

Health-Hop: An Effective Approach to Adolescent and Child Health Education 1

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I. Introduction

Reaching teens and children with health information and effectively teaching them is essential for good health and compliance. Health professionals must use effective techniques to achieve these goals. For many years schoolteachers have used songs to improve learning and memory in the classroom. (30,31) Health professionals, teachers, and parents can also incorporate songs into health care teaching and improve learning and compliance among children and teens, in a manner that is perceived as fun, "cool", and socially acceptable. Today, Hip-Hop is the music of choice for many and is the ideal genre for capturing their attention. (29) Health-Hop®, medical rap music, has been created as an effective tool for reaching this population.

II. Health-Hop®: Medical Rap Music

Being and appearing "cool" is important for many young people. Health Hop®, a fusion of medical information and rap music makes the learning experience fun and presents healthy behavior and compliance as "cool". All songs are written by board certified family physician Dr. John D. Clarke using an evidence based approach and incorporate information gathered from a thorough review of literature, guidelines, and recommendations set forth by organizations including the American Academy of Pediatrics, The American Academy of Family Physicians, The Center for Disease Control, American Lung Association, American Academy of Asthma Allergy and Immunology and others.

Health-Hop® songs are divided into two categories: Medical Songs and Biopsychosocial Songs. The medical songs cover topics including asthma, diabetes, allergies, and sickle cell. They present the same information presented in a conventional lecture, teach prevention strategies, and promote compliance. Basic information on issues such as medication and treatment is delivered in a fun, cool, and entertaining manner. Biopsychosocial factors relate to or concern the interplay of biological, psychological, and social aspects of disease in contrast to the strictly biomedical. The Biopsychosocial Songs cover topics including teen pregnancy, HIV, smoking, substance abuse, eating disorders, and violence. These songs are intended to provoke and shape thought, raise issues which may not have been considered, present realistic scenarios and outcomes, make healthful choices appealing, educate without preaching, and provide positive entertainment.

A comparative study concluded teaching asthma information using the Health Hop® songs Asthma Stuff Part I and Asthma Stuff Part II is more effective than a conventional lecture on asthma. (See Section VIII.D. *The Effectiveness of Rap Music in Asthma Education* Page 5)

III. Music: In Health Care

In the health-care setting music has been used for therapeutic effects, to relay and teach medical information, affect behavioral change, as well as to promote compliance and interest in health among children, adolescents, and young adults. (21) Music is recognized as a powerful communicative force that affects attitude, mood, emotions, and behavior. (31,14) It has been used to comfort dying patients, to comfort patients in operating rooms, to distract from pain in situations such as labor, and to soothe Alzheimer's and psychiatric patients. The physiologic effects of music on patients' heart rates, blood pressures, respiratory rates, oxygen saturation, skin temperature, perception of pain, anxiety levels, and mood states has been investigated, and the findings indicate that music is an effective intervention for pain and anxiety states. (14,22,31) Several studies have shown music, when used in conjunction with other methods, facilitates relaxation and helps in decreasing aggressive behaviors. In community settings music may motivate participants to become proactive in behavioral change. (21)

IV. Music: Its Function in Adolescent Socialization

Music is important to the identity of adolescents. Music plays a large role in their socialization, and helps them define important social and sub-cultural boundaries. (17) As adolescents gain independence, they turn to music as a source of information on subjects such as sex and relationships. Music can introduce adolescents to political issues through concerts organized around political causes such as Amnesty International, Live Aid, or Farm Aid. For teens, music is an important symbol in their struggle for independence and autonomy. Music has been recognized as a medium through which adolescents define their peer group identities, and move away from attachment to their families. Rock and rap music have often functioned to distinguish adolescent culture from adult society. (22)

Identification with a particular musical genre may indicate resistance to authority, provide an

outlet for personal troubles or conflicts with parents, or yield a sense of relaxation, release, and security in new environments. Peers may demand familiarity with a particular artist, group, or type of music as a criterion for association with certain social groups and musical personalities are often the subject of adolescents' conversations. (22)

