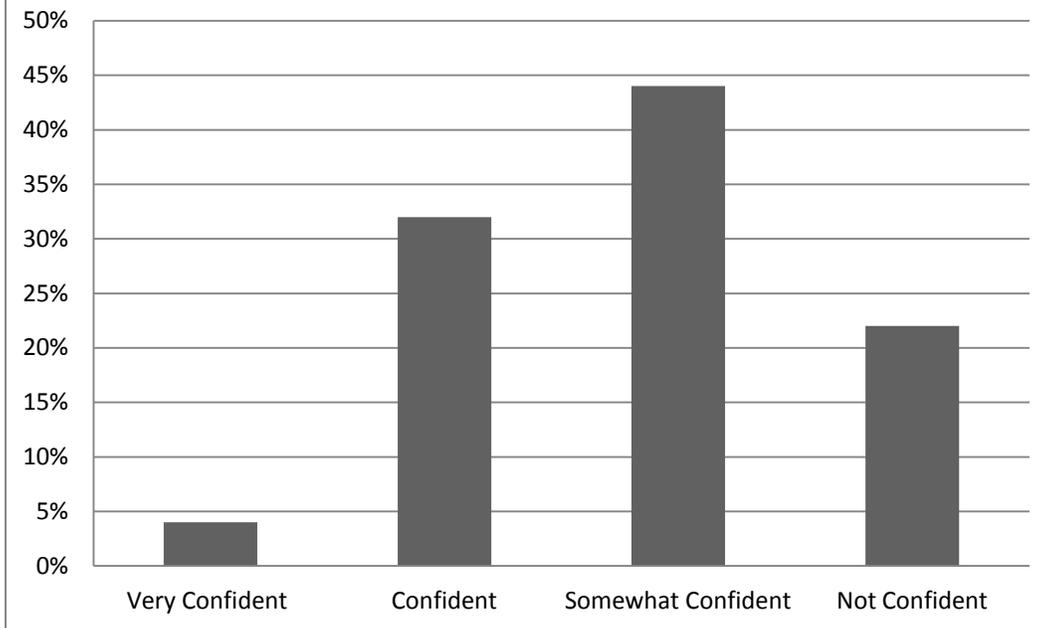


When asked whether or not they felt they received adequate education (both clinically and didactically) to adequately treat persons with developmental disabilities, forty eight of the respondents indicated “Somewhat.” Thirty two percent indicated “Yes” to receiving adequate education and twenty percent indicated “No (Table 5).” The survey concluded with a question regarding the likelihood that they would seek or accept a position which required them to treat people with developmental disabilities on a regular

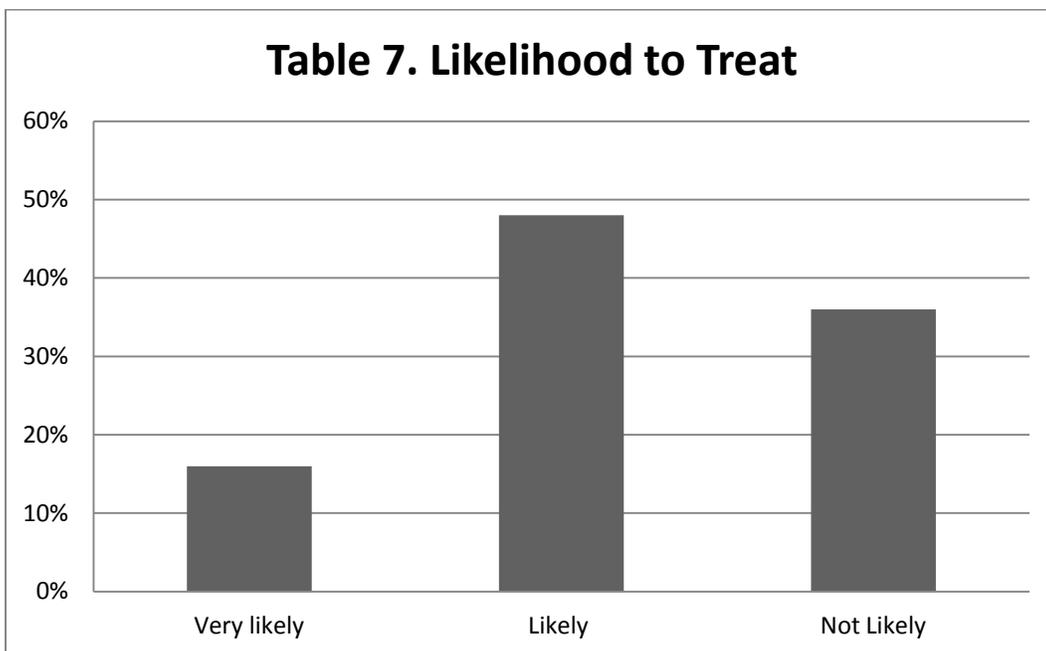
basis. Forty eight percent indicated that they were “Likely” to seek or accept such a position while thirty six percent indicated that they were “Not likely” and sixteen percent indicated that they were “Very likely (Table 7).”



