Denver Great Kids Head Start:

Improving Dental Care and Education

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Introduction

Recently on the front page of The Denver Post; there was an article about, "Coverage in Decay." This article discussed the decrease in oral health coverage for the poor and the elderly. There are few dentists in Colorado that take Medicaid, due to low reimbursement rates. “More than 1,000 dentists in Colorado are registered to treat children through Medicaid, according the state figures. The Colorado Dental Association put the figure closer to 500, or even less.” (Human 2007) Without dental resources available to low poverty populations there is going to be a notable increase in dental caries in this population. The increasing incidence of childhood caries and the link between poverty and dental problems has spurred public and private health entities into action with the common goal of improving children’s oral health. One such entity is the federally-funded nationwide Head Start program which serves, under-privileged preschoolers providing them with services that otherwise would be unavailable.

The Denver Great Kids Head Start Program (DGKHS) is a non-profit organization that serves the city and county of Denver with the assistance of five delegate non-profit organizations and four contracted health service agencies, one of which includes Denver Health & Hospital Authority which provides dental services. The vision of the DGKHS program is; “To prepare Head Start children to enter kindergarten confidently with the social, physical, emotional, and cognitive skills and competencies necessary for continuing school success.”(Head Start Vision Statement 2007) The DGKHS program provides services to children age 3-5 years old. Since this population is so young we need to look to the parents to assist with educating and being good examples
for these children. Many of the teachers in these classrooms used to have children of their own in the program so, these teachers are also a great resource to these families.

The DGKHS Program has acknowledged that early detection and treatment of dental caries is a critical factor in maintaining the overall health and well-being of their students and has incorporated dental screenings and exams into their curricula. The Be A Smart Mouth Campaign stated; “Children of racial and ethnic minority groups have about three times more untreated decay and missing teeth due to caries.” (Colorado Department of Public Health and Environment 2004) Oral diseases are progressive and can become more complex over time if untreated. Untreated dental problems can interfere with a child’s ability to chew certain foods properly, hinder proper alignment of permanent teeth and may affect a child’s ability to enunciate clearly. “Untreated dental decay can lead to death in those with weakened immune systems through invasion of opportunistic organisms.” (Centers for Disease Control and Prevention. 2001) According the 2005-2006 DGKHS Program Information Report (PIR), nearly 80% of families enrolled in DGKHS live at or below the federal poverty level. Of the 1083 students enrolled in DGKHS there’s over 900 Hispanic students enrolled which is approximately 61% of the students in DGKHS program. Demographically the population in DGKHS program fit the above statistics for developing dental caries and the need for oral health education and dental services. The number of minority children enrolled in DGKHS is disproportionately represented as Tables 1 illustrates.
Table 1: Racial Distribution Comparison

<table>
<thead>
<tr>
<th>Race</th>
<th>DGKHS</th>
<th>Denver Public school</th>
<th>Denver County</th>
<th>Colorado</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>White non-Hispanic</td>
<td>36%</td>
<td>20%</td>
<td>83%</td>
<td>90%</td>
<td>80%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>61%</td>
<td>57%</td>
<td>34%</td>
<td>19.5%</td>
<td>14%</td>
</tr>
<tr>
<td>Black</td>
<td>27%</td>
<td>18%</td>
<td>10%</td>
<td>4%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Asian</td>
<td>2%</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.74%</td>
<td>1%</td>
<td>1.4%</td>
<td>1.1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 2 shows a disturbing trend among DGKHS preschoolers. Although the number of children in 2006-2007 completing dental exams increased and the percentage needing dental treatment decreased, fewer children received treatment and/or preventative care.

Table 2: Below Poverty Level Comparison

<table>
<thead>
<tr>
<th>%Below Poverty Level</th>
<th>DGKHS</th>
<th>Denver County</th>
<th>Colorado</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>80%</td>
<td>15.29%</td>
<td>10.2%</td>
<td>12.7%</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows a disturbing trend among DGKHS preschooler population. There has been marked improvement from the PIR over the last couple years. There needs to be larger positive results in all of the categories of dental health to ensure that this population is getting the resources they need.
Table 3: Oral Health Care in the Head Start Community

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Children completing dental exams</td>
<td>75.51%</td>
<td>93%</td>
</tr>
<tr>
<td>Children receiving preventative care</td>
<td>96.42%</td>
<td>55%</td>
</tr>
<tr>
<td>Children needing dental treatments</td>
<td>35.75%</td>
<td>32%</td>
</tr>
<tr>
<td>Children receiving dental treatment</td>
<td>76.19%</td>
<td>51%</td>
</tr>
</tbody>
</table>

There is a need to not only give these children screenings and treatment but also to educate the children, parents and teachers on the importance of oral health. “Children learn best by example. If we could bring the education and importance of oral health to the parents we may be able to continue to decrease the incidence of oral caries in these young children.” (Oral Health Steering Committee 2007)