V. Music: Its Importance to Adolescents

Between grades 7 and 12, the average teenager listens to 10,500 hours of music, which is slightly less than the total cumulative hours spent in the classroom from kindergarten through high school. It has been illustrated in several studies that during this period, music becomes an increasingly powerful medium in the adolescent's life, and television viewing decreases. (16,22)

Klein and associates conducted a survey of 2760 teens, 14 to 16 years old, in 10 southeastern cities, which revealed that they listened to music an average of 40 hours per week. The girls listened to the radio about six hours more per week than the boys, and older adolescents listened to the radio more and watched television less than the younger ones. The authors suggested that mass media health promotion efforts could more specifically target adolescents, and knowing more about the media preferred by adolescents can help health educators and health-care providers better connect with them when dealing with their health behaviors and issues. They concluded that radio may be a more efficient medium than television for reaching many adolescents at high-risk. If television is used, messages placed in or around music videos and televised movies are more likely to be viewed by teenagers engaging in high-risk behaviors. (16)

VI. Music: An Effective Teaching Tool

Music is effective in teaching and relaying information, especially to children, as evidenced by the success of shows such as Sesame Street and Barney. Children's music in general, usually serves to instruct. A song about sharing can introduce the concept of sharing. Children can learn about people, as in a song about important historical figures such as Martin Luther King, or places, such as a song about the Antarctica. Songs are also an excellent way to teach children new words and languages. (18) In 2000 Tinari and Khandke explored using music to help students learn economics (32). Concepts about health and health related behavior could be introduced in the same way. (21)

A. Musical Intelligence: May Awaken and Stimulate Memory and Learning

Howard Gardner developed the theory of multiple intelligences in 1983. This theory states that teachers in schools usually focus on linguistic ("word smart") and logical-mathematical intelligence (33). According to Gardner, individuals also possess six other intelligences, which include pictures (spatial intelligence), music (musical intelligence), self-reflection (intrapersonal intelligence), a physical experience (bodily-kinesthetic intelligence), a social experience (intrapersonal intelligence) and an experience in the natural world (naturalist intelligence). Lessons need to be planned in a manner that utilizes different intelligences that we possess. In order to assess what kids know, teachers need to become "assessment specialists" and devise ways of assessment that utilize activities that are meaningful to students (33).

According to David Lazear (1991), the musical intelligence theory is a way to awaken and stimulate memory and learning. Using music to teach is a way to use a multi-sensory approach to the learning process that will enable students to absorb content in a relaxed state of mind (34). The reason that music works so well for any type of memory storage is that a song is "chunked" with rhythm and rhyme (35).

B. Educational Theory

The educational theory supports linking the teaching of a desired set of actions, such as asthma management, with a desirable past time activity (36). Combining music and health information employs this theory as children and adolescents are particularly drawn to music as a pleasurable activity (16,22).

C. Music Enhances Memory

Music can enhance memory in several ways. Musical sounds help to capture attention allowing more information to be absorbed. Normal brain wave function is usually in the BETA state. Music can evoke the more relaxed THETA brain wave state and the ALPHA brain wave state, which is a perfect state for learning and taking in information through auditory channels. These brain wave states are more conducive to memory and enhanced creativity. (31, 37)

Learning through songs can stimulate both the left and right side of the brain. Cognitive function is unified and three of the four modalities through which the brain processes information are automatically stimulated. These modalities include the auditory, kinesthetic/tactile (movement), and tactual (emotional). When song lyrics are viewed the visual modality is also stimulated. By increasing the number of senses involved in learning, we increase the ability to understand and improve recall. Music provides meaning and relevance to the learning process through its inherent emotional stimulation and rhythmic patterning. Songs, poems, rhymes, and raps can serve as incredibly effective vehicles for long term and cumulative learning. (31, 37)