**Table 6. Confidence in the Use of Behavioral Support Techniques**

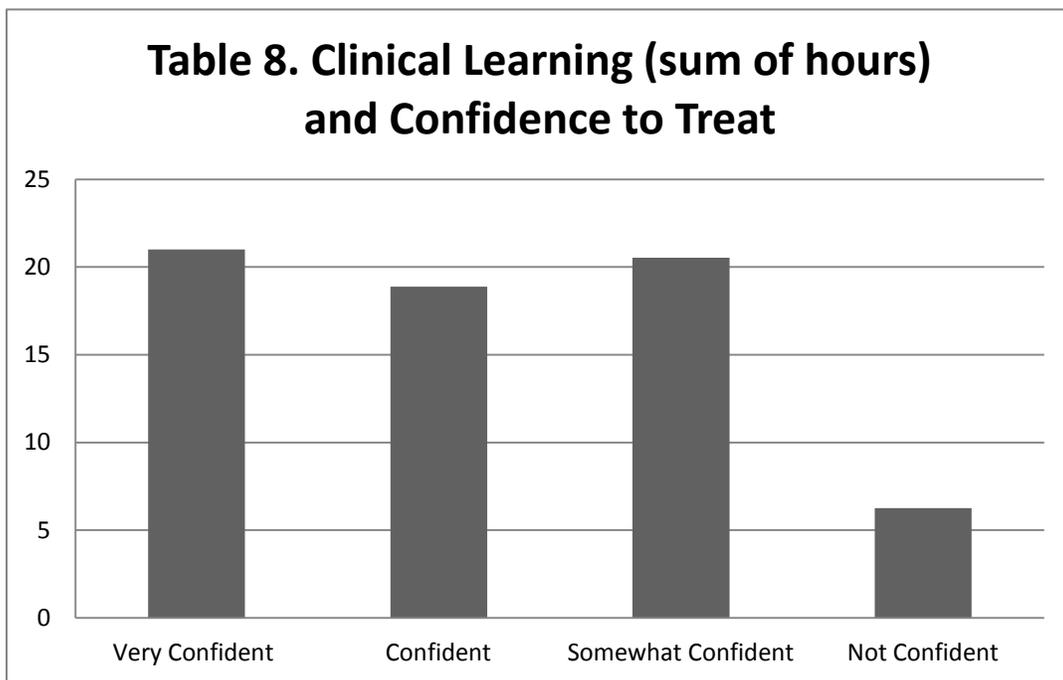


**Table 7. Likelihood to Treat**

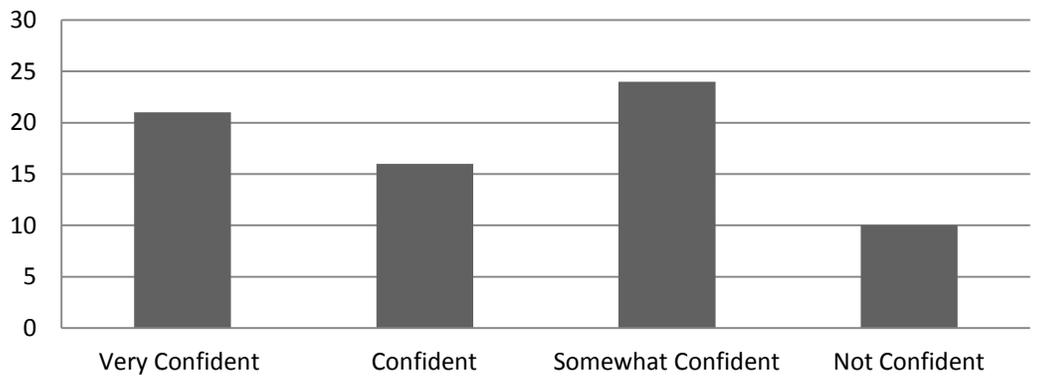


While many of the responses to questions regarding *didactic* education were similar amongst students, clinical learning reported seemed to vary greatly. In order to

analyze clinical learning in relation with confidence to treat and confidence with behavioral support techniques, the sum (total) of all the responses was then grouped with each response to see if those who were more confident reported more hours and those who were less confident reported less hours (Tables 8 and 9). The answers were consistent with this prediction with the exception of those who answered that they were “Confident” and “Somewhat Confident.” These groups had a very similar sum of clinical education time. In confidence of usage of behavioral support techniques, the sum of the hours of those who chose “Somewhat Confident” was actually greater than that of those who chose “Confident” group.