Problem: Oral Health and Denver Head Start Population

The DGKHS Program has acknowledged that early detection and treatment of dental caries is a critical factor in maintaining the overall health and well-being of their students and has incorporated dental screenings and exams into their curricula. Denver Health dentists provide annual dental exams and fluoride applications to preschoolers at DGKHS centers citywide. The exams last approximately 5-10 minutes; dental condition is rated on a scale from 1 to 3, with a rating of 1 indicting the need for urgent dental attention. During our observation we witnessed more than one child in need of urgent treatment. A number of others had prompt but not urgent needs. Several children had multiple steel crowns on their primary teeth: one child had 12 out of 20 teeth crowned.
Surprisingly, most children identified as having severe decay showed no signs or symptoms of pain.

We also attended the November 8, 2007 Health Advisory Committee Meeting, chaired by DGKHS Health Administrator Gloria Richardson. Also, in attendance were heads of other DGKHS delegations and parents from various Head Start centers. When the topic turned to oral health, parents offered reasons as to why they fail to keep their child’s dental appointments. One parent characterized a trip to the dentist as “Just another appointment that I have to take time off work for.” The same parent also made the point that dental care is lowest on the list of priorities. “I’m a busy single mother without reliable transportation and a boss who has little tolerance for tardiness or frequent absences.” Another parent stated that visits to the dentist are “scary” for young children and many parents want to spare their child the trauma. Other obstacles included lack of knowledge surrounding eligibility for care, inability to afford co-pays or sliding scale fees, and parental disinterest in maintenance of their own oral health.

The statements made by parents at the Health Advisory Committee echoed most of what one DGKHS nurse reported a week earlier. When questioned why parents would place oral health lowest on their list of priorities, she offered up a list of potential reasons:

- Lack of transportation
- Parents overwhelmed with other pressing duties
- Parents not acknowledging the danger of festering dental decay
- Child’s acclimation to oral pain and subsequent lack of complaints
**DGKHS and Healthy People 2010: Common Goals and Solutions**

In recognition of the ongoing dental deficiencies observed in students, DGKHS representatives meet regularly with a consortium of agencies dedicated to improving pediatric oral health through education and efforts to increase access to services. The DGKHS Oral Health Steering Committee is in the process of developing a comprehensive Oral Health Education Plan that can be standardized for use in DGKHS programs system-wide. In addition to increasing the number of dental services received by Head Start children, expected benefits resulting from the education plan include enhanced parental understanding of best practices in oral health and expanded strategies for staff teaching and monitoring of outcomes (DGKHS, 2007). Current projections and goals are being discussed for inclusion in the DGKHS 2008-2011 grant proposal.

In similar fashion, at the outset of the 21st century the U.S. Department of Health and Human Services gathered together a broad coalition of public and private agencies and launched Healthy People 2010 (HP 2010). Initiated well after Head Start programs had acknowledged the importance of preventative health and education, HP 2010 was developed to serve as a framework for prevention aimed at identifying the most preventable threats to individual health. It establishes national goals aimed at reducing these threats. Oral health has been identified by HP 2010 as one of the threats to individual health that can be mitigated through education and increased access to care. Oral health is “Goal 21” in the HP 2010 Objectives Document. Four of their listed goals have been and/or are being currently addressed by DGKHS:

- **Goal 21-1:** Reduce the proportion of children and adolescents who have dental caries in their primary or permanent teeth.
• **Goal 21-2**: Reduce the proportion of children, adolescents and adults with untreated dental decay

• **Goal 21-10**: Increase the proportion of children and adults who use the oral health care system each year

• **Goal 21-12**: Increase the proportion of low-income children and adolescents who received any preventative dental services during the past year

The HP/2010 Objectives Document offers these recommendations for realizing these goals:

- Prenatal diet counseling
- Oral hygiene teaching
- Use of fluoride
- Decrease the transmission of germs
- Prevention of baby bottle decay

**Literature Review: Attitude and Behavioral Change through Motivational Interviewing**

Recognizing that parental attitudes and behaviors toward dental prevention must be altered before the cycle of benign neglect can be broken, Weinstein, et al., (2004) attempted to engage parents of young children at high risk for development of caries by using an innovative counseling technique known as Motivational Interviewing (MI).

MI was developed originally for use as a brief contact intervention in problem drinkers (Miller & Rollnick, 1995) and is described by its developers as “…a directive, client-centered counseling style for eliciting behavior change by helping clients to explore and resolve ambivalence” (1995). It can be contrasted with other forms of non-
directive counseling in that it is more focused and goal-oriented and that it’s central purpose is the examination and resolution of a client’s ambivalence toward their own behavior change. Miller and Rollnick state “…the counselor’s task is to facilitate expression of both sides of an ambivalence impasse and guide them toward an acceptable resolution that triggers change” (1995). It is important to note that a counselor using MI does not attempt to cajole, coerce or persuade the client; rather attempts are made to mobilize the client’s intrinsic values and personal goals to stimulate behavior change (1995). MI is called “interviewing” because it involves data gathering through careful listening and strategic questioning, much like techniques used by journalists.