D. Rhythm and Rhymes Enhance Memory

Rhymes have been shown to foster the ability to recall information. The effectiveness of using mnemonics to aide in study is based on this principle. Rhythm can enhance memory and the song used to teach the ABC's is one example. According to Ron and Nancy Brown of *Intelli-Tunes*, "Advertisers have used musical techniques for years. Jingles incorporate clever rhythmic patterns created specifically to help us remember their products. Can you recall the ingredients of a Big Mac? "Two all beef patties..." or "Winston tastes good..." (Does it really?) How about "Yo quero, Taco..." or "Got Milk?" Through repeated rehearsal, rhythmic data is naturally stored in the memory for later retrieval, even if it sometimes is something you really don't care to remember. If merchandisers can get consumers to focus and remember, why can't educators use a rap, chant, poem, or song to teach skills, concepts or even learning standards? The regular use of music would therefore become an incredibly powerful delivery system for processing and storing information." (31)

VII. Rap Music: An Effective Genre For Reaching & Teaching Children and Adolescents

Rap is a vocal style that incorporates spoken or chanted rhyming lyrics in a rhythmic fashion with an accompanying musical background. The fundamental elements of rap songs, rhythm and rhyme, make them ideal for memory as discussed in the previous sections. Rap music has emerged as a popular form of entertainment, and Hip-Hop culture has crossed racial and cultural lines in its appeal. (38,19) Adolescents are particularly intrigued with and influenced by the lyrics in the songs, the style of the music, the culture of hip-hop, and the glamorous lifestyles of the artists as portrayed in rap videos. This musical art form undoubtedly has great influence over children, adolescents, and adults, of all races and walks of life. Rap music, is perhaps the most ideal genre for capturing attention and effectively reaching children and adolescents. Therefore, it can serve as an important tool for effective medical education programs.

A. The Origins of Rap Music

Although rap, as we know it, originated in the Bronx, NY in the mid to late 1970's, techniques of rap can be traced to Africa. This is exemplified by the West African griot, or troubadour/storyteller. Griots entertain and educate their audiences by reciting tribal history and current events to the accompaniment of drums or other percussive instruments. In the early 1970s the radical rap poetry of the group The Last Poets formed a prototype for some later rap artists. Clive Campbell a.k.a. Cool DJ Herc introduced and Afrika Bambaataa are credited with originating rap as it is today, and they used rap music and break dancing to encourage rival gangs to dance rather than fight.

B. Popularity of Rap Music and Hip-Hop Among Adolescents of All Races

In addition to entertainment, rap music provides a significant form of informal education for adolescents, which extends far beyond the confines of the classroom and into their peer group circles. (24) The fan base stretches from the inner city to the suburbs, crossing class and racial divisions. (20) In 1988, MTV debuted *Yo! MTV Raps*, which quickly became the channel's highest rated show. (26) The sales of rap music increased by 150 percent between 1996 and 1999, and sales topped 80 million in the United States for the first time ever in 1998. (20) According to a Sound Scan study in 1997, R&B, combined with rap, were the top-selling musical genres overall and 71 percent of rap music was purchased by white consumers that year. "Hip-hop style is pop style- Teenage Research unlimited reported in October '97 that baggy pants were 'in' for 78 percent of white teenagers. Ralph Lauren, Tommy Hilfiger and other fashion designers court hip-hop's imprimatur." (19) This trend has continued, and currently one out of every 10 records sold in the U.S. is hip-hop and 80 percent of rap consumers are White. In 2000, hip-hop grossed \$3 billion and outsold country music to become the third highest selling

music genre behind R&B and pop. (29)

Robertson and associates investigated a group of 126 adolescents ranging in age from 11 to 21 years. Sixty two percent were females, 36 percent were males, 36 percent were white, 24 percent were black, 19 percent were Latino, 10 percent were Asian, and 12 percent were other. Data obtained in the study revealed that the majority of participants selected rap as their musical preference. It was chosen by 29 percent of the participants, 25 percent chose multiple musical genres, 13 percent chose alternative music, 10 percent chose rock and heavy metal, 9 percent chose R&B, 8 percent chose other, and 5 percent chose oldies. (15)