**Table 9. Clinical Learning (sum of hours)  
and Confidence with Behavioral Support  
Techniques**



## **Discussion**

There seems to be many roadblocks on the way to improving oral health care for persons with developmental disabilities. Deinstitutionalization and increased life expectancies create a larger population of persons with developmental disabilities which subsequently increases demand on today's dental care system. Those with developmental disabilities may already be in a state of compromised health and have an increased occurrence of oral diseases due to lack of adequate homecare (which can be attributed to dexterity issues, cognitive issues, and reliance on others for care) and side effects from many medications.

The need is evident, the solution is not simple. As stated earlier, many suggest inadequate dental education, stating that taking care of this population begins with education and preparing today's dental and dental hygiene students with necessary knowledge and skills to confidently and adequately treat persons with special needs. The first step has been made towards improving education as CODA has made a revision specifically aimed at improving special needs education in dental education. Whether or not this revision to CODA's requirements has had any effect, is still under scrutiny. Recent studies seem to indicate that inadequacies still exist. If students have an interest and desire in treating the population with special needs, they must have adequate knowledge of common developmental disabilities, clinical experience in treating the population, as well as an understanding of behavioral support techniques that are so often associated with treating persons with developmental disabilities.

This study demonstrated that those who reported the least amount of clinical and didactic education seemed to be less confident and less likely to have any desire to treat

people with special needs. While some respondents reported being “Confident” despite a small amount of didactic and clinical hours reported, their confidence may be attributed to other factors such as previous experiences or maybe even a more optimistic outlook. Some students reported relatively higher amounts of didactic and clinical learning time yet still felt “Not Confident.” Perhaps the issue may be not the amount of time spent learning but the quality of learning. More effort can be put into determining what methods of instruction may help students to feel more confident in treating people with developmental disabilities. Incorporating more specific standards to assure students are receiving adequate education may lead to more confidence and willingness to treat.

## Chapter V: Conclusion

The purpose of this study was to assess if inadequacies in dental hygiene education exist and if inadequacies may lead to a lack of confidence in treating people with developmental disabilities and a decreased likelihood to treat. The literature reports that there is a need of properly trained and willing dental professionals to help end access to care issues for people with developmental disabilities. This study demonstrated that there are far more students who feel that they are “Not Confident” or “Somewhat Confident” to treat people with developmental disabilities than those who felt “Confident” or “Very Confident.” The same trend was seen in regards to “likelihood to treat” people with developmental disabilities. Although CODA has revised the standards concerning special care dental education, years have passed with no evidence of any significant change. Perhaps CODA could revise the standards to include more specific guidelines for special care education. Behavioral support is said to possibly be the biggest barrier to access to oral health care for people with special needs<sup>16</sup>. It may be beneficial if CODA included more specific standards that included both didactic and clinical education concerning behavioral support. If *quality* of education and not *quantity* of education is the concern, more research can be done to determine more effective ways to educate dental and dental hygiene students to adequately treat people with developmental disabilities.

This study was beneficial in showing that those reporting a lack of confidence and willingness to treat were also the students who reported the least amount of clinical learning. The study also demonstrated that those who reported more hours of clinical and didactic learning tended to report higher levels of confidence in treating people with

disabilities and an increased likelihood to treat people with developmental disabilities. On the contrary, it demonstrated that often times, a seemingly sufficient amount of hours learning does not guarantee a student will feel confident or report likelihood to treat. Perhaps there is a missing link in dental special care education that does not involve a certain amount of didactic learning or clinical learning. A different approach may be necessary to ensure more students are willing to treat people with developmental disabilities. While this study was small and only provided simple descriptive data, a larger study could be done to show relationships between learning and confidence and/or willingness to treat people with developmental disabilities. Most statistical theories are based on large samples, this sample was particularly small. In order to further analyze correlations and perform other statistical analyses, a larger sample size would be required.