In their study, Motivating parents to prevent caries in their young children, Weinstein et. al. set out to determine if MI would have a greater effect on parental behavioral change than conventional health education. Two groups of parents were enlisted from the Punjabi community in Vancouver, British Columbia and assigned to either an MI (experimental) group or a conventional health education (control) group (2004). Parents in the control group were offered an educational pamphlet and video. The experimental group received a personalized MI counseling session and six follow-up telephone calls in addition to the pamphlet and video (2004). After one year, an evaluation of the program showed that there were fewer new carious lesions in the MI group than in the control group. A follow-up study conducted two years later not only confirmed previous findings but found that the effect was attributable to increased compliance with fluoride varnish treatments (Weinstein, et. al., 2006) thus leading the researchers to believe that MI did, in fact, contribute to measurable behavior changes.
Motivational Interviewing and Theories of Behavior Change

The effectiveness of MI as a motivating tool has been demonstrated repeatedly in numerous studies (Burke, et. al., 2003; McCambridge, J., 2004; Collins, et. al., 2006; Monti, et.al., 2007) and is based on established theories of behavior change in humans. A central tenet of MI is that change is a process and not a discrete event (Borrelli, B., 2006). This idea aligns with Prochaska and DiClemente’s Stages of Change Model (1992) which suggests there are several levels of mental preparation an individual must progress through before action will be taken. These include

1. Pre-contemplation: no intention of changing behavior
2. Contemplation: considering change
3. Preparation: steps are being taken to change
4. Action: change is initiated
5. Maintenance: change is maintained for at least 6 months

MI takes into account an individual’s location in this change continuum by adapting counseling approaches that are appropriate to each stage. Those in earlier stages may require more encouragement and confidence-building and those in later stages may be more open to education about how to change and how to avoid a relapse.

The Health Belief Model (HBM) of behavior change, developed in the 1950’s to explain the lack of public participation in health screening and prevention programs, asserts that perceived barriers are the most influential variable for predicting and explaining health behaviors (Family Health International, 2002). An individual’s health-related behaviors are thought to depend on their perception of several critical areas (Grizzell, 2007):

1. The severity of the health threat
2. Susceptibility to the threat

3. Benefits of taking action

4. Barriers to action

Altered perception of barriers to change is what MI counselors strive to achieve in their encounters with clients through the elicitation of “change talk” meant to facilitate the exploration of hesitations and fears surrounding change. The HBM also incorporates cues to action as a means of maintaining patterns of behavior (Grizzell, J., 2007). These cues are essential to the success of MI, as will be discussed later.

The Theory of Reasoned Action (TRA) assumes that self-efficacy plays a large role in behavior change, that is, the more capable one feels about initiating and sustaining change, the more likely s/he will be to adopt change. In MI, self-efficacy is enhanced through encouraging affirmations.

Program Plan

Literature Review

There are public health programs in other states that are attempting to address and decrease the incidence of caries in children. Dental caries is a preventable infectious disease that if left untreated can cause significant morbidity that requires costly treatments (Donahue, Waddell, Plough, Aguila, & Garland, 2005). Donahue et al. state that “dental caries is the single most common chronic childhood disease – 5 times more common than asthma and 7 times more common than hay fever” (2005). The Access to Baby and Child Dentistry (ABCD) program was started to address the high incidence of oral disease and limited access to young, Medicaid-eligible children in Washington State.
Increasing access to prevention and early treatment for these children is the goal of the program (Donahue et al. 2005).

The ABCD program is a statewide partnership of health districts, community health advocates, the University Of Washington School Of Pediatric Dentistry, the state Medicaid program, and the Washington Dental Service Foundation (Donahue et al. 2005). The ABCD program equips and encourages dentists to serve young Medicaid patients by training them in pediatric dental techniques and enhancing reimbursement. Family counseling is also used to increase oral care compliance and reduce no show rates. In the end, evaluation of the program shows that attitudes and behaviors are changing in participating families and dentists, with more young, low income Washington children receiving oral health care (Donahue et al. 2005).

Weinstein et al. enrolled parents of young children and assigned them to either a motivational interviewing (MI) group or a traditional health education (control) group (2005). Parents in the control group received a pamphlet and watched a video, while parents in the MI group received, in addition to the pamphlet and video, a personalized MI counseling session and six follow-up telephone calls (2005). After one year, an evaluation of the program showed that there were fewer new carious lesions in the MI group than in the control group. Weinstein et al. conclude that MI is a promising approach that should be further investigated.