(The term Hip-Hop is often used interchangeably with rap. Rap music is the musical genre originating in Hip-Hop culture. Hip-hop music, by stricter definition refers to the instrumental music production style of rap, which is often incorporated in the production of other musical genres. Hip-hop culture was originated in the South Bronx and Manhattan by black and Latino “b-boys” and encompasses rapping, DJing, break dancing, graffiti writing, and a style of dress).

C. Using Hip-Hop for Small Group Counseling

The concept of using rap music as a medium for group communication and dialog has been described and implemented. Stephens explored this method in group sessions with African-American undergraduates to assist in solving personal problems. Stephens and associates also described a model for using hip-hop music for small group HIV and AIDS prevention counseling with African-American adolescents and young adults. (21)

Their observations are as follows:

“One cannot over emphasize the effectiveness of using mediums that are developed within the cultural and environmental influences of the target audience. ... As a consequence, it is feasible that using hip-hop music may accentuate the active listener’s ability to recognize risk reduction messages attached to lyrics. The resulting health messages thus become unique to the belief orientations that created this musical form. The goal is to use materials that participants are likely to encounter when away from the counseling environment. ... The overall implications for use of hip-hop music in health promotion are unlimited. First, this method uses culturally relevant materials to address the educational and health needs of the target community. Second, the method is grounded in an approach that stimulates cooperative learning based on peer developed content. Moreover this medium, after a review of songs for appropriate content, is applicable to other health promotion activities such as violence/harm reduction and substance abuse prevention. The authors contend that such an approach holds heuristic value in promoting HIV/AIDS prevention among African American young adults. Additional testing of the intervention is warranted in the refinement of this innovative intervention.” (21)

VIII. Using Rap Music For Asthma Education

A. The Effects of Asthma on Children and Adolescents

According to the Center of Disease Control and Prevention, nine million U.S. children under age 18 have been diagnosed with asthma (39). In the United States school children ages 5-14 have the highest prevalence of asthma of all age groups (40). Adolescents with asthma represent a particularly vulnerable group of patients, as the disease affects multiple aspects of their physical and emotional health.

A study looking at the impact of asthma on the health status of adolescents conducted in Baltimore, Maryland, revealed that compared to well teenagers, asthmatic teenagers had lower perceived well-being, more physical and emotional symptoms, greater limitations in activity, more co morbidities, and more negative behaviors that threatened social development. (2) These findings are consistent with those of a study involving 4550 Australian adolescents who were studied to determine an association between diagnosed asthma, health behavior, social adjustment, and psychosomatic symptoms. Adolescents with asthma reported feeling lonely more often than non-asthmatics, had higher reported alcohol and tobacco use, had more negative social perceptions and feelings, and experienced more psychosomatic symptoms. (3)

B. Adolescent Asthmatics and Compliance

Educating the adolescent patient can be, without a doubt, one of the most challenging tasks faced by the physician. Adolescents think in the "here and now", and often feel invincible. To compound the problem, adolescents are at a stage where they are seeking acceptance. If complying with medical treatment is perceived as not being socially acceptable, or if the adolescent is convinced compliance with treatment will decrease his or her status in the peer group, the adolescent patient may very well opt not to adhere to the treatment regimen.