Social acceptance issues may be part of the solution to ending access to care issues with people with developmental disabilities. People may demonstrate a “fear of the unknown” and avoid treatment of people with disabilities for reasons other than inadequate education. Promoting confidence and willingness to treat may involve more than education relating to dental hygiene, dentistry, or behavioral support. It may involve more social interactions for students to learn more about people with developmental disabilities and to see that they are just that, “people.” Elmer Gonzalez, RDH MS is the special care instructor at The University of New Mexico. Recently, he added a lecture to his special care curriculum involving a panel of people with developmental disabilities who came to the class to speak to the students and answer any questions they had. This lecture did not involve any formal teaching and was not centered on anything related to

dental hygiene. It simply involved a panel of people with developmental disabilities sharing their thoughts, opinions, and what they thought the students should know. This particular interaction seemed to have a lasting effect on many of the students and many reported an increased interest in treating patients with special needs. Perhaps more non-dental interactions with people with developmental disabilities could lead to a better overall understanding of this population and inspire more dental hygiene students to have a desire to truly learn what it takes to adequately treat them.

Whether or not dental education needs to make any changes may still be argued. Whether or not there is a demand for qualified and willing dental professionals to treat people with developmental disabilities, is not. Many people with developmental disabilities have family members whose general dentist and staff would gladly treat their family members but are unprepared to meet their oral health needs. More research can and should be done to improve access to care for people with developmental disabilities by improving education for the dental workforce who is to treat them.

## Chapter VI: Appendices

### Appendix A-HRPO Approval Letter



THE UNIVERSITY OF NEW MEXICO  
**HEALTH SCIENCES CENTER**

Human Research Review Committee  
MSC 08 4560 BMSB Room B71  
1 University of New Mexico-Albuquerque, NM 87131-0001  
(505) 272-1129 Facsimile (505) 272-0803  
<http://hsc.unm.edu/som/research/hrrc/>

02-Apr-2012

Gonzalez, Elmer  
External Department

SUBJECT: HRRC Determination of Exempt Status  
HRRC#: 12-123  
Study Title: Dental Hygiene Special Needs Education in New Mexico-A Survey  
Approved: 29-Mar-2012

Dear Dr. Gonzalez:

The Human Research Review Committee (HRRC) has reviewed the above-mentioned research protocol and determined that this research is *exempt* from the requirements of Department of Health and Human Services (DHHS) regulations for the protection of human subjects as defined in 45CFR46.101(b) under category 1, based on the following:

1. Exempt Review Study Application submitted 03/09/2012;
2. Investigator's Protocol submitted 03/09/2012;
3. UNMHSC Informed Consent Cover Letter for Anonymous Surveys version 03/09/2012;
4. Recruitment Email to Program Directors submitted 03/09/2012;
5. Dental Hygiene Special Needs Education Survey submitted 03/09/2012.

Because it has been granted exemption, this research project is not subject to continuing review. Also note that the Food and Drug Administration (FDA) regulations as defined in 21CFR50.1 and 21CFR56.101 do not apply to this research.

Changes to the Research: It is the responsibility of the Principal Investigator to inform the HRRC of any changes to this research. A change in the research may disqualify this project from exempt status. Reference the HRRC# and title in all documents related to this protocol.

Sincerely,

Mark Holdsworth, PharmD  
Executive Chair  
Human Research Review Committee

## **Appendix B-Recruitment E-Mail**

Mr. /Mrs. /Ms. /Dr. (name of dental hygiene school director here)

My name is Juliet Roybal and I am a graduate dental hygiene student at the University of New Mexico. My thesis focuses on dental hygiene special needs education. I would greatly appreciate if you could encourage your senior dental hygiene students to take a simple, five minute survey consisting of questions regarding their special needs education in dental hygiene school. Following this e-mail, I will send another e-mail containing consent as well as a link to the survey. Thank you very much for your time and cooperation. Once the initial e-mail is sent, students will have two weeks to complete the survey. If you have any questions, you may contact my thesis committee chair, Elmer Gonzalez, at [egonzalez@salud.unm.edu](mailto:egonzalez@salud.unm.edu).

Thank you,

Juliet Roybal RDH, BS, MS candidate

## Appendix C-Consent Form

**University of New Mexico Health Sciences Center  
Informed Consent Cover Letter for Anonymous Surveys**

**STUDY TITLE  
Dental Hygiene Special Needs Education in New Mexico-A Survey**

Elmer Gonzalez RDH, MS from the Department of Dental Medicine, is conducting a research study. The purpose of the study is to investigate special needs education of New Mexico dental hygiene students. You are being asked to participate in this study because you are a New Mexico dental hygiene student.