One of the answers may lie with prevailing parental attitudes in the population that DGKHS serves. For example, it has been established that the prevalence of childhood caries is greatest among low-income populations and so it is with the DGKHS preschoolers. It has been shown that this population generally tends to ignore caries in
primary teeth until a child becomes symptomatic (Milgrom, et.al., 1998). The treatment at this stage is usually invasive and an unpleasant experience for both child and parent. This discourages further contact with the dentist until the child’s “…need again becomes extreme” (Weinstein, Harrison & Benton, 2004). Weinstein et. al. assert that parental attitudes toward preventative dentistry need to before significant behavioral change is achieved (2004). Recall the DGKHS parent who characterized a visit to the dentist as “scary” and as something that many parents seek to avoid.

Program

The Head Start program, through ongoing infrastructure building, population-based and enabling services, has effectively broken down many of the social and ecological barriers to behavioral change. Head Start staff (teachers and nurses) have provided the educational and social support many parents in their population lack. Beyond continued improvement of the delivery of services mentioned above, what more can DKGHS policy planners do to move closer to their goal of improving the oral health of their preschoolers?

Our proposed intervention is to create a pamphlet for Denver’s Great Kids Head Start (DGKHS) that briefly outlines the importance of oral health in preschool age children (see Appendix A). The goal is that this pamphlet helps parents to understand the importance of good oral health and how to achieve healthy teeth in their young children. It is hoped that this pamphlet is given out to parents in conjunction with Motivational Interviewing to promote preventative oral health. Future outcomes should be measured
in the increase in DGKHS children receiving dental care and a decrease in DGKHS children with dental caries.

This intervention coincides with the Health Belief Model (HBM), a behavioral change theory. The HBM is a psychological model that attempts to explain and predict health behaviors by focusing on the attitudes and beliefs of individuals (Family Health International, 2002). The HBM was developed in the 1950’s to explain the lack of public participation in health screening and prevention programs. Literature reviews of HBM studies show that perceived barriers as the most influential variable for predicting and explaining health-related behaviors. More recently researchers are suggesting that an individual’s perceived ability to successfully carry out the “health” strategy greatly influenced their decision and ability to enact and sustain a changed behavior (FHI, 2002). This idea is taken in to account by making the pamphlet easy to understand and by making the recommendations for good oral health easy to follow. Our intervention also takes into account the perceived barriers that the parents might have with the dental treatment by recommending the use of the pamphlet in conjunction with motivational interviewing. Hopefully in combination these interventions can help break down those barriers and allow successful prevention of dental caries in diverse both racially and ethnically low-income children.

Evaluation

We began our project by presenting the previous block’s pamphlet for evaluation to determine what changes or additions needed to be made. We began with presenting their pamphlet to a Head Start parent forum, then we presented to several different Head
Start committees including the Oral Health Steering Committee. We got both positive and negative feedback from each group that was presented the pamphlet. We were able to get the most feedback from the Oral Health Steering Committee. One of the recommendations was to simplify the brochure so that the pamphlet could be understood if translated as well as a quick read for busy parents. We suggested to the Oral Health Steering committee to use motivational interviewing in conjunction with our new pamphlet. Our ideas were well received and together with the Oral Health Steering Committee we were able to brainstorm different options to get staff trained in motivational interviewing. We were able to make a simple yet straightforward pamphlet in which it would easily be translated into several different languages if needed. Our final presentation of the new pamphlet as well as resources for motivation interviewing classes and book options to Gloria Richardson and the administrators of DGKHS program was on December 14, 2007. The initial response of the staff at the meeting was positive with only a couple of corrections to the pamphlet. Gloria Richardson requested that the pamphlet be sent to her for further critiquing, but her comments were not received in time for the paper. DGKHS will then determine if motivational interviewing can be budgeted for the DGKHS program. It was difficult to complete this evaluation section of the paper due to the short time period to complete, present and get feedback from our project. We, as well as our clinical instructor Kathy Shannon, have attempted several times to get a hold of Eileen Thomas to help clarify what needed to be covered in this section without any success.
References


Family Health International (2002). Behavior Change – A Summary of Four Major Theories.


http://www.whocollab.od.mah.sel.
4 Ways to Keep Your Childs Teeth Healthy

1. Brush your teeth with your child – children learn from what you do, be a good example!

2. Eat healthy – avoid sticky and sweet foods and drinks. Choose raw vegetables, milk, cheese and nuts.

3. Start taking your child to the dentist at 1 year and then go every 6 months – keep your appointments!

4. Don’t share germs – it can cause tooth decay! Germs can spread by sharing spoons, forks, and putting things in your mouth and then in your child’s mouth.

Taking care of your child’s teeth gives them a pretty smile, helps them speak clearly, and can prevent other diseases.