When interviewed to determine adherence to treatment behavior, adolescent asthmatics revealed they did not take their prophylactic asthma medications regularly, and delayed using their bronchodilators. Many were frustrated with their illness. The majority stated they were not always forthcoming in discussing with their physician how they managed their asthma. They also expressed dissatisfaction with leaflets and pamphlets as effective means for asthma teaching, and believed that information about asthma should be personalized, and healthcare providers should use audio-visual aids to illustrate what was being explained. (4)

C. Guidelines on Asthma Education

The 1991 Expert Panel Report 1 concluded that education delivered within an active partnership between patient and physician is the cornerstone of asthma management, and should be carried out by health care providers delivering asthma care. (5) The Expert Panel Report 2 called for an enhancement of the delivery of educational messages about asthma. The report concluded that instruction in asthma self-management should maintain sensitivity to the patient's cultural language, beliefs, and practices, and must be tailored to the individual patient's environment. It has been recommended that asthma education should be sensitive to a child's culture and language (25). Hip-Hop is a culture (38) and rap is the music and a significant mode of communication of that culture. Employing rap music in asthma education therefore can reach teens within their culture and incorporates their language in teaching.

D. The Effectiveness of Rap Music in Asthma Education

I. Asthma Rap Song Study 2004

In 2004 an comparative study entitled, *Teaching Children About Asthma Using An Asthma Rap Song* was conducted by Elizabeth Clarke, RN, MSN to evaluate the effect of teaching 60 grade school children about asthma using two asthma rap songs Asthma Stuff ©1999 and Asthma Stuff 2 ©2001. All of the children attended a parochial school in Queens, New York. They ranged in age from 11 to 14 years and were either in the 6th, 7th, or 8th grade. One-half of the students were exposed to the traditional method of teaching information about asthma, that is, lecture/discussion and demonstration delivered by a school nurse. The experimental group was exposed strictly to two rap songs, Asthma Stuff ©1999 and Asthma Stuff 2 ©2001, written by John D. Clarke, MD.

The sixth grade increased their asthma test score post rap song by 29.5% compared to a 14.44% increase in average post test score for the asthma lecture group. The seventh grade increased their test score post rap song by 35.23% compared to a 13.33% increase in average post test score for the asthma lecture group. Finally, the eighth grade test score post rap increased by 30.56% compared to a 11.67% increase in average post test score for the asthma lecture group.

The hypotheses, children will retain more information about asthma by hearing and reading lyrics to an asthma rap song than by receiving information about asthma by attending a traditional lecture and demonstration, was supported and significantly significant at the .002 employing ANOVA.

The findings of this study support using rap music to educate children about health problems. It was shown that Dr. Clarke's asthma rap songs are an effective way of helping children and teenagers recall information on asthma triggers, medication, and the proper use of the inhaler to prevent asthma attacks.

II. Asthma Rap Song Study 1998

In 1998, Dr. John D. Clarke investigated the effectiveness of rap music as an educational tool for increasing adolescents' knowledge about causes and treatment of asthma. The study

subjects were exposed to a 15-minute asthma education video, which included a rap song entitled "Asthma Stuff". At the conclusion of the song a dialogue between two young adult males portraying asthmatics takes place.

One hundred and twenty-five Queens, NY high school students, ages 16 to 18 years completed a questionnaire (consisting of 22 questions) before and after viewing the video. The mean score increased by approximately 36.47% (from 12.45 ± 0.492 to 16.99 ± 0.50 (95% confidence)). The differences between the mean scores on the questionnaires before and after were statistically significant (Paired-Two-Sample t-Test $P=1.10 \times 10^{-34}$). The effect of pre-test on post-test performance was controlled for and shown to have no effect. The study group comprised of 48% female, 40% Asian, 39% Caucasian, 7% Black, 2% Latino, and 2% Other. Many stated the rap song caught their interest and the discussion portion of the video had much less of an impact. In an informal follow up with some of the students 8 months later, they expressed that the rap song left a lasting impression, as several students continued to sing the chorus of the song for weeks. They indicated that several students had actually made reference to the song during an exam, which included questions about asthma.

Three hundred and eleven high school students viewed the video and were surveyed concerning feelings about rap music. The data showed that 78% believed rap could be used to teach and 63% indicated they listened to rap. Feedback revealed that the students felt Rap music was an effective manner of teaching, and they expressed that they had fun during the process of learning.

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