Your participation will involve taking a simple survey. The survey should take about 5 minutes to complete. Your involvement in the study is voluntary, and you may choose not to participate. There are no names or identifying information associated with this survey. The survey includes questions such as the amount of time spent learning about and treating persons with developmental disabilities. You can refuse to answer any of the questions at any time. There are no known risks in this study, but some individuals may experience discomfort when answering questions. All data will be kept for 3 months in a locked file in Mr. Gonzalez's office and then destroyed.

The findings from this project will provide information on dental hygiene special needs education as well as attitudes and goals in reference to treating the developmentally disabled. If published, results will be presented in summary form only.

If you have any questions about this research project, please feel free to call Elmer Gonzalez, RDH, MS at (505) 272-4326 or Juliet Roybal RDH,BS at 505-272-4513. If you have questions regarding your legal rights as a research subject, you may call the UNMHSC Office of Human Research Protections at (505) 272-1129.

By following the link to the survey, you will be agreeing to participate in the above described research study.

Thank you for your consideration.

Sincerely,

Researcher's Name  
Elmer Gonzalez RDH, MS  
Researcher's Title  
Assistant Professor

HRPO #: 12-123

Page 1 of 1

Version: 03/09/2012

APPROVED: 29-March-2012

OFFICIAL USE ONLY

EXPIRES:



**UNM**

*Human Research Protections Office*

The University of New Mexico Institutional Review Board (HRRC/MCIRB)

## Appendix D-Survey

### Dental Hygiene Special Needs Education Survey

#### I. Demographics

1. Upon completion of dental hygiene school, I will have my:
  - A. Associate's Degree
  - B. Bachelor's Degree
  
2. Select the appropriate age category.
  - A. 18-25
  - B. 25-35
  - C. 35+
  - D. I choose not to answer this question.
  
3. Please indicate your ethnicity
  - A. White/Anglo
  - B. Hispanic/Latino
  - C. African American
  - D. American Indian
  - E. Asian
  - F. Other

#### II. Special Needs Education

*The following questions refer to any clinical and/or didactic education you have received to treat persons with developmental disabilities. Please answer based on all experiences and information provided to you up to the current time in your education. The questions regarding each individual developmental disability pertain to general information as well as oral/dental considerations and concerns.*

1. Approximately how many didactic (classroom) hours did you receive being educated on Intellectual Disabilities (MR)?
  
2. Approximately how many didactic (classroom) hours did you receive on Down syndrome?

3. Approximately how many didactic (classroom) hours did you on Cerebral Palsy?
4. Approximately how many didactic (classroom) hours did you receive on ADHD (Attention Deficit Hyperactivity Disorder)?
5. Approximately how many didactic (classroom) hours did you receive on Autism Spectrum Disorder?
6. Approximately how many didactic (classroom) hours did you receive on traumatic brain injury?
7. Approximately how many clinical hours did you spend treating or observing treatment of persons with intellectual disabilities?
8. Approximately how many clinical hours did you spend treating or observing treatment of persons with Down syndrome?
9. Approximately how many clinical hours did you spend treating or observing treatment of persons with cerebral palsy?
10. Approximately how many clinical hours did you spend treating or observing treatment of persons with ADHD?
11. Approximately how many clinical hours did you spend treating or observing treatment of persons with Autism Spectrum Disorder?
12. Approximately how many clinical hours did you spend treating or observing treatment of persons with traumatic brain injuries?
13. Approximately how many clinical hours did you spend treating or observing treatment of persons with intellectual disabilities?

14. Rate your confidence with the usage of basic behavioral support techniques (as an alternative to sedation and anesthesia).
1. Very confident
  2. Confident
  3. Somewhat confident
  4. Not confident
15. Rate your confidence in treating all persons with developmental disabilities
1. Very confident
  2. Confident
  3. Somewhat confident
  4. Not confident
16. Do you feel you received adequate education, both didactic and clinical, to adequately treat persons with developmental disabilities?
- A. Definitely
  - B. Somewhat
  - C. No, I feel I did not receive adequate education regarding this population
17. Do you feel you are likely to seek/accept a position as a dental hygienist which requires you to treat persons with developmental disabilities on a regular basis?
- A. Very likely
  - B. Likely
  - C. Not Likely
  - D. No

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